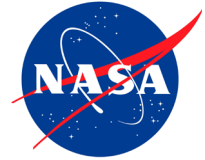


National Aeronautics and Space Administration



**Headquarters**

Washington, DC 20546-0001

February 23, 2022

Reply to attn. of: Office of Communications

John Greenewald  
27305 W. Live Oak Road, Suite 1203  
Black Vault  
27305 W. Live Oak Road, Suite 1203  
Castaic, CA 91384  
[john@greenewald.com](mailto:john@greenewald.com)

Re: FOIA Tracking Number 22-HQ-F-00140

Dear John Greenewald:

This is our final response to your Freedom of Information Act (FOIA) request to the National Aeronautics and Space Administration (NASA), dated December 7, 2021, and received in this office on December 7, 2021. Your request was assigned the above-referenced tracking number. You seek emails sent to or from, bcc'd or cc'd, Senior Advisor to the NASA Administrator Randy Cruz which contain the following keywords: "Unidentified Aerial" and/or, "Unidentified Flying" and/or, "UAP" and/or, "UFO" and/or, "Unidentified Spacecraft" and/or, "Unidentified aircraft" and/or, "UAPTF" dated 8/01/2018 to 07/31/2021.

In response to your request we conducted searches of NASA's Offices of Information Technology and Administration using the search terms "Unidentified Aerial", "Unidentified Flying", "UAP", "UFO", "Unidentified Spacecraft", "Unidentified aircraft", and "UAPTF".<sup>1</sup> Those search(es) identified records responsive to your request. We reviewed the responsive records under the FOIA to determine whether they may be disclosed to you. Based on that review, this office is providing the following:

940 page(s) are released in full (RIF);<sup>2</sup>  
115 page(s) are released in part (RIP);  
247 page(s) were referred to Department of Navy.

NASA redacted from the enclosed documents certain information pursuant to the following FOIA exemptions:

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<sup>1</sup> If you are dissatisfied with these search terms, please provide NASA with additional terms you deem appropriate.

<sup>2</sup> All page counts are approximate numbers.

### **Exemption 2, 5 U.S.C. § 552(b)(2)**

Exemption (b)(2) of the FOIA protects from mandatory disclosure documents “related solely to the internal personnel rules and practices of an agency.” 5 U.S.C. § 552(b)(2). NASA invokes exemption 2 to protect agency’s meeting weblinks.

### **Exemption 5, 5 U.S.C. § 552(b)(5)**

Exemption 5 protects “inter-agency or intra-agency memorandums or letters which would not be available by law to a party other than an agency in litigation with the agency.” 5 U.S.C. § 552(b)(5). Courts interpret Exemption 5 to incorporate three primary privileges: the attorney work-product privilege, the attorney-client privilege and the deliberative process privilege. NASA invokes the deliberative process privilege.

The deliberative process privilege is intended to protect the decision-making process of government agencies and to encourage frank discussion of legal and policy issues. The scope of the privilege covers documents reflecting advisory opinions, recommendations, and deliberations comprising part of a process by which government decisions and policies are formulated. To qualify for the deliberative process privilege, a document must be both “pre-decisional” and “deliberative.” Documents are pre-decisional when they precede an agency decision and are prepared in order to assist an agency in arriving at its decision. Documents are deliberative when they comprise part of the process by which government decisions are made. The types of records/information NASA withheld under this exemption consists of draft documents, portions of emails containing analyses, recommendations and/or opinions expressed by (an) employee(s). NASA considered the foreseeable harm that would result from the release of this information and determined that its release would hinder the decision-making process, create a chilling effect on internal deliberations, lead to uninformed decision-making, and public confusion.

### **Exemption 6, 5 U.S.C. § 552(b)(6)**

Exemption 6 allows withholding of “personnel and medical files and *similar files* the disclosure of which would constitute a clearly unwarranted invasion of personal privacy.” 5 U.S.C. § 552(b)(6)(emphasis added). NASA invokes exemption 6 to protect telephone numbers, work cell phone numbers, e-mail addresses, and other third party information.

### **Exemption 7(C), 5 U.S.C. § 552(b)(7)(C)**

Exemption 7(C) protects from public disclosure “records or information compiled for law enforcement purposes...[if disclosure] could reasonably be expected to cause an unwarranted invasion of personal privacy.” 5 U.S.C. § 552(b)(7)(C). NASA invokes exemption 7(C) to protect email addresses and other third party information.

### **Referral**

Additionally, we referred 247 pages to Department of Navy. Department of Navy will process those pages under the FOIA and respond to you directly. Should you wish to contact that entity, their information is available at the following website:

[https://www.cnic.navy.mil/foia/foia\\_request.html](https://www.cnic.navy.mil/foia/foia_request.html)

### **Fees**

Provisions of the FOIA allow us to recover part of the cost of complying with your request. In this instance, because the cost is below the \$50 minimum, there is no charge.

### **Appeal**

You have the right to appeal my action regarding your request. Your appeal must be received within 90 days of the date of this response. Please send your appeal to:

Administrator  
NASA Headquarters  
Executive Secretariat  
ATTN: FOIA Appeals  
MS 9R17  
300 E Street S.W.  
Washington, DC 20546

Both the envelope and letter of appeal should be clearly marked, "Appeal under the Freedom of Information Act." You must also include a copy of your initial request, the adverse determination, and any other correspondence with the FOIA office. In order to expedite the appellate process and ensure full consideration of your appeal, your appeal should contain a brief statement of the reasons you believe this initial determination should be reversed. Additional information on submitting an appeal is set forth in the NASA FOIA regulations at 14 C.F.R. § 1206.700.

### **Assistance and Dispute Resolution Services**

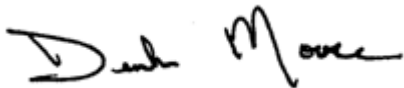
If you have any questions, please feel free to contact me at [derek.m.moore@nasa.gov](mailto:derek.m.moore@nasa.gov) or (202) 358-2681. For further assistance and to discuss any aspect of your request you may also contact:

Stephanie Fox  
Chief FOIA Public Liaison  
Freedom of Information Act Office  
NASA Headquarters  
300 E Street, S.W., 5P32  
Washington D.C. 20546  
Phone: 202-358-1553  
Email: [Stephanie.K.Fox@nasa.gov](mailto:Stephanie.K.Fox@nasa.gov)

Additionally, you may contact the Office of Government Information Services (OGIS) at the National Archives and Records Administration to inquire about the FOIA mediation services it offers. The contact information for OGIS is as follows: Office of Government Information Services, National Archives and Records Administration, 8601 Adelphi Road-OGIS, College Park, Maryland 20740-6001, e-mail at [ogis@nara.gov](mailto:ogis@nara.gov); telephone at 202-741-5770; toll free at 1-877-684-6448; or facsimile at 202-741-5769.

**Important:** Please note that contacting any agency official including myself, NASA's Chief FOIA Public Liaison, and/or OGIS is not an alternative to filing an administrative appeal and does not stop the 90 day appeal clock.


Sincerely,

A handwritten signature in black ink that reads "Derek Moore". The signature is written in a cursive, slightly slanted style.

Derek Moore  
Government Information Specialist

This document is made available through the declassification efforts  
and research of John Greenewald, Jr., creator of:

# The Black Vault



The Black Vault is the largest online Freedom of Information Act (FOIA)  
document clearinghouse in the world. The research efforts here are  
responsible for the declassification of hundreds of thousands of pages  
released by the U.S. Government & Military.

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[EXTERNAL] FW: [Non-DoD Source] UAP taskforce NASA partners

Referred to Department of Navy

[EXTERNAL] FW\_ [Non-DoD Source]  
UAP taskforce NASA partners

# Referred to Department of Navy

From: Cruz, Randy C. (HQ-AA000)[Affiliate] <randy.c.cruz@nasa.gov>

Date: Tuesday, Jun 08, 2021, 12:20 PM

To: Stratton, John F (Jay) SES USN ONI WASHINGTON DC (USA) <(b) (6)>

Subject: [Non-DoD Source] UAP taskforce NASA partners

Hello Sir,

I came across a classified UAP TF brief that had your name on it, dated August 2020. NASA is named as a partner, but we're having difficulty identifying who exactly from NASA was working on this with your team. Any help you can provide is much appreciated; it will allow the NASA Administrator to have a better informed idea of who and how much contribution NASA has provided in this effort.

I can be reached (b) (7)(C), (b) (6)

We don't have many terminals, so if you send me any emails, I kindly request a NIPR heads up.

V/r,

Randy

Randy Cruz

Senior Advisor to the Administrator

NASA Headquarters

Office: (202) 358-1445

Cell: (b) (6)



Referred to Department of Navy

Referred to Department of Navy



## **[EXTERNAL] NASA Morning Briefing for Friday, April 30, 2021**

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From: Bulletin Intelligence <nasa@BulletinIntelligence.com>  
To: nasa@BulletinIntelligence.com  
Sent: April 30, 2021 6:57:35 AM EDT  
Received: April 30, 2021 6:57:49 AM EDT

Click to access

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<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021043002nasa&r=email-3b36&l=001-cc1&t=c&data=04|01|randy.c.cruz@nasa.gov|d5d1beb8921f4c67898108d90bc6ca4b|7005d45845be48ae8140d43da96dd17b|0|0|637553770699708462|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTil6Ik1hYWwiLCJXVCi6Mn0=|1000&sdata=vn3v7BTcHxTt+LWuefYMHwLb3aCZZ8NEYqWZ9r+B11M=&reserved=0>>

Friday, April 30, 2021 7:00 AM EDT

Editor's Note

To subscribe or unsubscribe, please visit: <http://nasa.bulletinintelligence.com/subscribe>  
<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021043002nasa&r=email-3b36&l=002-79f&t=c&data=04|01|randy.c.cruz@nasa.gov|d5d1beb8921f4c67898108d90bc6ca4b|7005d45845be48ae8140d43da96dd17b|0|0|637553770699708462|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTil6Ik1hYWwiLCJXVCi6Mn0=|1000&sdata=jtMT08Nwc8Lh4+7XT3ZG+obt9Ct+F1+ZfwCQKXBazhQ=&reserved=0>>. A NASA email address is required.

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## Top Stories

### Astronauts Describe "Pure Acceleration" Of SpaceX Crew Dragon Launch To Space Station

#### CBS News

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021043002nasa&r=email-3b36&l=003-024&t=c&data=04|01|randy.c.cruz@nasa.gov|d5d11beb8921f4c67898108d90bc6ca4b|7005d45845be48ae8140d43da96dd17b|0|0|637553770699708462|Unknown|TWfPbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQljojV2luMzliLCJBTiI6lk1haWwiLCJXVCi6Mn0=|1000&sdata=4BokL+EmXpf5lZ/iZDcgjFciFt8DQG6/F6VU0e7T9P0=&reserved=0>> (4/29, Harwood) "When the countdown hit zero last Friday and the engines powering a previously flown Falcon 9 first stage roared to life for takeoff, the four astronauts strapped into a SpaceX Crew Dragon some 21 stories up started laughing. 'So we're sitting on the launch pad, obviously, and when the engines lit, we all started laughing because it just felt so awesome and powerful,' Shane Kimbrough, commander of the Crew-2 ferry flight to the International Space Station, said in an interview Thursday with CBS News."

## Bezos-backed Space Tourism Rocket To Start Selling Tickets

The Hill

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021043002nasa&r=email-3b36&l=004-ede&t=c&data=04|01|randy.c.cruz@nasa.gov|d5d1beb8921f4c67898108d90bc6ca4b|7005d45845be48ae8140d43da96dd17b|0|0|637553770699718421|Unknown|TWFpbGZsb3d8eyJWljoimc4wLjAwMDAiLCJQljoiv2luMzliLCJBTil6lk1haWwiLCJXVCi6Mn0=|1000&sdata=eXQB+6Wu7jobbANKWEnrOKMgHIPiRMJpxmeaPmVOQRc=&reserved=0>> (4/29, Oshin) “Blue Origin, the space tourism venture backed by Jeff Bezos, will soon begin selling tickets for its rocket, the company announced Thursday. Those who want a seat on the rocket, called New Shepard, can sign up for information on Blue Origin’s website. The company said in a tweet that details on how to buy tickets will be released May 5.”

## China Launches Core Of Its First Permanent Space Station

The Hill

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021043002nasa&r=email-3b36&l=005-3c4&t=c&data=04|01|randy.c.cruz@nasa.gov|d5d1beb8921f4c67898108d90bc6ca4b|7005d45845be48ae8140d43da96dd17b|0|0|637553770699718421|Unknown|TWFpbGZsb3d8eyJWljoimc4wLjAwMDAiLCJQljoiv2luMzliLCJBTil6lk1haWwiLCJXVCi6Mn0=|1000&sdata=fKwdeBAe64Z+NZLDeB+a2EkMuFPSCyeZ1xjxl/AV6mc=&reserved=0>> (4/29, Srikanth) “Tianhe, or Harmony of Heavens, is headed into space after China launched the first of 11 missions to build Tiangong, or Heavenly Palace, the nation’s first permanent space station for astronauts. China’s National Space Administration announced the successful launch of the core module of its station, “the biggest and heaviest spacecraft China has ever constructed,’ about 400 kilometers (or nearly 250 miles) above the Earth in a low orbit.”

## Mars Helicopter Ingenuity Misses Takeoff For 4th Flight On Red Planet

SPACE

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021043002nasa&r=email-3b36&l=006-f5c&t=c&data=04|01|randy.c.cruz@nasa.gov|d5d1beb8921f4c67898108d90bc6ca4b|7005d45845be48ae8140d43da96dd17b|0|0|637553770699728396|Unknown|TWFpbGZsb3d8eyJWljoimc4wLjAwMDAiLCJQljoiv2luMzliLCJBTil6lk1haWwiLCJXVCi6Mn0=|1000&sdata=ocVPX0shZuCCQcP7FVN1jPnL7jm+ggrXWbcu2+G1znhk=&reserved=0>> (4/29, Wall) “NASA’s Mars helicopter Ingenuity was supposed to get a real workout this morning (April 29), but things didn’t go as planned. The 4-lb. (1.8 kilograms) chopper was scheduled to lift off from the floor of Mars’ Jezero Crater today around 10:12 a.m. EDT (1412 GMT), kicking off its fourth flight on the Red Planet. That didn’t happen.”

## Core Of NASA’s First Artemis Moon Rocket Towed Into Vehicle Assembly Building

Spaceflight Now

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021043002nasa&r=email-3b36&l=007-5fb&t=c&data=04|01|randy.c.cruz@nasa.gov|d5d1beb8921f4c67898108d90bc6ca4b|7005d45845be48ae8140d43da96dd17b|0|0|637553770699728396|Unknown|TWFpbGZsb3d8eyJWljoimc4wLjAwMDAiLCJQljoiv2luMzliLCJBTil6lk1haWwiLCJXVCi6Mn0=|1000&sdata=FRCYcu0UFkzTPRrfErcPj4YczRmj6+iqV9wRSjkeDIU=&reserved=0>> (4/29, Clark) “A decade in the making, the core stage for NASA’s first Space Launch System heavy-lift rocket rolled into the Vehicle Assembly Building at the Kennedy Space Center Thursday to join up with twin solid rocket boosters and an Orion capsule for an uncrewed test flight around the moon. Clad in orange foam thermal insulation, the 212-foot-long (64.6-meter) rocket rolled off NASA’s Pegasus barge Thursday morning on a transport cradle driven by a self-propelled mechanism that carefully drove the core stage the nearly half-mile distance from the Turn Basin to the south door of



the VAB.”

## Op-Ed | Sen. Nelson Is Strong Choice To Advance 21st Century Space Priorities

### Space News

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021043002nasa&r=email-3b36&l=008-eb7&t=c&data=04|01|randy.c.cruz@nasa.gov|d5d1beb8921f4c67898108d90bc6ca4b|7005d45845be48ae8140d43da96dd17b|0|0|637553770699738331|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikh1aWwiLCJXVCi6Mn0=|1000&sdata=SQjN4gRIsjGVRQAsfbgPBSRbe27hyi55N4OQOzSCCI8=&reserved=0>> (4/29, Lobiondo) “When looking to strategically position the United States. as the dominant force in space for the 21st century, it made perfect sense to select a nominee to lead NASA who literally served our nation in space. Former Sen. Bill Nelson, who flew on the space shuttle in 1986 while a member of the House of Representatives, is a pragmatic yet inspired selection. He intimately knows the agency, its mission, its workforce, and its reputation in Congress. So why is there pushback rather than praise?”

### Flight

No content.

### Earth

## Astronauts Describe “Pure Acceleration” Of SpaceX Crew Dragon Launch To Space Station

### CBS News

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021043002nasa&r=email-3b36&l=009-669&t=c&data=04|01|randy.c.cruz@nasa.gov|d5d1beb8921f4c67898108d90bc6ca4b|7005d45845be48ae8140d43da96dd17b|0|0|637553770699738331|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikh1aWwiLCJXVCi6Mn0=|1000&sdata=hfaUEysKf9ldUn6VFV4n0zanS5UuKzc/97IAplcv2g8=&reserved=0>> (4/29, Harwood) “When the countdown hit zero last Friday and the engines powering a previously flown Falcon 9 first stage roared to life for takeoff, the four astronauts strapped into a SpaceX Crew Dragon some 21 stories up started laughing. ‘So we’re sitting on the launch pad, obviously, and when the engines lit, we all started laughing because it just felt so awesome and powerful,’ Shane Kimbrough, commander of the Crew-2 ferry flight to the International Space Station, said in an interview Thursday with CBS News.”

## Glaciers Are Melting Much Faster Than Expected, Study Finds

### CNN

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021043002nasa&r=email-3b36&l=00a-acd&t=c&data=04|01|randy.c.cruz@nasa.gov|d5d1beb8921f4c67898108d90bc6ca4b|7005d45845be48ae8140d43da96dd17b|0|0|637553770699738331|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikh1aWwiLCJXVCi6Mn0=|1000&sdata=xgAVbSCC2Ti4KrVN4QEn4FYvOoKam155RUCwl5MyjL4=&reserved=0>> (4/29) “A new study indicates that the speed of glacier melt has ‘doubled over the past two decades’ – far faster than anticipated or previously measured. In the study, published in the journal Nature, the authors utilized multiple NASA satellite datasets dating back to 2000.”

### Humans in Space

## Blue Origin Will Start Selling Seats On Its New Shepard Spacecraft Next Week

## SPACE

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021043002nasa&r=email-3b36&l=00b-978&t=c&data=04|01|randy.c.cruz@nasa.gov|d5d1beb8921f4c67898108d90bc6ca4b|7005d45845be48ae8140d43da96dd17b|0|0|637553770699748287|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikh1aWwiLCJXVCi6Mn0=|1000&sdata=XtU+YN3udnkMtsN7zQRdUIUKOanNxFjKuknBtzgdQLo=&reserved=0>> (4/29, Wall) “Blue Origin is about to start selling seats on its New Shepard suborbital spacecraft. ... Blue Origin didn’t just pluck May 5 out of the air. It’s the 60th anniversary of the first crewed American spaceflight, which sent NASA astronaut Alan Shepard — after whom New Shepard is named — on a 15-minute suborbital jaunt.”

### Bezos-backed Space Tourism Rocket To Start Selling Tickets

#### The Hill

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021043002nasa&r=email-3b36&l=00c-f47&t=c&data=04|01|randy.c.cruz@nasa.gov|d5d1beb8921f4c67898108d90bc6ca4b|7005d45845be48ae8140d43da96dd17b|0|0|637553770699748287|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikh1aWwiLCJXVCi6Mn0=|1000&sdata=xw0rhXJYSCSXC/anX+Lv/6qrHmw40pvOEGR360Y+LQY=&reserved=0>> (4/29, Oshin) “Blue Origin, the space tourism venture backed by Jeff Bezos, will soon begin selling tickets for its rocket, the company announced Thursday. Those who want a seat on the rocket, called New Shepard, can sign up for information on Blue Origin’s website. The company said in a tweet that details on how to buy tickets will be released May 5.”

### Jeff Bezos Is Selling Tickets To Board A Rocket Ship Into Space

#### CBS News

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021043002nasa&r=email-3b36&l=00d-8dd&t=c&data=04|01|randy.c.cruz@nasa.gov|d5d1beb8921f4c67898108d90bc6ca4b|7005d45845be48ae8140d43da96dd17b|0|0|637553770699758265|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikh1aWwiLCJXVCi6Mn0=|1000&sdata=9ngFJZ1HnLloRMZvwuV36Ovm0iuos/18r4n/Kuack+4=&reserved=0>> (4/29, Brooks) “Blue Origins, the aerospace company backed by Jeff Bezos, will begin selling tickets to board its New Shepard rocket ship into the cosmos. The company hasn’t revealed how much tickets will cost, but said more details will land May 5. The spacecraft itself, known as New Shepard, is a 60-foot suborbital rocket-capsule that travels at Mach 3 and is designed to fit six people inside. A video posted on Twitter on Thursday shows New Shepard landing safely back on Earth after a recent flight.”

### Jeff Bezos’ Blue Origin To Begin Selling Seats On New Shepard

#### Fox Business

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021043002nasa&r=email-3b36&l=00e-561&t=c&data=04|01|randy.c.cruz@nasa.gov|d5d1beb8921f4c67898108d90bc6ca4b|7005d45845be48ae8140d43da96dd17b|0|0|637553770699758265|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikh1aWwiLCJXVCi6Mn0=|1000&sdata=oukOlhFhqmvk1W5OwCBZTH/ePE/NoIIMQnFHN5R0qs=&reserved=0>> (4/29, Musto) “Blue Origin announced Thursday that it would soon begin to sell tickets for a chance to ride on the reusable suborbital rocket New Shepard. In a 49-second video posted to the company’s social media, founder Jeff Bezos appears in a cowboy hat at the Texas site of Blue Origin’s successful April NS-15 rehearsal flight.”

### Jeff Bezos’ Blue Origin About To Reveal When It’s Selling Tickets To Space

## CNET News

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021043002nasa&r=email-3b36&l=00f-b99&t=c&data=04|01|randy.c.cruz@nasa.gov|d5d1beb8921f4c67898108d90bc6ca4b|7005d45845be48ae8140d43da96dd17b|0|0|637553770699758265|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTil6Ik1hYWwiLCJXVCi6Mn0=|1000&sdata=zd39vsbD6tKY01VG0GoZ14x3hbnhoCyNTPTeRQjwFUg=&reserved=0>> (4/29, Priest) "Blue Origin, the rocket startup from Amazon founder Jeff Bezos, will reveal details about how and when to purchase tickets to ride its New Shepard rocket into space next Tuesday, May 5. The space tourism rocket has completed a series of test flights and landings, recently completing a test with people inside during launch preparation and a dummy inside during the flight itself."

## Jeff Bezos' Company Blue Origin Will Soon Begin Selling Tickets For Rides On Its Space-tourism Rocket

### Insider

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021043002nasa&r=email-3b36&l=010-f23&t=c&data=04|01|randy.c.cruz@nasa.gov|d5d1beb8921f4c67898108d90bc6ca4b|7005d45845be48ae8140d43da96dd17b|0|0|637553770699768225|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTil6Ik1hYWwiLCJXVCi6Mn0=|1000&sdata=bupv1YKgtffbogS/uJZOzmc6uhuo3D/wdfsIMcJ9FJA=&reserved=0>> (4/29) "Blue Origin released a video announcing its plans to start selling rides on its New Shepard rocket. The company said it plans to release more details on the space tours on May 5. Tickets are expected to be competitive with Virgin Galactic's space tours at around \$250,000."

## You Can Now Buy A Seat On A Blue Origin Rocket

### CNN Business

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021043002nasa&r=email-3b36&l=011-d27&t=c&data=04|01|randy.c.cruz@nasa.gov|d5d1beb8921f4c67898108d90bc6ca4b|7005d45845be48ae8140d43da96dd17b|0|0|637553770699768225|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTil6Ik1hYWwiLCJXVCi6Mn0=|1000&sdata=xRMRvhXUGFBF1jbD5hlmWUwgOZSFz3k21eU0hGh1iEk=&reserved=0>> (4/29, Valinsky) "Blue Origin, the Jeff Bezos-backed space tourism venture, will soon begin selling tickets for its rocket. The company made the announcement in a nearly minute-long video featuring Bezos himself. It points people to Blue Origin's website, which features a sign-up page for more information scheduled to be released May 5. Neither price nor dates were released Thursday."

## Blue Origin Is Preparing To Sell Tickets For Its First Crewed Flight From West Texas

### Houston Chronicle

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021043002nasa&r=email-3b36&l=012-20c&t=c&data=04|01|randy.c.cruz@nasa.gov|d5d1beb8921f4c67898108d90bc6ca4b|7005d45845be48ae8140d43da96dd17b|0|0|637553770699778177|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTil6Ik1hYWwiLCJXVCi6Mn0=|1000&sdata=O9RffPcnwermyOlR1RdxBG0/9/aUw+tZKfPIXTFtZmY=&reserved=0>> (4/29, Leinfelder) "Blue Origin is ready to fly people from West Texas. The company announced Thursday that it's preparing to sell tickets for its first crewed suborbital flight. Interested passengers can sign up at blueorigin.com, and additional details will be released on May 5."

## Jeff Bezos' Blue Origin Will Soon Begin Selling Tickets For Rides On Its Space Tourism Rocket

### CNBC

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021043002nasa&r=email-3b36&l=013-b4a&t=c&data=04|01|randy.c.cruz@nasa.gov|d5d1beb8921f4c67898108d90bc6ca4b|7005d45845be48ae8140d43da96dd17b|0|0|637553770699778177|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikh1hWwiLCJXVCi6Mn0=|1000&sdata=xpnfpOyvJN9nw5yXrzpLAh9YxylkPTY+o8wMGKIsbJQ=&reserved=0>> (4/29, Sheetz) “Jeff Bezos’ space venture Blue Origin said in a video released Thursday it will soon begin selling tickets for rides on its space tourism rocket called New Shepard. ‘Guys, how exciting is this – come on!’ Bezos said in the video. Blue Origin did not reveal how much tickets will cost, only saying that more details will come on May 5 to those who submit their name and email on a form on the company’s website.”

#### NASA Astronaut Collins Remembered For ‘Carrying The Fire’

Voice of America

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021043002nasa&r=email-3b36&l=014-864&t=c&data=04|01|randy.c.cruz@nasa.gov|d5d1beb8921f4c67898108d90bc6ca4b|7005d45845be48ae8140d43da96dd17b|0|0|637553770699778177|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikh1hWwiLCJXVCi6Mn0=|1000&sdata=rU6hGO2LSYvKQ17+nGChcmheOwFa3n1L5WrdqLGWxO0=&reserved=0>> (4/29) “NASA Astronaut Michael Collins, who made history as part of the 1969 Apollo 11 crew to first land a person on the moon, has died at age 90. In interviews with VOA’s Kane Farabaugh, Collins reflected on the importance of the mission and the contributions of the astronauts of his era, while keeping a focus on the future of crewed spaceflight and exploration.”

#### How The Human Eye Changes After 1 Year In Space

CNN

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021043002nasa&r=email-3b36&l=015-4f5&t=c&data=04|01|randy.c.cruz@nasa.gov|d5d1beb8921f4c67898108d90bc6ca4b|7005d45845be48ae8140d43da96dd17b|0|0|637553770699778113|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikh1hWwiLCJXVCi6Mn0=|1000&sdata=HMgiDFwFxF78ZwoNcC+S1hG95Tk4bSJJpMhtlx9iF0SM=&reserved=0>> (4/29, Strickland) “When humans finally have the chance to explore Mars, the members of those crewed missions will be millions of miles from home with delayed communications. Before they go, scientists want to understand as much as possible about the potential effects of microgravity and radiation on the human body. A big step toward this goal was the One-Year Mission, when NASA astronaut Scott Kelly and Russian cosmonaut Mikhail Kornienko spent 340 days on the International Space Station from March 2015 to March 2016.”

#### China’s Space Station Is A Step Closer To Reality With Launch Of Core Module

Gizmodo

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021043002nasa&r=email-3b36&l=016-84d&t=c&data=04|01|randy.c.cruz@nasa.gov|d5d1beb8921f4c67898108d90bc6ca4b|7005d45845be48ae8140d43da96dd17b|0|0|637553770699778113|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikh1hWwiLCJXVCi6Mn0=|1000&sdata=kDrXfOCu6jKt/cnRLe3UI8fnh2cE9Glp5AQqUYllsdlk=&reserved=0>> (4/29, Schultz) “China today launched the main module of its new space station into low Earth orbit. The ambitious project is set to be China’s answer to the International Space Station, which has never included China in its membership. The 55-foot core module is called Tianhe, or Harmony of the Heavens. It blasted off from the Wenchang Launch Center in Hainan in the wee hours of Thursday morning, late Wednesday night for the United States. It launched aboard a 190-foot-tall Long March-5b Rocket, which has been the flagship launcher of the program since 2016. This is the first of 11 launches planned to see the finished product of the Chinese Space Station in operation by late 2022.”

## China Launches Core Of Its First Permanent Space Station

The Hill

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021043002nasa&r=email-3b36&l=017-a98&t=c&data=04|01|randy.c.cruz@nasa.gov|d5d1beb8921f4c67898108d90bc6ca4b|7005d45845be48ae8140d43da96dd17b|0|0|637553770699798069|Unknown|TWFpbGZsb3d8eyJWljoic4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikh1aWwiLCJXVCi6Mn0=|1000&sdata=0Z4Pa0m+1AHHmSsOVKnMnThUtN8nZwIMJsiZTGK3dA=&reserved=0>> (4/29, Srikanth) “Tianhe, or Harmony of Heavens, is headed into space after China launched the first of 11 missions to build Tiangong, or Heavenly Palace, the nation’s first permanent space station for astronauts. China’s National Space Administration announced the successful launch of the core module of its station, ‘the biggest and heaviest spacecraft China has ever constructed,’ about 400 kilometers (or nearly 250 miles) above the Earth in a low orbit.”

## China Advances Space Station Ambition With Module Launch

Wall Street Journal

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021043002nasa&r=email-3b36&l=018-acd&t=c&data=04|01|randy.c.cruz@nasa.gov|d5d1beb8921f4c67898108d90bc6ca4b|7005d45845be48ae8140d43da96dd17b|0|0|637553770699798069|Unknown|TWFpbGZsb3d8eyJWljoic4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikh1aWwiLCJXVCi6Mn0=|1000&sdata=CWrK7lJVsbY/+kc3kuVw55gHF8RyL+9Cx+9qCiG/mOs=&reserved=0>> (4/29, Khan) “China sent a core component of its new space station into orbit, marking a key milestone in the country’s ambitions to establish a permanent presence in space.”

## As SpaceX Helps The ISS Get Crowded, NASA Has A Fix For Sleepy Astronauts

SlashGear

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021043002nasa&r=email-3b36&l=019-336&t=c&data=04|01|randy.c.cruz@nasa.gov|d5d1beb8921f4c67898108d90bc6ca4b|7005d45845be48ae8140d43da96dd17b|0|0|637553770699798069|Unknown|TWFpbGZsb3d8eyJWljoic4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikh1aWwiLCJXVCi6Mn0=|1000&sdata=d2DXk7JnC0W3Twh+Ry3HVcMk80E58eCWqeryp4CGEaM=&reserved=0>> (4/29, Davies) “The International Space Station is getting so crowded, NASA astronauts are setting up a whole new design of temporary bed, and it looks likely to need the new system a lot more over the next few years. The Crew Alternate Sleep Accommodation, or CASA, arrived on the ISS earlier this month, with the recent SpaceX Crew-2 mission demonstrating just why it was needed.”

## Russian Cosmonauts May Not Fly On SpaceX’s Crew Dragon Until 2022

SPACE

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021043002nasa&r=email-3b36&l=01a-3ab&t=c&data=04|01|randy.c.cruz@nasa.gov|d5d1beb8921f4c67898108d90bc6ca4b|7005d45845be48ae8140d43da96dd17b|0|0|637553770699808047|Unknown|TWFpbGZsb3d8eyJWljoic4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikh1aWwiLCJXVCi6Mn0=|1000&sdata=9sR5cGmY0WAnYvp7nSnKktCBibk5c/y15Z1VMUCf0s=&reserved=0>> (4/29, Bartels) “With three crewed launches under its belt, SpaceX has now flown astronauts representing not only NASA, but also the European and Japanese space agencies. But there’s a glaring absence: Russia. Despite months of ongoing negotiations, NASA and its Russian counterpart, Roscosmos, have yet to agree on a system for exchanging seats on rides to the International Space Station. Under such a scheme, NASA astronauts would continue to fly on Russian Soyuz vehicles and Russian cosmonauts would step aboard U.S. commercial vehicles like SpaceX’s Crew

Dragon. It's a system NASA has loudly endorsed while waiting for the first commercial vehicles to reach the launch pad, and it isn't clear whether there are any substantive disagreements slowing the negotiations."

#### SpaceX Crew-1 Astronauts To Return To Earth From ISS

UPI

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#### Astronaut Michael Collins Dies At 90

KIAH-TV Houston

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021043002nasa&r=email-3b36&l=01c-7fd&t=c&data=04|01|randy.c.cruz@nasa.gov|d5d1beb8921f4c67898108d90bc6ca4b|7005d45845be48ae8140d43da96dd17b|0|0|637553770699818001|Unknown|TWfPbGZsb3d8eyJWljoimc4wLjAwMDAiLCJQljoiv2luMzliLCJBTil6lk1haWwiLCJXVCI6Mn0=|1000&sdata=8TMpFpm3vGJECZ9QRsO20ZBN8pRLfJJHnuwpTYwKNb0=&reserved=0>> (4/29) "All right now some sad news to report when it comes to NASA. NASA saying goodbye to one of its own, Apollo 11 astronaut Michael Collins."

#### Moon to Mars

#### Mars Helicopter Ingenuity Misses Takeoff For 4th Flight On Red Planet

SPACE

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021043002nasa&r=email-3b36&l=01d-314&t=c&data=04|01|randy.c.cruz@nasa.gov|d5d1beb8921f4c67898108d90bc6ca4b|7005d45845be48ae8140d43da96dd17b|0|0|637553770699818001|Unknown|TWfPbGZsb3d8eyJWljoimc4wLjAwMDAiLCJQljoiv2luMzliLCJBTil6lk1haWwiLCJXVCI6Mn0=|1000&sdata=xRkAaZ4z1/hfqElw0TdeF1Wv+ty1uIT7ggUgiHdwUnA=&reserved=0>> (4/29, Wall) "NASA's Mars helicopter Ingenuity was supposed to get a real workout this morning (April 29), but things didn't go as planned. The 4-lb. (1.8 kilograms) chopper was scheduled to lift off from the floor of Mars' Jezero Crater today around 10:12 a.m. EDT (1412 GMT), kicking off its fourth flight on the Red Planet. That didn't happen."

#### Ingenuity Mars Helicopter Captures Perseverance Rover In Unprecedented Aerial Shot

Fox News

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021043002nasa&r=email-3b36&l=01e-8ef&t=c&data=04|01|randy.c.cruz@nasa.gov|d5d1beb8921f4c67898108d90bc6ca4b|7005d45845be48ae8140d43da96dd17b|0|0|637553770699818001|Unknown|TWfPbGZsb3d8eyJWljoimc4wLjAwMDAiLCJQljoiv2luMzliLCJBTil6lk1haWwiLCJXVCI6Mn0=|1000&sdata=zxmGkVfB6H400/rPvJCCkxS5JTZI/e7OaTCdsATW3F8=&reserved=0>> (4/29, Musto) "NASA's Ingenuity Mars helicopter captured a stunning aerial shot of the red planet and Perseverance Mars rover on its third flight on Sunday. The agency's Southern California-based Jet Propulsion Laboratory (JPL) wrote in a description of the image that the helicopter had been flying at an altitude of 16 feet and was around 279 feet away

from the rover at the time it was taken.”

## NASA Mars Helicopter ‘Ingenuity’ Fails To Take Flight During Fourth Run, Rescheduled To Friday

Fox News

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021043002nasa&r=email-3b36&l=01f-5bb&t=c&data=04|01|randy.c.cruz@nasa.gov|d5d1beb8921f4c67898108d90bc6ca4b|7005d45845be48ae8140d43da96dd17b|0|0|637553770699827960|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikh1aWwiLCJXVCi6Mn0=|1000&sdata=5dTDDeRFgyx5+bEBJvoQiZE/pC9yWS964bAGvm98AA58=&reserved=0>> (4/29, Best) “NASA’s helicopter on Mars, the four-pound ‘Ingenuity,’ failed to get off the ground for its fourth flight Thursday, but NASA said it is safe and will try again Friday. Previous test flights for the helicopter went well, with Ingenuity rising up 16 feet in the air during the third flight last Sunday then flashing downrange about 50 yards at a speed of 6.6 feet per second.”

## 4th Flight Fizzles For NASA’s Mars Helicopter, Retry Friday

AP

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## NASA’s Ingenuity Helicopter Fails To Take Off On Fourth Flight Attempt

Houston Chronicle

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021043002nasa&r=email-3b36&l=021-966&t=c&data=04|01|randy.c.cruz@nasa.gov|d5d1beb8921f4c67898108d90bc6ca4b|7005d45845be48ae8140d43da96dd17b|0|0|637553770699837918|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikh1aWwiLCJXVCi6Mn0=|1000&sdata=YI08ogu0HGIDxe1hs4mnxHGjfbPU1DJKuhlsd3y7ZbM=&reserved=0>> (4/29, Leinfelder) “The planned fourth flight of NASA’s Ingenuity helicopter was not as bold as engineers had hoped. It didn’t leave the ground. The 4-pound Ingenuity helicopter had already taken three flights on Mars. Its third flight climbed 16 feet above the Martian surface, flew downrange 164 feet and then returned to land in Wright Brothers Field. The helicopter was airborne for 80 seconds and flew 4.5 mph.”

## NASA’s Ingenuity Helicopter Just Failed To Lift Off From The Martian Surface, But It Will Try Again On Friday

Insider

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021043002nasa&r=email-3b36&l=022-7ca&t=c&data=04|01|randy.c.cruz@nasa.gov|d5d1beb8921f4c67898108d90bc6ca4b|7005d45845be48ae8140d43da96dd17b|0|0|637553770699837918|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikh1aWwiLCJXVCi6Mn0=|1000&sdata=fggxIgtqiSAccZflg0D+wx8EBofPXztTVnmceSXdWa0=&reserved=0>> (4/29, McFall-Johnsen) “NASA’s Ingenuity Mars helicopter was scheduled to embark on its most daring flight yet on Thursday. But it failed to lift off, so NASA plans to try again on Friday. Ingenuity made history when it flew for the first time on April 19

— a 10-foot hover that marked the first controlled, powered flight ever conducted on another planet. Since then, the 4-pound drone has completed two more flights, venturing farther and flying faster each time.”

#### Mars Helicopter Will Get Another Chance At Daring Fourth Flight Friday

CNN

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#### NASA: Mars Helicopter Ingenuity Is ‘Safe And Healthy’ Despite Failed Fourth Flight

Forbes

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#### NASA Mars Helicopter Fourth Flight Fails To Get Off The Ground

CNET News

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#### Ingenuity Mars Helicopter Fails To Take Off On Fourth Test Flight, But Another Try Planned Friday

CBS News

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helicopter is healthy, officials said, and another attempt to get the flight off is planned for Friday.”

#### Now It's Time To See What The Mars Helicopter Can Really Do

BGR

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021043002nasa&r=email-3b36&l=027-377&t=c&data=04|01|randy.c.cruz@nasa.gov|d5d1beb8921f4c67898108d90bc6ca4b|7005d45845be48ae8140d43da96dd17b|0|0|637553770699857827|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikh1hWwiLCJXVCi6Mn0=|1000&sdata=QcGFUN8y2TqZly3v5IguNg5kdnMrKU1cHOFNZCFYv5c=&reserved=0>> (4/29, Wehner) “Sending a helicopter to Mars is something that had never been done before NASA strapped one to the belly of the mighty Perseverance rover and shot it into space. Nobody quite knew what was going to happen. Sure, the scientists and engineers working on the Ingenuity helicopter project had crunched all the numbers and outfitted the aircraft with everything it needed to get the job done once it arrived on Mars, but sometimes it doesn't matter how carefully you plan, especially when it comes to space exploration. When NASA finally fired it up, all the hard work paid off, and after three (soon to be four) successful flights, NASA says the aircraft has exceeded its expectations.”

#### NASA's Mars Helicopter Ingenuity Will Attempt Its Boldest Flight Yet Today

SPACE

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021043002nasa&r=email-3b36&l=028-518&t=c&data=04|01|randy.c.cruz@nasa.gov|d5d1beb8921f4c67898108d90bc6ca4b|7005d45845be48ae8140d43da96dd17b|0|0|637553770699857827|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikh1hWwiLCJXVCi6Mn0=|1000&sdata=vbsUgHyYJKKvQQUZkm+n+yexym4W4sorgHeBzPAJFPU=&reserved=0>> (4/29, Malik) “Update: NASA's Mars helicopter Ingenuity did not take off on Mars as planned today due to a glitch. You can read our full story here. After three successful test flights, NASA's Mars helicopter Ingenuity is ready to push the envelope in the skies of the Red Planet.”

#### Core Of NASA's First Artemis Moon Rocket Towed Into Vehicle Assembly Building

Spaceflight Now

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021043002nasa&r=email-3b36&l=029-44e&t=c&data=04|01|randy.c.cruz@nasa.gov|d5d1beb8921f4c67898108d90bc6ca4b|7005d45845be48ae8140d43da96dd17b|0|0|637553770699867788|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikh1hWwiLCJXVCi6Mn0=|1000&sdata=oTXhpCh1/Fa8QPRbsujS9cWZGIl2wnUbxXI5gOIMpb0=&reserved=0>> (4/29, Clark) “A decade in the making, the core stage for NASA's first Space Launch System heavy-lift rocket rolled into the Vehicle Assembly Building at the Kennedy Space Center Thursday to join up with twin solid rocket boosters and an Orion capsule for an uncrewed test flight around the moon. Clad in orange foam thermal insulation, the 212-foot-long (64.6-meter) rocket rolled off NASA's Pegasus barge Thursday morning on a transport cradle driven by a self-propelled mechanism that carefully drove the core stage the nearly half-mile distance from the Turn Basin to the south door of the VAB.”

#### Saturn-Class Booster Arrives At KSC For Launch

Aviation Week

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aWwiLCJXVCI6Mn0=|1000&sdata=QDpxXnwVYMcU9zJ1gwalwncS/7tS28T2/RfUiDPxb70=&reserved=0> (4/30)  
"With the arrival of the Space Launch System (SLS) core stage at NASA's Kennedy Space Center, the ground is set for a pair of flight tests intended to reopen deep-space human exploration, 50 years after the Apollo Moon landings."

#### Final Piece Of Massive Moon Rocket Arrives At KSC

Florida Today

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021043002nasa&r=email-3b36&l=02b-2a8&t=c&data=04|01|randy.c.cruz@nasa.gov|d5d1beb8921f4c67898108d90bc6ca4b|7005d45845be48ae8140d43da96dd17b|0|0|637553770699877741|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjojV2luMzliLCJBTiI6Ikk1h>> (4/29, Joy)  
"Mike Bolger has been waiting eight years for this day. On Thursday morning he watched the final part of the most powerful rocket in the world arrive at Kennedy Space Center. 'We've now got all the pieces. We've got the boosters, we've got the core stage showing up today. We've already got the second stage here and Orion. So, all the hardware is here. Really the spotlight turns to us and it's our opportunity to put it all together,' he said."

#### NASA Moves Huge SLS Moon Rocket To Prepare For Lunar Mission

UPI

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"NASA moved the giant core stage of the SLS moon rocket into the Vehicle Assembly Building at Kennedy Space Center on Thursday to prepare it for a launch later this year. Teams of workers rolled the 212-foot-tall rocket off of NASA's Pegasus barge on Thursday morning. The barge had shipped the rocket from the space agency's Stennis Space Center testing stand in southern Mississippi."

#### Gazan Behind Mars Drone Says Visiting Home Is No Small Step

AP

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"An electronics engineer from Gaza, Loay Elbasyouni, had worked with the NASA team that made history this month by launching an experimental helicopter from the surface of Mars. But he says an expedition to his hometown in the Gaza Strip, where posters celebrate his achievement, feels even farther away because of Israeli and Egyptian restrictions."

#### SLS Core Stage Delivered To KSC

Spectrum News 13 (FL)

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021043002nasa&r=email-3b36&l=02e-e95&t=c&data=04|01|randy.c.cruz@nasa.gov|d5d1beb8921f4c67898108d90bc6ca4b|7005d45845be48ae8140d43da96dd17b|0|0|637553770699887681|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjojV2luMzliLCJBTiI6Ikk1h>> (4/29) "The

nation's space news. Now the final piece of NASA's Space Launch System rocket that will send NASA's Artemis-1 mission to the moon has arrived at the Kennedy Space Center."

### Scientists Are Pretending Hawaii Is Mars

BGR

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021043002nasa&r=email-3b36&l=02f-0b3&t=c&data=04|01|randy.c.cruz@nasa.gov|d5d1beb8921f4c67898108d90bc6ca4b|7005d45845be48ae8140d43da96dd17b|0|0|637553770699887681|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikh1aWwiLCJXVCi6Mn0=|1000&sdata=MOJAdC3QwD96DEhQbkh/eUw+SwqLbDWAKN52hvcnQvo=&reserved=0>> (4/30, Wehner) "Humans have never traveled to another planet. We've visited Earth's moon but despite sending rovers, orbiters, and probes to places like Mars, Jupiter, Saturn, and Venus, we've never even sent humans to orbit another planet, much less land and see the sights. Mars is definitely the best candidate for human exploration, and space agencies like NASA are already laying the groundwork for those future missions. One of the ways scientists are preparing for crewed missions to Mars is by testing what it might be like to explore the planet's most interesting features while wearing protective gear."

### Solar System and Beyond

An Asteroid Traveled For 23 Million Years Before Crashing Into Earth — And Now Scientists Know Where It Came From

CBS News

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021043002nasa&r=email-3b36&l=030-671&t=c&data=04|01|randy.c.cruz@nasa.gov|d5d1beb8921f4c67898108d90bc6ca4b|7005d45845be48ae8140d43da96dd17b|0|0|637553770699897631|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikh1aWwiLCJXVCi6Mn0=|1000&sdata=kwa0ZNF8P+etYpcZnV85M2YT59eqgIN88brSif3Hj8=&reserved=0>> (4/29, Lewis) "A small asteroid crashed into Earth three years ago — and now scientists know where it came from. Researchers have traced the origins of the resulting rare meteorite fragments, which began the journey to Earth some 23 million years ago. The asteroid, called 2018 LA, shot across the sky like a fireball before landing in Botswana on June 2, 2018. Researchers subsequently recovered 23 meteorites from the Central Kalahari Game Reserve, a huge area known for its diverse wildlife."

### A 22-Million-Year Journey From The Asteroid Belt To Botswana

New York Times

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021043002nasa&r=email-3b36&l=031-d45&t=c&data=04|01|randy.c.cruz@nasa.gov|d5d1beb8921f4c67898108d90bc6ca4b|7005d45845be48ae8140d43da96dd17b|0|0|637553770699897631|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikh1aWwiLCJXVCi6Mn0=|1000&sdata=rpvy192rIKr7jn319MwaJ+opmZ2flgsSfvzGGMz2qQg=&reserved=0>> (4/29, Andrews) "On the morning of June 2, 2018, an asteroid was seen careening toward us at 38,000 miles per hour. It was going to impact Earth, and there was nothing anyone could do to stop it. Astronomers were beside themselves with excitement. ... Immediately, Botswanan scientists and guides joined with international meteorite experts to hunt for the asteroid's wreckage. As of November 2020, the team has found 24 individual meteorites. And thanks to the telltale geology of these rocky leftovers, observations of their path to Earth and the memories of a dead NASA spacecraft, scientists were able to unspool the history of this asteroid with breathtaking detail."

### NASA Solar Probe Zooms Past Venus And Smashes Two Wild Space Records – Again

## CNET News

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## Space Tech

No content.

## Various

### Bill Nelson Confirmed As New NASA Administrator

#### Florida Today

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021043002nasa&r=email-3b36&l=033-f24&t=c&data=04|01|randy.c.cruz@nasa.gov|d5d1beb8921f4c67898108d90bc6ca4b|7005d45845be48ae8140d43da96dd17b|0|0|637553770699907588|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikh1aWwiLCJXVCi6Mn0=|1000&sdata=n3LGMwwF/J9OQbHhe+ZDsx8mupr7VUE99Tg2MdyZcjQ=&reserved=0>> (4/29, McCarthy) “The Senate unanimously confirmed Bill Nelson to lead NASA late Thursday afternoon. Nelson, who was raised in Brevard County, flew on the space shuttle in 1986 when he was a congressman serving the area. He later represented Florida in the Senate for 18 years.”

### Bill Nelson Confirmed As NASA Administrator

#### Houston Chronicle

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### Op-Ed | Sen. Nelson Is Strong Choice To Advance 21st Century Space Priorities

#### Space News

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021043002nasa&r=email-3b36&l=035-ba1&t=c&data=04|01|randy.c.cruz@nasa.gov|d5d1beb8921f4c67898108d90bc6ca4b|7005d45845be48ae8140d43da96dd17b|0|0|637553770699917566|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikh1aWwiLCJXVCi6Mn0=|1000&sdata=HQcZZmqEZi9x9W6xdIqWnyJ8SzULiOLSUn87mcuv3Y=&reserved=0>> (4/29, Lobiondo) “When looking to strategically position the United States. as the dominant force in space for the 21st

century, it made perfect sense to select a nominee to lead NASA who literally served our nation in space. Former Sen. Bill Nelson, who flew on the space shuttle in 1986 while a member of the House of Representatives, is a pragmatic yet inspired selection. He intimately knows the agency, its mission, its workforce, and its reputation in Congress. So why is there pushback rather than praise?"

#### Senate Confirms Ex-Sen. Nelson To NASA

The Hill

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021043002nasa&r=email-3b36&l=036-229&t=c&data=04|01|randy.c.cruz@nasa.gov|d5d1beb8921f4c67898108d90bc6ca4b|7005d45845be48ae8140d43da96dd17b|0|0|637553770699917566|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ik1hYWwiLCJXVCi6Mn0=|1000&sdata=sqaNt7OiyjphKv2xedWeZAST16UrxYqNTg/gdZdvKSQ=&reserved=0>> (4/29, Carney) "The Senate confirmed former Sen. Bill Nelson (D) to lead the National Aeronautics and Space Administration (NASA) on Thursday. Nelson's confirmation to be Biden's NASA administrator was done by unanimous consent as the chamber prepared to leave town for a one-week recess."

#### Senate Confirms Former Sen. Bill Nelson As New NASA Administrator

Orlando (FL) Sentinel

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#### Senate Confirms Bill Nelson As NASA Administrator

UPI

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#### Senate Unanimously Confirms Nelson As NASA Administrator

Space News

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021043002nasa&r=email-3b36&l=039-d06&t=c&data=04|01|randy.c.cruz@nasa.gov|d5d1beb8921f4c67898108d90bc6ca4b|7005d45845be48ae8140d43da96dd17b|0|0|637553770699927521|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ik1hYWwiLCJXVCi6Mn0=|1000&sdata=R4Kk9IRmlySlmoHlvhmaDDlwfrRTbtH1grRn8xH7vms=&reserved=0>> (4/29, Foust) "The Senate unanimously confirmed Bill Nelson to be NASA's next administrator, wrapping up a whirlwind confirmation process that was vastly different from that experienced by his predecessor. The Senate confirmed Nelson's nomination to be NASA administrator late April 29 via unanimous consent, a mechanism used for the expedited passage of bills and nominations where no senator disapproves. The confirmation came just a day after the

Senate Commerce Committee favorably reported his nomination to the full Senate.”

#### Senate Confirms Former Florida Sen. Bill Nelson To Lead NASA

AP

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021043002nasa&r=email-3b36&l=03a-556&t=c&data=04|01|randy.c.cruz@nasa.gov|d5d1beb8921f4c67898108d90bc6ca4b|7005d45845be48ae8140d43da96dd17b|0|0|637553770699937480|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikh1aWwiLCJXVCi6Mn0=|1000&sdata=lbuCxceEZI7+RdZRq64Y7JDKuHAUaD1+au7Lj4wkz/g=&reserved=0>> (4/29) “The Senate has confirmed former Florida Sen. Bill Nelson, who once flew on the space shuttle, to be the next NASA administrator. Lawmakers agreed to President Joe Biden’s choice to lead the space agency by consensus late Thursday, without a roll call vote.”

#### NASA Simulates Asteroid Hitting Earth With The Force Of A Huge Nuclear Bomb

Newsweek

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021043002nasa&r=email-3b36&l=03b-ba8&t=c&data=04|01|randy.c.cruz@nasa.gov|d5d1beb8921f4c67898108d90bc6ca4b|7005d45845be48ae8140d43da96dd17b|0|0|637553770699937480|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikh1aWwiLCJXVCi6Mn0=|1000&sdata=L1BBFm8okJaoOEtVxs3j1eg3BZO+Qj/AJ3mykWcM+4k=&reserved=0>> (4/29, Browne) “NASA has held a tabletop exercise this week in which planetary defence officials pretend an asteroid is about to hit the Earth in order to see how key players respond. The hypothetical impact scenario has been run all through this week from April 26 at the 7th International Academy of Astronautics Planetary Defence Conference 2021.”

#### Beyer Seeks Funding For NASA In Infrastructure Bill

Space News

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#### Origami In Space Engineering: Rediscovering The Meaning Of Discovery

New York Times

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021043002nasa&r=email-3b36&l=03d-c2d&t=c&data=04|01|randy.c.cruz@nasa.gov|d5d1beb8921f4c67898108d90bc6ca4b|7005d45845be48ae8140d43da96dd17b|0|0|637553770699947413|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikh1aWwiLCJXVCi6Mn0=|1000&sdata=L+u7WMmddQ2ijcLodj7owbl7g3yFwRscd9Acq62qLKs=&reserved=0>> (4/29, Network) “This essay, by Hoonsun Lee, age 17, from Cornerstone Collegiate Academy of Seoul in Seoul, South

Korea, is one of the top 11 winners of The Learning Network's second annual STEM Writing Contest, for which we received 3,741 entries. You can find the work of all of our student winners here. ... NASA's Jet Propulsion Laboratory has the lead in origami space engineering. Origami, with its folds, compresses materials and packs them in the smallest of volumes."

Other

Want To Take More Risks? Surround Yourself With Test Pilots And Skydivers.

Washington Post

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U.S. FAA Authorizes Next Three SpaceX Launches

Reuters

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SpaceX Launches 60 More Starlink Spacecraft; FCC Clears SpaceX To Fly Satellites At Lower Altitudes

Spaceflight Now

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Elon Musk's SpaceX Is Seizing Power In Space With Satellites

Financial Times

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511&t=c&data=04|01|randy.c.cruz@nasa.gov|d5d1beb8921f4c67898108d90bc6ca4b|7005d45845be48ae8140d43da96dd17b|0|0|637553770699957372|Unknown|TWfPbGZsb3d8eyJWljoIMC4wLjAwMDAiLCJQljoiv2luMzliLCJBTil6lk1haWwiLCJXVCI6Mn0=|1000&sdata=3IQ3bqGKMqNNuJS3/zIdejHz0JNFB7yRYpkr23C9LG8=&reserved=0> (4/30, Gapper) "If you have spotted mysterious objects in the sky recently, you are not alone. Reports of unidentified flying objects in the US increased by..."

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5e1&t=c&data=04|01|randy.c.cruz@nasa.gov|d5d1beb8921f4c67898108d90bc6ca4b|7005d45845be48ae8140d43da96dd17b|0|0|637553770699967347|Unknown|TWfPbGZsb3d8eyJWljoIMC4wLjAwMDAiLCJQljoiv2luMzliLCJBTil6lk1haWwiLCJXVCI6Mn0=|1000&sdata=VYE+z6Pu7jJkPOiZ787u4NiOFLO1Q8A3PIRcgGodAog=&reserved=0>. The NASA Morning Briefing is published five days a week by Bulletin Intelligence, which creates custom briefings for government and corporate leaders. We can be found on the Web at [BulletinIntelligence.com](http://BulletinIntelligence.com), or called at (703) 483-6100.



## **[EXTERNAL] NASA Morning Briefing for Friday, February 28, 2020**

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### Editor's Note

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<[### Today's Table of Contents](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020022802nasa-26r-3Demail-2D9246-26l-3D002-2D985-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=fCiNvICCIOSa5t_pWUiXl37DoXFeCGrDV3kogeObFvk&s=Kb1dhoBr42nfX_zQ1LWSo0qFFVabBadmjopcdv8Kgnc&e=></a>. A NASA email address is required.</p></div><div data-bbox=)

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#### Justice Dept. Charges Professor With Hiding Ties To China

Associated Press <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020022802nasa-26r-3Demail-2D9246-26l-3D003-2De7d-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=fCiNvICCIOSa5t\\_pWUiXl37DoXFeCGrDV3kogeObFvk&s=PPGijXhHVpWWoxooMHa30Ah\\_oyvEK20GgtcQHfYC2HI&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020022802nasa-26r-3Demail-2D9246-26l-3D003-2De7d-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=fCiNvICCIOSa5t_pWUiXl37DoXFeCGrDV3kogeObFvk&s=PPGijXhHVpWWoxooMHa30Ah_oyvEK20GgtcQHfYC2HI&e=>)> (2/27) "A professor at the University of Tennessee has been arrested on charges that he hid his relationship with a Chinese university while receiving research grants from the federal government, the Justice Department said Thursday. Anming Hu, an associate professor in the department of mechanical, aerospace and biomedical engineering at the university's flagship Knoxville campus, was charged with three counts of wire fraud and three counts of making false statements. ... Prosecutors say Hu defrauded the National Aeronautics and Space Administration by failing to disclose the fact that he was also a professor at the Beijing University of Technology in China. Under federal law, NASA cannot fund or give grant money to Chinese-owned companies or universities."

#### Biggest Explosion Seen In Universe Came From Black Hole

Associated Press <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020022802nasa-26r-3Demail-2D9246-26l-3D004-2D0b9-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020022802nasa-26r-3Demail-2D9246-26l-3D004-2D0b9-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-)>

mHkTTiYCEf5ROyus&m=fCiNvICCIOSa5t\_pWUiXI37DoXFeCGrDV3kogeObFk&s=4d1HXndt5Plxwz8jn1mVBdWdfJZ8UK7vVTnayLZNIT4&e=> (2/27, Dunn) "Astronomers have discovered the biggest explosion seen in the universe, originating from a super-massive black hole. Scientists reported Thursday that the blast came from a black hole in a cluster of galaxies 390 million light-years away. ... Astronomers used NASA's Chandra X-Ray Observatory to make the discovery, along with a European space observatory and ground telescopes. They believe the explosion came from the heart of the Ophiuchus cluster of thousands of galaxies: a large galaxy at the center contains a colossal black hole."

#### Cruz Skeptical About Prospects For NASA Appropriations Or Other Legislation

Space News <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020022802nasa-26r-3Demail-2D9246-26l-3D005-2D0ed-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020022802nasa-26r-3Demail-2D9246-26l-3D005-2D0ed-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-)

mHkTTiYCEf5ROyus&m=fCiNvICCIOSa5t\_pWUiXI37DoXFeCGrDV3kogeObFk&s=9X1nLfusGkDa7b547cvWG8Pt1TZYXd-JlqnUGXjI15c&e=> (2/27) "The chairman of the Senate Commerce Committee's space subcommittee expressed doubts any space-related legislation, or even spending bills, can make it through Congress this year. At a Space Transportation Association event here Feb. 26, Sen. Ted Cruz (R-Texas) suggested differences between the House and Senate versions of a NASA authorization bill might be too great to reconcile, and put the blame on the House. 'In the Senate we're moving forward with a NASA authorization, and we're working on getting buy-in across stakeholders, and we'll continue to push it forward. I think it is very doable in the Senate,' he said."

#### Astronaut On Space Station Delivers Military Oath Of Enlistment To Kalamazoo-area Youth

MLive (MI) <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020022802nasa-26r-3Demail-2D9246-26l-3D006-2Df94-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020022802nasa-26r-3Demail-2D9246-26l-3D006-2Df94-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-)

mHkTTiYCEf5ROyus&m=fCiNvICCIOSa5t\_pWUiXI37DoXFeCGrDV3kogeObFk&s=DoDkbsqasvqlpnAlyNVZzw6NkU4rBpshgZWpsfWKuY&e=> (2/26) "NASA astronaut and U.S. Army Col. Andrew Morgan gave the oath of enlistment to a group of Kalamazoo area future soldiers at the Air Zoo. Live from the International Space Station, Morgan was on-screen to address 1,000 future soldiers from 150 locations during the first nationwide oath of enlistment ceremony from space on Wednesday, Feb. 26."

#### The 17 Biggest Lunar Missions Leading Up To NASA's 2024 Moon Landing

MIT Technology Review <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020022802nasa-26r-3Demail-2D9246-26l-3D007-2D78c-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020022802nasa-26r-3Demail-2D9246-26l-3D007-2D78c-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-)

mHkTTiYCEf5ROyus&m=fCiNvICCIOSa5t\_pWUiXI37DoXFeCGrDV3kogeObFk&s=K6kcRjqxMrsWWRikBI8jwt3YAg\_FRztLw0Wn1AAL5qo&e=> (2/27, Patel) "NASA's bid to return humans to the surface of the moon in 2024 is far from a sure thing. The Artemis program, started at the behest of the Trump administration, is being dogged by delays, cash shortfalls, and the absence of a real step-by-step plan. There is a strong possibility the mission will be delayed to 2025 or later, or that congressional leadership will force NASA to change its human exploration agenda yet again."

#### China's Rover Finds Layers Of Surprise Under Moon's Far Side

New York Times <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020022802nasa-26r-3Demail-2D9246-26l-3D008-](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020022802nasa-26r-3Demail-2D9246-26l-3D008-)

2Dac5-26t-

3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-

mHkTTiYCEf5ROyus&m=fCiNvICCIOSa5t\_pWUiXI37DoXFeCGrDV3kogeObFvk&s=hS30Gff3D6X3RMh4p1tr900jKKXh\_CWw3HicRoF1hIM&e=> (2/26, Chang) "The Chang'e-4 mission, the first to land on the lunar far side, is demonstrating the promise and peril of using ground-penetrating radar in planetary science. China's robotic Chang'e-4 spacecraft did something last year that had never been done before: It landed on the moon's far side, and Yutu-2, a small rover it was carrying, began trundling through a crater there. One of the rover's instruments, a ground-penetrating radar, is now revealing what lies beneath."

Flight

No content.

Earth

New 'Mini-moon' Orbiting Earth – For Now, Astronomers Say

NBC News <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020022802nasa-26r-3Demail-2D9246-26l-3D009-2D6b3-26t-](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020022802nasa-26r-3Demail-2D9246-26l-3D009-2D6b3-26t-)

3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-

mHkTTiYCEf5ROyus&m=fCiNvICCIOSa5t\_pWUiXI37DoXFeCGrDV3kogeObFvk&s=7nbEAZfcBom34kQN5VYmOHc0D8IMT4mRhxkviXJGo5Y&e=> (2/26) "A visiting mini-moon is circling Earth, according to astronomers who discovered the cosmic squatter in our planet's orbit. The tiny asteroid, dubbed 2020 CD3, was spotted by astronomers in Tucson, Arizona, on Feb. 15."

Earth Has A New 'mini-moon'

Business Insider India <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020022802nasa-26r-3Demail-2D9246-26l-3D00a-](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020022802nasa-26r-3Demail-2D9246-26l-3D00a-2D218-26t-)

2D218-26t-

3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=fCiNvICCIOSa5t\_pWUiXI37DoXFeCGrDV3kogeObFvk&s=OCcyFj3VzTb-

KGWAYLp6\_MgOenAJ0E5IHVXtiGbZBSc&e=> (2/26) "Scientists have spotted a new 'mini-moon' orbiting Earth. The visiting space rock has been identified as asteroid 2020 CD3. ... A new mini-moon was spotted circling the planet by a researcher at the Catalina Sky Survey. Between 2 to 3 meters wide, scientists estimate that Asteroid 2020 CD3 has been lingering around for the past three years."

Earth Captures New 'Mini Moon'

Phys (UK) <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020022802nasa-26r-3Demail-2D9246-26l-3D00b-2D029-26t-](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020022802nasa-26r-3Demail-2D9246-26l-3D00b-2D029-26t-)

3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-

mHkTTiYCEf5ROyus&m=fCiNvICCIOSa5t\_pWUiXI37DoXFeCGrDV3kogeObFvk&s=u3dycggbcn5Lz5JMbJgGcADIZ5w-aRdgi6LYRgRdW2w&e=> (2/27) "Earth has acquired a second 'mini-moon' about the size of a car, according to astronomers who spotted the object circling our planet. The mass – roughly 1.9-3.5 meters (6-11 feet) in diameter – was observed by researchers Kacper Wierzbach and Teddy Pruyne at the NASA-funded Catalina Sky Survey in Arizona on the night of February 15."

## Earth Has New, But Temporary, Natural Moon

UPI <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020022802nasa-26r-3Demail-2D9246-26l-3D00c-2D05d-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=fCiNvICCIOSa5t\\_pWUiXI37DoXFeCGrDV3kogeObFzk&s=Xln4dak4jl7bX832ja7i-B8X1WXpM-m\\_GUFjH1LGHA&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020022802nasa-26r-3Demail-2D9246-26l-3D00c-2D05d-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=fCiNvICCIOSa5t_pWUiXI37DoXFeCGrDV3kogeObFzk&s=Xln4dak4jl7bX832ja7i-B8X1WXpM-m_GUFjH1LGHA&e=>) (2/26, Hays) "There is a new, but temporary, natural moon orbiting Earth, according to the International Astronomical Union's Minor Planet Center. The group announced the discovery of 2020 CD3 in an update this week."

## Earth Pulls Small Asteroid Into Orbit, Creating New

KTLA-TV Los Angeles <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020022802nasa-26r-3Demail-2D9246-26l-3D00d-2Dacd-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=fCiNvICCIOSa5t\\_pWUiXI37DoXFeCGrDV3kogeObFzk&s=vUL8NPMqVbJ0gbtc9vmE\\_2YO7IT5bwm30JMihCXwtY&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020022802nasa-26r-3Demail-2D9246-26l-3D00d-2Dacd-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=fCiNvICCIOSa5t_pWUiXI37DoXFeCGrDV3kogeObFzk&s=vUL8NPMqVbJ0gbtc9vmE_2YO7IT5bwm30JMihCXwtY&e=>) Los Angeles (2/26) "It's not the moon, but you can call it mini-moon. Earth has captured a tiny object and pulled it into orbit."

## Hidden Island The Size Of Windsor Castle Uncovered In Antarctica

Daily Mail (UK) <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020022802nasa-26r-3Demail-2D9246-26l-3D00e-2D662-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=fCiNvICCIOSa5t\\_pWUiXI37DoXFeCGrDV3kogeObFzk&s=rksf9Hz8GStGecgnnOogKIVsabCPx8cfG0BVJweKGcM&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020022802nasa-26r-3Demail-2D9246-26l-3D00e-2D662-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=fCiNvICCIOSa5t_pWUiXI37DoXFeCGrDV3kogeObFzk&s=rksf9Hz8GStGecgnnOogKIVsabCPx8cfG0BVJweKGcM&e=>) (2/27, Morrison) "A once-hidden island has been uncovered in Antarctica after melting glaciers caused by record high temperatures revealed its rocky shore to passing scientists. A group of polar researchers from the Thwaites Offshore Research (THOR) project spotted the island as their ship passed through Pine Island Bay in Antarctica. ... The new discovery comes as NASA recorded a record high temperature for the continent – at 64 degrees Fahrenheit with melted ice spotted from space."

## Humans in Space

### Astronaut On Space Station Delivers Military Oath Of Enlistment To Kalamazoo-area Youth

MLive (MI) <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020022802nasa-26r-3Demail-2D9246-26l-3D00f-2D043-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=fCiNvICCIOSa5t\\_pWUiXI37DoXFeCGrDV3kogeObFzk&s=LMGGeclCUjt7PtoaQ8u3nLyriJTxD7Q56l7xKr4lmqA&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020022802nasa-26r-3Demail-2D9246-26l-3D00f-2D043-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=fCiNvICCIOSa5t_pWUiXI37DoXFeCGrDV3kogeObFzk&s=LMGGeclCUjt7PtoaQ8u3nLyriJTxD7Q56l7xKr4lmqA&e=>) (2/26) "NASA astronaut and U.S. Army Col. Andrew Morgan gave the oath of enlistment to a group of Kalamazoo area future soldiers at the Air Zoo. Live from the International Space Station, Morgan was on-screen to address 1,000 future soldiers from 150 locations during the first nationwide oath of enlistment ceremony from space on Wednesday, Feb. 26."

### NASA Astronaut Makes History With Ceremony

CNN <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-)

3D2020022802nasa-26r-3Demail-2D9246-26l-3D010-2D348-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=fCiNvICCIOSa5t\_pWUiXl37DoXFeCGrDV3kogeObFk&s=gtadMehtyWXR3gkwXGEwOUfXnJKFXgaWak2WJRtjPLw&e=> (2/27) "More than 1,000 future soldiers made history by taking an oath of enlistment from an astronaut in space. CNN affiliate KTRK reports."

#### In Unforgettable Ceremony, US Military Recruits Sworn In By ISS Astronaut In Orbit

Florida Today <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020022802nasa-26r-3Demail-2D9246-26l-3D011-2De51-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=fCiNvICCIOSa5t\\_pWUiXl37DoXFeCGrDV3kogeObFk&s=tBOghVJdrzNcV13O7pw9zwb17mTqWekDXQVBhm0vMI&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020022802nasa-26r-3Demail-2D9246-26l-3D011-2De51-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=fCiNvICCIOSa5t_pWUiXl37DoXFeCGrDV3kogeObFk&s=tBOghVJdrzNcV13O7pw9zwb17mTqWekDXQVBhm0vMI&e=>) (2/26) "More than 1,000 U.S. military recruits were sworn into service with help from a NASA astronaut on the International Space Station on Wednesday, Feb. 26. Most military recruits probably wouldn't be able to recall exactly who swore them into service. But more than 1,000 future service members were part of an unforgettable ceremony Wednesday when Army Col. Andrew Morgan, stationed on the International Space Station some 250 miles in low-Earth orbit, swore in recruits at 150 locations across the country."

#### N.J. Students Make History By Receiving U.S. Army Oath Of Enlistment From Space

WPVI-TV Philadelphia <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020022802nasa-26r-3Demail-2D9246-26l-3D012-2Debb-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=fCiNvICCIOSa5t\\_pWUiXl37DoXFeCGrDV3kogeObFk&s=tp3vTKNmGkV3sq9YafWSJQwp818aTHvQE0w\\_lmWukFI&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020022802nasa-26r-3Demail-2D9246-26l-3D012-2Debb-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=fCiNvICCIOSa5t_pWUiXl37DoXFeCGrDV3kogeObFk&s=tp3vTKNmGkV3sq9YafWSJQwp818aTHvQE0w_lmWukFI&e=>) Philadelphia (2/26) "Two Middle Township high school seniors and one of their coaches made history on Wednesday as they took the oath of enlistment for the U.S. Army from a commander in space. Students Dylan Hoffman and Anthony Anderson and the school's football and wrestling coach Justin Rhinesmith had their official swearing-in through a call from the International Space Station. U.S. Army Colonel and NASA astronaut Andrew Morgan administered the oath to future military members across the country from the ISS."

#### For The First Time, Army Recruits Are About To Get The Oath Of Enlistment From An Astronaut

Business Insider <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020022802nasa-26r-3Demail-2D9246-26l-3D013-2D6b7-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=fCiNvICCIOSa5t\\_pWUiXl37DoXFeCGrDV3kogeObFk&s=nmcaj1uB8wly1bi-XLeSjAR48Tzos1T2ck3CCZH0X70&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020022802nasa-26r-3Demail-2D9246-26l-3D013-2D6b7-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=fCiNvICCIOSa5t_pWUiXl37DoXFeCGrDV3kogeObFk&s=nmcaj1uB8wly1bi-XLeSjAR48Tzos1T2ck3CCZH0X70&e=>) (2/26, Simkins) "For the first time ever a service branch will conduct an enlistment ceremony from space – and Space Force has no involvement. Over 800 soldiers-to-be from across the country will raise their right hands on February 26 and take an oath administered by Army colonel and current International Space Station tenant, Andrew Morgan. The ceremony is the product of a partnership between NASA and US Army Recruiting Command, an Army release said."

#### Future Astronauts Could Enjoy Fresh Vegetables From An Autonomous Orbital Greenhouse

Universe Today <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020022802nasa-26r-3Demail-2D9246-26l-3D014-](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020022802nasa-26r-3Demail-2D9246-26l-3D014-)



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3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-  
mHkTTiYCEf5ROyus&m=fCiNvICCIOSa5t\_pWUiXI37DoXFeCGrDV3kogeObFk&s=7U4HxWCnFcpGnw8s8DUbAX8MY2Iq1G2mxnq8aKTQ8XA&e=> (2/26) "If humanity is going to become a spare-faring and interplanetary species, one of the most important things will be the ability of astronauts to see to their needs independently. Relying on regular shipments of supplies from Earth is not only inelegant; it's also impractical and very expensive. For this reason, scientists are working to create technologies that would allow astronauts to provide for their own food, water, and breathable air."

Moon to Mars

The 17 Biggest Lunar Missions Leading Up To NASA's 2024 Moon Landing

MIT Technology Review <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020022802nasa-26r-3Demail-2D9246-26l-3D015-2Da95-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=fCiNvICCIOSa5t\\_pWUiXI37DoXFeCGrDV3kogeObFk&s=9pmq8EX-nOIO6V87v5MXcb8vnwosEbjUVuG4mDU7qvc&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020022802nasa-26r-3Demail-2D9246-26l-3D015-2Da95-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=fCiNvICCIOSa5t_pWUiXI37DoXFeCGrDV3kogeObFk&s=9pmq8EX-nOIO6V87v5MXcb8vnwosEbjUVuG4mDU7qvc&e=>) (2/27, Patel) "NASA's bid to return humans to the surface of the moon in 2024 is far from a sure thing. The Artemis program, started at the behest of the Trump administration, is being dogged by delays, cash shortfalls, and the absence of a real step-by-step plan. There is a strong possibility the mission will be delayed to 2025 or later, or that congressional leadership will force NASA to change its human exploration agenda yet again."

Moon Landing Will Happen In 2024, NASA Says

Atlanta Journal-Constitution <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020022802nasa-26r-3Demail-2D9246-26l-3D016-2D88d-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=fCiNvICCIOSa5t\\_pWUiXI37DoXFeCGrDV3kogeObFk&s=vesvFf5\\_VLORWp4IU7KBRessuSmPIOwXpVnAnrV-bA&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020022802nasa-26r-3Demail-2D9246-26l-3D016-2D88d-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=fCiNvICCIOSa5t_pWUiXI37DoXFeCGrDV3kogeObFk&s=vesvFf5_VLORWp4IU7KBRessuSmPIOwXpVnAnrV-bA&e=>) (2/27) "Moon landing will happen in 2024, NASA says."

Solar System and Beyond

Biggest Explosion Seen In Universe Came From Black Hole

Associated Press <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020022802nasa-26r-3Demail-2D9246-26l-3D017-2D460-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=fCiNvICCIOSa5t\\_pWUiXI37DoXFeCGrDV3kogeObFk&s=e8a10bCioXvQZZ1OHMtWXOaHaRyrdTHTZ017MD7-8UI&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020022802nasa-26r-3Demail-2D9246-26l-3D017-2D460-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=fCiNvICCIOSa5t_pWUiXI37DoXFeCGrDV3kogeObFk&s=e8a10bCioXvQZZ1OHMtWXOaHaRyrdTHTZ017MD7-8UI&e=>) (2/27, Dunn) "Astronomers have discovered the biggest explosion seen in the universe, originating from a super-massive black hole. Scientists reported Thursday that the blast came from a black hole in a cluster of galaxies 390 million light-years away. ... Astronomers used NASA's Chandra X-Ray Observatory to make the discovery, along with a European space observatory and ground telescopes. They believe the explosion came from the heart of the Ophiuchus cluster of thousands of galaxies: a large galaxy at the center contains a colossal black hole."

## Astronomers Detect Biggest Explosion In The History Of The Universe

Phys (UK) <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020022802nasa-26r-3Demail-2D9246-26l-3D018-2Dd69-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=fCiNvICCIOSa5t\\_pWUiXl37DoXFeCGrDV3kogeObFk&s=xneXiKbUVpvik4gOgfGMnWUNF9r11Ale7LgTAF5rjNg&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020022802nasa-26r-3Demail-2D9246-26l-3D018-2Dd69-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=fCiNvICCIOSa5t_pWUiXl37DoXFeCGrDV3kogeObFk&s=xneXiKbUVpvik4gOgfGMnWUNF9r11Ale7LgTAF5rjNg&e=>) (2/27) "Scientists studying a distant galaxy cluster have discovered the biggest explosion seen in the Universe since the Big Bang. The blast came from a supermassive black hole at the centre of a galaxy hundreds of millions of light-years away."

## Boom! Scientists Spot The Biggest Known Explosion In The Universe

SPACE <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020022802nasa-26r-3Demail-2D9246-26l-3D019-2Dc76-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=fCiNvICCIOSa5t\\_pWUiXl37DoXFeCGrDV3kogeObFk&s=7SAG285J8EMPtRqxBnByEtYP0zJ7pFerg5339FyLkl&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020022802nasa-26r-3Demail-2D9246-26l-3D019-2Dc76-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=fCiNvICCIOSa5t_pWUiXl37DoXFeCGrDV3kogeObFk&s=7SAG285J8EMPtRqxBnByEtYP0zJ7pFerg5339FyLkl&e=>) (2/27, Wall) "Astronomers have spotted a cosmic blast that dwarfs all others. A gargantuan explosion tore through the heart of a distant galaxy cluster, releasing about five times more energy than the previous record holder, a new study reports."

## Scientists Have Detected The Biggest Explosion Ever In The Universe's History

Vice <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020022802nasa-26r-3Demail-2D9246-26l-3D01a-2D9ea-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=fCiNvICCIOSa5t\\_pWUiXl37DoXFeCGrDV3kogeObFk&s=pbrZsGAX6IVVNcl9Uq0q68WUUbPxjuttw0y71EsrcQE&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020022802nasa-26r-3Demail-2D9246-26l-3D01a-2D9ea-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=fCiNvICCIOSa5t_pWUiXl37DoXFeCGrDV3kogeObFk&s=pbrZsGAX6IVVNcl9Uq0q68WUUbPxjuttw0y71EsrcQE&e=>) (2/27) "Astronomers have detected the fallout of the biggest known explosion in the universe since it was born more than 13 billion years ago. The epic blast was unleashed by a supermassive black hole in the Ophiuchus galaxy cluster, located nearly 400 million light years from Earth, according to a study published on Thursday in The Astrophysical Journal."

## NASA Curiosity Rover Takes Mars Detour In Search Of 'something Completely New'.

CNET News <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020022802nasa-26r-3Demail-2D9246-26l-3D01b-2D603-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=fCiNvICCIOSa5t\\_pWUiXl37DoXFeCGrDV3kogeObFk&s=oHydr20GICWQWwOIR1k5CmE smsQymzqYim8aHLXMX6U&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020022802nasa-26r-3Demail-2D9246-26l-3D01b-2D603-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=fCiNvICCIOSa5t_pWUiXl37DoXFeCGrDV3kogeObFk&s=oHydr20GICWQWwOIR1k5CmE smsQymzqYim8aHLXMX6U&e=>) (2/27, Kooser) "NASA's Mars Curiosity team had a plan to one day drive the rover to the top of a sloping area called the Greenheugh pediment, but it was months or years away from happening. NASA may have just found a shortcut. While hanging out at a recent drill site, scientists spotted a possible route to get the rover to the top of the pediment way ahead of schedule."

## Potentially Habitable Exoplanet Could Broaden The Search For Life Beyond Earth

CNN <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020022802nasa-26r-3Demail-2D9246-26l-3D01c-2Dfad-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=fCiNvICCIOSa5t\\_pWUiXl37DoXFeCGrDV3kogeObFk&s=oHydr20GICWQWwOIR1k5CmE smsQymzqYim8aHLXMX6U&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020022802nasa-26r-3Demail-2D9246-26l-3D01c-2Dfad-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=fCiNvICCIOSa5t_pWUiXl37DoXFeCGrDV3kogeObFk&s=oHydr20GICWQWwOIR1k5CmE smsQymzqYim8aHLXMX6U&e=>)

3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-  
mHkTTiYCEf5ROyus&m=fCiNvICCIOSa5t\_pWUiXl37DoXFeCGrDV3kogeObFk&s=lgwn5URaf3EqwqF8sXUvV6Si8xzOdHY-GKfL6MVQhY&e=> (2/26, Strickland) "The more scientists learn about exoplanet K2-18b, the more intriguing it becomes. And it could broaden the types of exoplanets astronomers target in their search for life beyond Earth. ... Now, astronomers have used data about the exoplanet, including its mass, radius and what they learned about the atmosphere, to determine if it can host liquid water on its surface. Their study published Wednesday in The Astrophysical Journal Letters. ... The planet was first discovered in 2015 by NASA's Kepler spacecraft."

#### Super-Earth Exoplanet K2-18b Could Have Right Conditions For Life

Sci-News <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020022802nasa-26r-3Demail-2D9246-26l-3D01d-2D456-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=fCiNvICCIOSa5t\\_pWUiXl37DoXFeCGrDV3kogeObFk&s=Hfmz5czuBpnCLY\\_YoWh5j4StDXulx37\\_OJ7z19EtP4&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020022802nasa-26r-3Demail-2D9246-26l-3D01d-2D456-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=fCiNvICCIOSa5t_pWUiXl37DoXFeCGrDV3kogeObFk&s=Hfmz5czuBpnCLY_YoWh5j4StDXulx37_OJ7z19EtP4&e=>) (2/27) "A team of astronomers from the Institute of Astronomy at the University of Cambridge, UK, has found K2-18b, a planet of almost nine Earth masses in orbit around the red dwarf K2-18, to be potentially habitable. K2-18 is an M-type star located some 111 light-years away in the constellation Leo."

#### Final Test Of Orion's Launch Abort System Motor

SpaceRef <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020022802nasa-26r-3Demail-2D9246-26l-3D01e-2D01b-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=fCiNvICCIOSa5t\\_pWUiXl37DoXFeCGrDV3kogeObFk&s=oREqUXOY25Hk2QxsluKHOAUXVFin4JAleioqVEpAs8&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020022802nasa-26r-3Demail-2D9246-26l-3D01e-2D01b-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=fCiNvICCIOSa5t_pWUiXl37DoXFeCGrDV3kogeObFk&s=oREqUXOY25Hk2QxsluKHOAUXVFin4JAleioqVEpAs8&e=>) (2/26) "When NASA astronauts blast off for their voyage to the Moon on the Orion spacecraft during Artemis missions, they'll have protection in the form of the launch abort system (LAS). The LAS is designed to carry crew to safety in the event of an emergency during launch or ascent atop the agency's Space Launch System rocket. On Feb. 25, NASA successfully tested the attitude control motor (ACM), which is built by Northrop Grumman and provides steering for Orion's LAS during an abort, at the company's facility in Elkton, Maryland. The 30-second hot fire was the third and final test to qualify the motor for human missions, beginning with Artemis II."

#### UFO Sighting: NASA SOHO Helioviewer Spies 'Giant Alien Craft' Pass In Front Of Sun

Daily Express (UK) <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020022802nasa-26r-3Demail-2D9246-26l-3D01f-2D58c-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=fCiNvICCIOSa5t\\_pWUiXl37DoXFeCGrDV3kogeObFk&s=eWZlcDAWgS5w\\_VjHcA4XYSZzi6KFVjZLX9tSL06LS9s&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020022802nasa-26r-3Demail-2D9246-26l-3D01f-2D58c-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=fCiNvICCIOSa5t_pWUiXl37DoXFeCGrDV3kogeObFk&s=eWZlcDAWgS5w_VjHcA4XYSZzi6KFVjZLX9tSL06LS9s&e=>) (2/27, Fish) "Bizarre new footage shows a large seemingly-silhouetted spherical UFO transmitting the Sun. In the space of 20 seconds the unexplained object shows up against the fiery star before abruptly returning to its initial position. A time stamp in the corner of the verified NASA footage dates the incident to February 23 of this year."

#### Mysterious 15M-year-old Crater On Earth Could Unlock Secrets About Mars

Fox News <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020022802nasa-26r-3Demail-2D9246-26l-3D01f-2D58c-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=fCiNvICCIOSa5t\\_pWUiXl37DoXFeCGrDV3kogeObFk&s=eWZlcDAWgS5w\\_VjHcA4XYSZzi6KFVjZLX9tSL06LS9s&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020022802nasa-26r-3Demail-2D9246-26l-3D01f-2D58c-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=fCiNvICCIOSa5t_pWUiXl37DoXFeCGrDV3kogeObFk&s=eWZlcDAWgS5w_VjHcA4XYSZzi6KFVjZLX9tSL06LS9s&e=>)

3Fm-3D2020022802nasa-26r-3Demail-2D9246-26l-3D020-2D8c8-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-  
mHkTTiYCEf5ROyus&m=fCiNvICCIOSa5t\_pWUiXI37DoXFeCGrDV3kogeObFk&s=2yvwY3LrByLU2TWOeyjzckFoSk  
oWz7IN4BXZPSSjubw&e=> (2/27, Ciaccia) "The leftover remnants of a meteorite that smashed into Earth 15 million years ago could give new insight into Mars' past, including its oceans and whether it ever supported life. Known as the Ries Crater, this site in southern Germany has minerals and rocks that resemble parts of the Red Planet's surface. Scientists have studied the rock samples from the crater, which used to be a body of water, and discovered that there is a high pH because of the number of nitrogen isotopes and a high alkaline level."

#### GOES Extreme Weather–Tracking Satellites Get Ready For Launch

Wired <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020022802nasa-26r-3Demail-2D9246-26l-3D021-2D63d-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020022802nasa-26r-3Demail-2D9246-26l-3D021-2D63d-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-)  
mHkTTiYCEf5ROyus&m=fCiNvICCIOSa5t\_pWUiXI37DoXFeCGrDV3kogeObFk&s=pg2vbdoqD2bl\_PQEqSqm1uDa  
CoNft2rRyHPBDpMTVds&e=> (2/27, Oberhaus) "For ages, earthlings regarded lightning as an indicator of godly wrath. To understand what displeased a higher power, you followed the damage from Thor's hammer strike, Raijin's drumbeat, or the javelins hurled down by Zeus. Today scientists have their own God's-eye view of lightning, with instruments that orbit about 22,000 miles above the planet, monitoring nearly every single strike that flashes across the Western Hemisphere. Lightning, it turns out, is still an indicator: Increased electrical activity in the atmosphere is a bellwether for the onset of severe storms – a reflection of the damage inflicted not by any god but, at least in part, by human-made climate change."

#### Space Tech

#### AFRL, Masten Space Systems, NASA Successfully Test Methane Engine

Dayton (OH) Daily News <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020022802nasa-26r-3Demail-2D9246-26l-3D022-2D982-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020022802nasa-26r-3Demail-2D9246-26l-3D022-2D982-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-)  
mHkTTiYCEf5ROyus&m=fCiNvICCIOSa5t\_pWUiXI37DoXFeCGrDV3kogeObFk&s=2Tv3NzSfTNVwXuBCN8TcWHX  
mQ-ZTVcRzEh8gYr6FLwl&e=> (2/28) "The Air Force Research Laboratory, NASA's Space Technology Mission Directorate and Masten Space Systems Inc. successfully tested a liquid methane rocket engine, the first of its kind tested at AFRL. AFRL and Masten signed a cooperative research and development agreement in December 2018. The agreement enabled Masten to test the Broadsword 25K engine at AFRL's rocket testing facility at Edwards Air Force Base in Test Area 1-125 and complete NASA's Tipping Point contract requirement of a 10-second hot fire test."

#### Docking Gives Telecoms Satellite New Lease Of Life

BBC News Online (UK) <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020022802nasa-26r-3Demail-2D9246-26l-3D023-2D7bd-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020022802nasa-26r-3Demail-2D9246-26l-3D023-2D7bd-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-)  
mHkTTiYCEf5ROyus&m=fCiNvICCIOSa5t\_pWUiXI37DoXFeCGrDV3kogeObFk&s=ez4KObAPemzY5No5mZZbFEo  
RuAdXKImKZKwqZGRoG8w&e=> (2/26, Amos) "Two American satellites have docked high over the Atlantic in a demonstration of what many commentators expect to be a burgeoning new industry. ... Tom Wilson, a vice president

with Northrop Grumman Space Systems and president of SpaceLogistics LLC, said he also foresaw applications for the US space agency when it sent astronauts far beyond Earth. 'As Nasa goes beyond [the Moon] all the way out to Mars and explores the Solar System, there's going to be the need to do all kinds of autonomous robotic missions – the ability to join vehicles together, to do rendezvous proximity operations, the ability to manufacture pieces or components that you didn't know you needed. All this technology leads to those types of vehicles and services,' he told reporters."

Various

#### Justice Dept. Charges Professor With Hiding Ties To China

Associated Press <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020022802nasa-26r-3Demail-2D9246-26l-3D024-2Dcb5-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=fCiNvICCIOSa5t\\_pWUiXI37DoXFeCGrDV3kogeObFvk&s=IA3ZLUxpYp1jj9TdZBkwh-caRwuGXo6ltYLU9CL8Q2l&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020022802nasa-26r-3Demail-2D9246-26l-3D024-2Dcb5-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=fCiNvICCIOSa5t_pWUiXI37DoXFeCGrDV3kogeObFvk&s=IA3ZLUxpYp1jj9TdZBkwh-caRwuGXo6ltYLU9CL8Q2l&e=>) (2/27) "A professor at the University of Tennessee has been arrested on charges that he hid his relationship with a Chinese university while receiving research grants from the federal government, the Justice Department said Thursday. Anming Hu, an associate professor in the department of mechanical, aerospace and biomedical engineering at the university's flagship Knoxville campus, was charged with three counts of wire fraud and three counts of making false statements. ... Prosecutors say Hu defrauded the National Aeronautics and Space Administration by failing to disclose the fact that he was also a professor at the Beijing University of Technology in China. Under federal law, NASA cannot fund or give grant money to Chinese-owned companies or universities."

#### University Of Tennessee Professor Charged With Hiding Connection To Chinese University

Knoxville (TN) News Sentinel <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020022802nasa-26r-3Demail-2D9246-26l-3D025-2Dc04-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=fCiNvICCIOSa5t\\_pWUiXI37DoXFeCGrDV3kogeObFvk&s=22yYEeKzav9Bf2eyzGrcDCPgD O\\_juHSoxnYig2oNf0M&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020022802nasa-26r-3Demail-2D9246-26l-3D025-2Dc04-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=fCiNvICCIOSa5t_pWUiXI37DoXFeCGrDV3kogeObFvk&s=22yYEeKzav9Bf2eyzGrcDCPgD O_juHSoxnYig2oNf0M&e=>) (2/27) "A researcher at the University of Tennessee in Knoxville was arrested Thursday on federal charges he defrauded the National Aeronautics and Space Administration by hiding his employment with a Chinese university, authorities said. Anming Hu, an associate professor in the Department of Mechanical, Aerospace and Biomedical Engineering, faces three counts of wire fraud and three counts of making false statements, according to a news release from the U.S. Department of Justice."

#### Cruz Skeptical About Prospects For NASA Appropriations Or Other Legislation

Space News <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020022802nasa-26r-3Demail-2D9246-26l-3D026-2Dbaa-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=fCiNvICCIOSa5t\\_pWUiXI37DoXFeCGrDV3kogeObFvk&s=WMB04Lj8nkbqHPyHX0plSGSqj81zcY4JvhdGA2TTgJY&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020022802nasa-26r-3Demail-2D9246-26l-3D026-2Dbaa-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=fCiNvICCIOSa5t_pWUiXI37DoXFeCGrDV3kogeObFvk&s=WMB04Lj8nkbqHPyHX0plSGSqj81zcY4JvhdGA2TTgJY&e=>) (2/27) "The chairman of the Senate Commerce Committee's space subcommittee expressed doubts any space-related legislation, or even spending bills, can make it through Congress this year. At a Space Transportation Association event here Feb. 26, Sen. Ted Cruz (R-Texas) suggested differences between the House and Senate versions of a NASA authorization bill might be too great to reconcile, and put the blame on the House. 'In the Senate we're moving forward with a NASA authorization, and we're working on getting buy-in across stakeholders, and we'll continue to push it forward. I think it is very doable in the Senate,' he said."

## Virginia City Renames Road For Apollo 11 Astronaut Armstrong

AP <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020022802nasa-26r-3Demail-2D9246-26l-3D027-2D7e4-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=fCiNvICCIOSa5t\\_pWUiXl37DoXFeCGrDV3kogeObFk&s=wpOXBKjjevwEuS5iiBsoJ4NvKaTaTa7OpBzSRTW1uDI&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020022802nasa-26r-3Demail-2D9246-26l-3D027-2D7e4-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=fCiNvICCIOSa5t_pWUiXl37DoXFeCGrDV3kogeObFk&s=wpOXBKjjevwEuS5iiBsoJ4NvKaTaTa7OpBzSRTW1uDI&e=>) (2/27) “The Hampton City Council has voted to place the name of Apollo 11 astronaut Neil Armstrong on a road which had been named for a Confederate general. The road was named for Confederate general John B. Magruder, but city officials said the change happened only because a NASA employee last July emailed Mayor Donnie Tuck, suggesting naming it for the famous astronaut, The Virginian-Pilot reported Thursday.”

## Katherine Johnson, A Human Computer, Calculated Trajectories For Astronauts

Wall Street Journal <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020022802nasa-26r-3Demail-2D9246-26l-3D028-2Dd41-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=fCiNvICCIOSa5t\\_pWUiXl37DoXFeCGrDV3kogeObFk&s=gq9ZS9Z6QQFCdlQu2OgHsFsXLpCzVvyv5mNKvYNIV0eA&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020022802nasa-26r-3Demail-2D9246-26l-3D028-2Dd41-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=fCiNvICCIOSa5t_pWUiXl37DoXFeCGrDV3kogeObFk&s=gq9ZS9Z6QQFCdlQu2OgHsFsXLpCzVvyv5mNKvYNIV0eA&e=>) (2/26, Hagerty) reports on Katherine Johnson’s work as a mathematician at NASA. The Journal says she verified orbital-trajectory math a computer had calculated for John Glenn’s 1962 trip to space.

## As Others See It: Katherine Johnson’s Inspiring Life Is A Model For All Generations To Come

Pittsburgh Post-Gazette <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020022802nasa-26r-3Demail-2D9246-26l-3D029-2Dd3c-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=fCiNvICCIOSa5t\\_pWUiXl37DoXFeCGrDV3kogeObFk&s=h-ZzzRnjN5Rg88i2TsCsr35DffhzJ08PuCys-VfsLRw&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020022802nasa-26r-3Demail-2D9246-26l-3D029-2Dd3c-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=fCiNvICCIOSa5t_pWUiXl37DoXFeCGrDV3kogeObFk&s=h-ZzzRnjN5Rg88i2TsCsr35DffhzJ08PuCys-VfsLRw&e=>) (2/27) “If women and girls in this country are making any progress on shattering the negative stereotypes of what they can do in mathematics and engineering, they have Katherine Johnson to thank for helping to pave the way. Ms. Johnson was a pioneer at NASA and the National Advisory Committee for Aeronautics between 1930 and 1970. She, along with other black women, helped make critical calculations that launched our astronauts into orbit.”

## Katherine Johnson: NASA Mathematician And Much-Needed Role Model

The Conversation <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020022802nasa-26r-3Demail-2D9246-26l-3D02a-2D96a-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=fCiNvICCIOSa5t\\_pWUiXl37DoXFeCGrDV3kogeObFk&s=1HTJ23Px5WcgQ1xIhLFr0qhM0S4xun-QJHJzrahvchM&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020022802nasa-26r-3Demail-2D9246-26l-3D02a-2D96a-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=fCiNvICCIOSa5t_pWUiXl37DoXFeCGrDV3kogeObFk&s=1HTJ23Px5WcgQ1xIhLFr0qhM0S4xun-QJHJzrahvchM&e=>) (2/26) “Katherine Johnson, who has died at the age of 101, was an amazing woman. But up until a few years ago, hardly anyone had heard of her or her achievements. She was a mathematician and she worked for NASA. But on paper neither of those facts would make her stand out from the crowd. Add a few more facts – she was a woman, she was black and working in the US in the 1950s to early 1960s – and the scale of her success becomes more apparent.”

## NASA Glenn Research Center Resumes Yearly Series Of Tours

Cleveland Plain Dealer <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020022802nasa-26r-3Demail-2D9246-26l-3D02b-2Db55-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=fCiNvICCIOSa5t\\_pWUiXI37DoXFeCGrDV3kogeObFvk&s=xgbkYaTkw-OJVMq6xOUW55tvhETflsJtOot8n\\_13B5w&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020022802nasa-26r-3Demail-2D9246-26l-3D02b-2Db55-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=fCiNvICCIOSa5t_pWUiXI37DoXFeCGrDV3kogeObFvk&s=xgbkYaTkw-OJVMq6xOUW55tvhETflsJtOot8n_13B5w&e=>) (2/27) "NASA Glenn Research Center will resume its yearly series of tours. The center will guide free tours for 45 minutes one Saturday per month from April through October. The first six Saturdays will take place at the center's headquarters, Lewis Field, in Brook Park. The seventh's site has not been announced yet."

## 'Black In Space' Explores Final Frontier Of Civil Rights

AP <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020022802nasa-26r-3Demail-2D9246-26l-3D02c-2Dcce-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=fCiNvICCIOSa5t\\_pWUiXI37DoXFeCGrDV3kogeObFvk&s=7wGC5\\_oCpYeCrybPY\\_UG9dKFZ6sC3ApPLKpQmvliz0Y&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020022802nasa-26r-3Demail-2D9246-26l-3D02c-2Dcce-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=fCiNvICCIOSa5t_pWUiXI37DoXFeCGrDV3kogeObFvk&s=7wGC5_oCpYeCrybPY_UG9dKFZ6sC3ApPLKpQmvliz0Y&e=>) (2/27) "In 1959, Ronald Erwin McNair walked into a South Carolina library. The 9-year-old aspiring astronaut wanted to check out a calculus book, but a librarian threatened to call the police if he didn't leave. McNair was black. Years later, McNair was selected to become only the second African American to travel to space, overcoming segregation, poverty and stereotypes in an intellectual act of resistance that inspired a generation. Tragically, McNair died in the 1986 space shuttle Challenger tragedy."

## NASA Engineer, 25, Uses Hip Hop To Make Math And Science More Accessible To Young People

Black Entertainment Television <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020022802nasa-26r-3Demail-2D9246-26l-3D02d-2D94b-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=fCiNvICCIOSa5t\\_pWUiXI37DoXFeCGrDV3kogeObFvk&s=nOdLMcvIGZ7eoB\\_CqMHqjEMBHsalPUZwY0ldUsZOep8&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020022802nasa-26r-3Demail-2D9246-26l-3D02d-2D94b-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=fCiNvICCIOSa5t_pWUiXI37DoXFeCGrDV3kogeObFvk&s=nOdLMcvIGZ7eoB_CqMHqjEMBHsalPUZwY0ldUsZOep8&e=>) (2/26) "NASA engineer Dajae Williams is using Hip Hop to help teach math and science to young people. During an interview with NPR, Williams spoke about how her love for math and how she turned it from something she struggled with into her passion."

## Letters To The Editor: It's A Shame That It Took A Movie To Make Katherine Johnson Widely Known

Los Angeles Times <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020022802nasa-26r-3Demail-2D9246-26l-3D02e-2D3e2-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=fCiNvICCIOSa5t\\_pWUiXI37DoXFeCGrDV3kogeObFvk&s=JPbMa0uaRuU0DNuAZ8QRcXH0EBFv6TlikMxe3yyv-C4&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020022802nasa-26r-3Demail-2D9246-26l-3D02e-2D3e2-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=fCiNvICCIOSa5t_pWUiXI37DoXFeCGrDV3kogeObFvk&s=JPbMa0uaRuU0DNuAZ8QRcXH0EBFv6TlikMxe3yyv-C4&e=>) (2/27) "To the editor: The tragedy of the late NASA mathematician Katherine Johnson's life is that it took a movie, 'Hidden Figures,' to bring her remarkable story to light, considering that famed astronauts John Glenn and Buzz Aldrin along with the rest of the space program knew of her invaluable contribution for decades."

## Local Students Get Chance To Talk With NASA Astronauts

Atlanta Journal-Constitution <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020022802nasa-26r-3Demail-2D9246-26l-3D02f-2D081-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=fCiNvICCIOSa5t\\_pWUiXI37DoXFeCGrDV3kogeObFvk&s=p0myhcrISDT4OSbVSVa4jD4b8VT16f7RsTz6qjYwFE&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020022802nasa-26r-3Demail-2D9246-26l-3D02f-2D081-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=fCiNvICCIOSa5t_pWUiXI37DoXFeCGrDV3kogeObFvk&s=p0myhcrISDT4OSbVSVa4jD4b8VT16f7RsTz6qjYwFE&e=>)> (2/27) “Local students get chance to talk with NASA astronauts.”

Other

#### China's Rover Finds Layers Of Surprise Under Moon's Far Side

New York Times <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020022802nasa-26r-3Demail-2D9246-26l-3D030-2D3ad-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=fCiNvICCIOSa5t\\_pWUiXI37DoXFeCGrDV3kogeObFvk&s=h9PQC-wZFPUFd\\_khYt-0Z7aZplm2fRSEaXns1P7UNK4&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020022802nasa-26r-3Demail-2D9246-26l-3D030-2D3ad-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=fCiNvICCIOSa5t_pWUiXI37DoXFeCGrDV3kogeObFvk&s=h9PQC-wZFPUFd_khYt-0Z7aZplm2fRSEaXns1P7UNK4&e=>)> (2/26, Chang) “The Chang’e-4 mission, the first to land on the lunar far side, is demonstrating the promise and peril of using ground-penetrating radar in planetary science. China’s robotic Chang’e-4 spacecraft did something last year that had never been done before: It landed on the moon’s far side, and Yutu-2, a small rover it was carrying, began trundling through a crater there. One of the rover’s instruments, a ground-penetrating radar, is now revealing what lies beneath.”

From A Farside First To Cislunar Dominance? China Appears To Want To Establish ‘Space Economic Zone’ Worth Trillions

Space News <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020022802nasa-26r-3Demail-2D9246-26l-3D031-2D805-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=fCiNvICCIOSa5t\\_pWUiXI37DoXFeCGrDV3kogeObFvk&s=MK2S0dIMSCrajzkqckp9BW5asxva1Kr2AAAdJCXax68&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020022802nasa-26r-3Demail-2D9246-26l-3D031-2D805-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=fCiNvICCIOSa5t_pWUiXI37DoXFeCGrDV3kogeObFvk&s=MK2S0dIMSCrajzkqckp9BW5asxva1Kr2AAAdJCXax68&e=>)> (2/15) “A year that began with China claiming the first-ever landing on the far side of the moon came to a close with questionable claims the emerging superpower intends to make cislunar space the celestial equivalent of the disputed South China Sea. The kerfuffle started this fall when China’s Science and Technology Daily newspaper reported that China wants to establish ‘space economic zone’ between the Earth and the moon capable of generating \$10 trillion a year for China by 2050.”

#### China's Chang'e-4 Mission Peers Beneath The Lunar Farside's Surface

Astronomy News <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020022802nasa-26r-3Demail-2D9246-26l-3D032-2Dd99-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=fCiNvICCIOSa5t\\_pWUiXI37DoXFeCGrDV3kogeObFvk&s=2mtWJhO6bPfeX0r-3Y0bLXO2jMBUywwtQpduTVqS6Z8&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020022802nasa-26r-3Demail-2D9246-26l-3D032-2Dd99-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=fCiNvICCIOSa5t_pWUiXI37DoXFeCGrDV3kogeObFvk&s=2mtWJhO6bPfeX0r-3Y0bLXO2jMBUywwtQpduTVqS6Z8&e=>)> (2/26) “New data from the first spacecraft to land softly on the lunar farside is offering up fresh details about the part of the Moon that’s hidden from view on Earth. The Chinese rover found that the ground beneath it is similar to what’s found on our satellite’s more familiar face.”

#### China's Moon Rover Revealed What Lies Beneath The Lunar Farside



Science News <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020022802nasa-26r-3Demail-2D9246-26l-3D033-2Dbf0-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020022802nasa-26r-3Demail-2D9246-26l-3D033-2Dbf0-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-)>  
mHkTTiYCEf5ROyus&m=fCiNvICCIOSa5t\_pWUiXl37DoXFeCGrDV3kogeObFk&s=YL55lrb6DAKomS8ek1B1Yhngu oXrdPacrN8Rak5EpNI&e=> (2/26) "The farside of the moon is a lunar layer cake. New data from China's Chang'e-4 lander and Yutu-2 rover reveal alternating layers of coarse rock and fine soil down to a depth of 40 meters, suggesting a history of violent impacts, scientists report February 26 in Science Advances."

#### SpaceX Planning Major Increase In Florida Launch Activity

Space News <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020022802nasa-26r-3Demail-2D9246-26l-3D034-2D37a-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020022802nasa-26r-3Demail-2D9246-26l-3D034-2D37a-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-)>  
mHkTTiYCEf5ROyus&m=fCiNvICCIOSa5t\_pWUiXl37DoXFeCGrDV3kogeObFk&s=2l6WdlJLkZIYSAiWitMiJ6fFaTofp u\_leWkFC-P9-RY&e=> (2/27, Foust) "SpaceX is proposing a significant increase in launch activity in Florida over the next few years, including missions to polar orbits and those that will require the use of a new vertical payload integration tower. The Federal Aviation Administration's Office of Commercial Space Transportation published a draft environmental assessment Feb. 27 regarding SpaceX launch activities from both Launch Complex 39A at the Kennedy Space Center and Space Launch Complex 40 at neighboring Cape Canaveral Air Force Station. The assessment, the FAA said, will be used in new or modified commercial launch licenses for Falcon 9 and Falcon Heavy vehicles from those sites."

#### SpaceX Swaps Upper Stage For Next Falcon 9 Launch

Spaceflight Now <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020022802nasa-26r-3Demail-2D9246-26l-3D035-2D599-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020022802nasa-26r-3Demail-2D9246-26l-3D035-2D599-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-)>  
mHkTTiYCEf5ROyus&m=fCiNvICCIOSa5t\_pWUiXl37DoXFeCGrDV3kogeObFk&s=z4RDVq6t9zDjfm95FvA32eRTp VGszYVmfUIKtPLtU3Q&e=> (2/26, Clark) "SpaceX is targeting launches March 6 and March 11 for its next two missions after swapping an upper stage for its next Falcon 9 rocket with another stage already being readied for liftoff at Cape Canaveral. The launch targeted for March 6 from pad 40 at Cape Canaveral Air Force Station will send a Dragon supply ship toward the International Space Station with nearly three tons of cargo, crew provisions and experiments, including a new mounting platform for external research payloads outside the station's European Columbus lab module."

#### India Outlines Launch Plans, Progress In Human Spaceflight And Space Transportation

Space News <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020022802nasa-26r-3Demail-2D9246-26l-3D036-2Db70-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020022802nasa-26r-3Demail-2D9246-26l-3D036-2Db70-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-)>  
mHkTTiYCEf5ROyus&m=fCiNvICCIOSa5t\_pWUiXl37DoXFeCGrDV3kogeObFk&s=uvnL0NwypWRrgz0i6FdpQgdPm YzITqLx9BI5w6o3EhE&e=> (2/27, Jones) "India's launch plans for the coming year include a range of Earth observation, communication and navigation satellites according to an annual report. Progress in the areas of space transportation and human spaceflight is also laid out in the Indian Space Research Organisation (ISRO) report."

#### Virgin Galactic Opens Up Prebooking Booking Option

Space Daily <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020022802nasa-26r-3Demail-2D9246-26l-3D037-2Defb-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=fCiNvICCIOSa5t\\_pWUiXI37DoXFeCGrDV3kogeObFk&s=\\_RSksnjroGM6nqtzVA2SFhBcr4wXL3FiMrSqmcwzbn4&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020022802nasa-26r-3Demail-2D9246-26l-3D037-2Defb-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=fCiNvICCIOSa5t_pWUiXI37DoXFeCGrDV3kogeObFk&s=_RSksnjroGM6nqtzVA2SFhBcr4wXL3FiMrSqmcwzbn4&e=>) (2/27) “Virgin Galactic reports that in preparation for the re-opening of spaceflight sales, it is introducing the One Small Step initiative. The company formally closed its doors to new ticket sales after its history-making first space flight in December 2018.”

#### Virgin Galactic Wants To Open Space Flights To ‘dramatically’ More People

Fox Business <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020022802nasa-26r-3Demail-2D9246-26l-3D038-2Dab9-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=fCiNvICCIOSa5t\\_pWUiXI37DoXFeCGrDV3kogeObFk&s=pxvHwXbUOVb3M2Mlu9GNohsC2BU4LBYOeTT1U1WKjsY&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020022802nasa-26r-3Demail-2D9246-26l-3D038-2Dab9-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=fCiNvICCIOSa5t_pWUiXI37DoXFeCGrDV3kogeObFk&s=pxvHwXbUOVb3M2Mlu9GNohsC2BU4LBYOeTT1U1WKjsY&e=>) (2/26, Limitone) “Virgin Galactic, the world’s first commercial space line, is working to resume ticket sales for its space tour amid surging demand. ‘We aspire to open space to... dramatically more people... then in the past,’ said Virgin Galactic CEO George T. Whitesides to FOX Business’ Kristina Partsinevelos Wednesday.”

#### New Technology Could End Trains’ Wi-fi ‘Notspots’

BBC News Online (UK) <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020022802nasa-26r-3Demail-2D9246-26l-3D039-2D524-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=fCiNvICCIOSa5t\\_pWUiXI37DoXFeCGrDV3kogeObFk&s=XbtMo\\_voJK6yr3TdxidUXP0Qnp3XyE0QN2OwlLevwuA&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020022802nasa-26r-3Demail-2D9246-26l-3D039-2D524-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=fCiNvICCIOSa5t_pWUiXI37DoXFeCGrDV3kogeObFk&s=XbtMo_voJK6yr3TdxidUXP0Qnp3XyE0QN2OwlLevwuA&e=>) (2/27) “Researchers have developed a satellite antenna that could end frustration for millions of rail passengers. It has been designed to provide high speed broadband on the move without the breaks in connection that plague many rail journeys, particularly in rural areas.”

#### How To Spot Canis Major, The Big Dog Of Winter

SPACE <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020022802nasa-26r-3Demail-2D9246-26l-3D03a-2D113-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=fCiNvICCIOSa5t\\_pWUiXI37DoXFeCGrDV3kogeObFk&s=9oS1xfG6nAayP35dpc1pH5JUWk0Kt4ZLNvZRC8cuPw&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020022802nasa-26r-3Demail-2D9246-26l-3D03a-2D113-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=fCiNvICCIOSa5t_pWUiXI37DoXFeCGrDV3kogeObFk&s=9oS1xfG6nAayP35dpc1pH5JUWk0Kt4ZLNvZRC8cuPw&e=>) (2/26) “This is the month when the constellation of Orion, the mighty hunter, and his retinue dominate the southern sky at around 8 p.m. local time. Orion, of course, is the brightest of all the constellations, with a rectangular array of four bright stars outlining his torso and three bright stars positioned diagonally to mark his belt. Surrounding Orion are several star patterns, not quite so bright, but each one containing at least one object that attracts attention.”

#### Northrop Grumman’s MEV-1 Servicer Docks With Intelsat Satellite

Space News <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020022802nasa-26r-3Demail-2D9246-26l-3D03b-2D441-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=fCiNvICCIOSa5t\\_pWUiXI37DoXFeCGrDV3kogeObFk&s=9oS1xfG6nAayP35dpc1pH5JUWk0Kt4ZLNvZRC8cuPw&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020022802nasa-26r-3Demail-2D9246-26l-3D03b-2D441-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=fCiNvICCIOSa5t_pWUiXI37DoXFeCGrDV3kogeObFk&s=9oS1xfG6nAayP35dpc1pH5JUWk0Kt4ZLNvZRC8cuPw&e=>)

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mHkTTiYCEf5ROyus&m=fCiNvICCIOSa5t\_pWUiXI37DoXFeCGrDV3kogeObFk&s=FaZ1aM3TbtXYQvzIYxB1sWX48  
oDUtcySGRCifGk3BZ0&e=> (2/26, Henry) "Northrop Grumman's satellite servicing spacecraft successfully docked  
with an Intelsat communications satellite Feb. 25 in a bid to keep the nearly 19-year-old satellite in service an  
additional five years, Northrop Grumman and Intelsat executives said Feb. 26."

SpaceX's Next Starship Prototype Moves To Launchpad For Testing (video)

SPACE <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020022802nasa-26r-3Demail-2D9246-26l-3D03c-2D701-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020022802nasa-26r-3Demail-2D9246-26l-3D03c-2D701-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD)>  
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mHkTTiYCEf5ROyus&m=fCiNvICCIOSa5t\_pWUiXI37DoXFeCGrDV3kogeObFk&s=r2mZwBcptjHmllE0\_IWmlh0pEM  
qMkWADLwP86\_iS1C0&e=> (2/27, Howell) "Look at that Starship go! A new time-lapse video shows a prototype of  
SpaceX's Mars-colonizing ship moving toward the launchpad for testing. The unfinished prototype vehicle, called  
Starship SN1, was rolled to a pad at SpaceX's Boca Chica, Texas, facility on Monday (Feb. 24) to have liquid nitrogen  
pressure testing performed on it."

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EDfAw7v-byMmO10gTs&e=>. The NASA Morning Briefing is published five days a week by Bulletin Intelligence,  
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## **[EXTERNAL] NASA Morning Briefing for Friday, January 3, 2020**

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- NASA Has Big Plans For The 2020s, From Powerful New Space Telescopes To A Hunt For Alien Life On A Moon Of Saturn. Here's The Timeline. (Business Insider) <#S4>
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#### Top Stories

WHITTINGTON: Apple TV's 'For All Mankind' Needs More Space Adventure, Less Political Commentary

Daily Caller <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020010302nasa-26r-3Demail-2D975e-26l-3D003-2De1c-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020010302nasa-26r-3Demail-2D975e-26l-3D003-2De1c-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD)>

8-mHkTTiYCEf5ROYus&m=cS1PFikKUbyYtwpK5lp7c1qvRKI1-nwfK68W-4M4-Kyl&s=2Nu3Y4WeeFD3bhHTNgv2cuHSV0EzBNTW\_OVNRAN4dBk&e=> (1/2, Whittington) "The Apple TV+ alternate history series 'For All Mankind' has completed its first season, which was rife with political commentary. Its producers should consider focusing less on left-wing commentary and more on space in future seasons. The series, which is based in the 1970s, is premised on the idea that a prolonged space race would have inspired social changes that either did not occur in real life or only much later than depicted. For instance, women become part of the NASA moon program, leading to the passage of the Equal Rights Amendment — after Teddy Kennedy becomes president in 1972."

#### NASA Astronaut's Blood Clot In Space Gets Treated By Doctor On Earth

CNET News <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020010302nasa-26r-3Demail-2D975e-26l-3D004-2Ddd1-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=cS1PFikKUbyYtwpK5lp7c1qvRKI1-nwfK68W-4M4-Kyl&s=9yHFL07kHIPdG1gKTrOkP94fOSfKNACRC2ncdFBcgnA&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020010302nasa-26r-3Demail-2D975e-26l-3D004-2Ddd1-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=cS1PFikKUbyYtwpK5lp7c1qvRKI1-nwfK68W-4M4-Kyl&s=9yHFL07kHIPdG1gKTrOkP94fOSfKNACRC2ncdFBcgnA&e=>) (1/2, Kooser) "It was like Grey's Anatomy in microgravity. A NASA astronaut developed a blood clot (deep vein thrombosis – DVT) in the jugular vein partway through a long-term mission on the International Space Station. The space agency called in University of North Carolina doctor Stephan Moll, a blood-clot expert, to help develop a treatment plan for the tricky situation."

#### Record-Breaking NASA Astronaut Welcomes Decade Of Artemis With Stunning Moonrise Photo

SPACE <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020010302nasa-26r-3Demail-2D975e-26l-3D005-2D202-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=cS1PFikKUbyYtwpK5lp7c1qvRKI1-nwfK68W-4M4-Kyl&s=L92F34OSnOb49iEf8DYPJNv4gU0\\_Pt4G7ra7\\_XRtHtc&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020010302nasa-26r-3Demail-2D975e-26l-3D005-2D202-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=cS1PFikKUbyYtwpK5lp7c1qvRKI1-nwfK68W-4M4-Kyl&s=L92F34OSnOb49iEf8DYPJNv4gU0_Pt4G7ra7_XRtHtc&e=>) (1/2, Gohd) "Record-breaking NASA astronaut Christina Koch welcomed the decade that the U.S. plans to return to the moon with a stunning moonrise photo. Koch, who recently set the record for the longest space mission by a woman, is still aboard the International Space Station and is looking to the future. To celebrate the new year, Koch posted a stunning moonrise photo to Twitter."

#### NASA Has Big Plans For The 2020s, From Powerful New Space Telescopes To A Hunt For Alien Life On A Moon Of Saturn. Here's The Timeline.

Business Insider <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020010302nasa-26r-3Demail-2D975e-26l-3D006-2De3d-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=cS1PFikKUbyYtwpK5lp7c1qvRKI1-nwfK68W-4M4-Kyl&s=vEuUDaiH5ZJbCZ-jrynboqe9ZVV9JtoKl1VfbbQVeng&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020010302nasa-26r-3Demail-2D975e-26l-3D006-2De3d-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=cS1PFikKUbyYtwpK5lp7c1qvRKI1-nwfK68W-4M4-Kyl&s=vEuUDaiH5ZJbCZ-jrynboqe9ZVV9JtoKl1VfbbQVeng&e=>) (1/2, McFall-Johnsen) "NASA's plans for this new decade involve billions of dollars and span millions of miles. And much like the universe, they're only expanding. In 2018, NASA announced plans to send astronauts back to the moon. The agency said it would eventually build a lunar base and springboard to Mars in the years after that."

#### NASA's Next Mars Rover Will Soon Ship To Cape Canaveral Launch Site

Spaceflight Now <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020010302nasa-26r-3Demail-2D975e-26l-3D007-2D1e3-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=cS1PFikKUbyYtwpK5lp7c1qvRKI1-nwfK68W-4M4-Kyl&s=vEuUDaiH5ZJbCZ-jrynboqe9ZVV9JtoKl1VfbbQVeng&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020010302nasa-26r-3Demail-2D975e-26l-3D007-2D1e3-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=cS1PFikKUbyYtwpK5lp7c1qvRKI1-nwfK68W-4M4-Kyl&s=vEuUDaiH5ZJbCZ-jrynboqe9ZVV9JtoKl1VfbbQVeng&e=>)

Kyl&s=uU1\_zb5IM1mKCO4BtAx\_uZwVay6MFQgGFZUmEkcoc\_k&e=> (1/2, Clark) “Fresh off its first terrestrial test drive, NASA’s Mars 2020 rover was displayed to media last week at the Jet Propulsion Laboratory in California before it’s packed up and flown across the country to Cape Canaveral in February to begin final launch preparations for liftoff in July. The six-wheeled robot is similar in appearance to NASA’s Curiosity rover, which has explored Mars since August 2012, but the Mars 2020 rover carries an upgraded suite of scientific instruments, plus mechanisms to collect, seal and store samples of powder drilled and cored from Martian rocks.”

Flight

No content.

Earth

See Where Australia’s Deadly Wildfires Are Burning

New York Times <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020010302nasa-26r-3Demail-2D975e-26l-3D008-2Dc5a-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=cS1PFikKUbYtwpK5lp7c1qvRKI1-nwfK68W-4M4-Kyl&s=DJBORV3lco\\_2BbeEXN0SAzbakgTCiqgUmMeQqRRulU4&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020010302nasa-26r-3Demail-2D975e-26l-3D008-2Dc5a-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=cS1PFikKUbYtwpK5lp7c1qvRKI1-nwfK68W-4M4-Kyl&s=DJBORV3lco_2BbeEXN0SAzbakgTCiqgUmMeQqRRulU4&e=>) (1/2, Popovich, Lu, Miglioizzi) “Thousands of tourists and residents have been forced to evacuate from areas along the southeast coast so far, and tens of thousands more are fleeing to safer ground ahead of the weekend, with forecasters predicting a new round of dangerous fire conditions. ... This chart was created using data from two NASA satellites, Terra and Aqua, which can detect the infrared radiation emitted by fires.”

Stunning Images From Space Reveal The Shocking Extent Of Australia’s Bushfire Crisis

Business Insider <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020010302nasa-26r-3Demail-2D975e-26l-3D009-2Dd05-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=cS1PFikKUbYtwpK5lp7c1qvRKI1-nwfK68W-4M4-Kyl&s=L-f05oi\\_LHfZVwx5xcoyY-1XzOLRyFo\\_R7DTGa7vi4&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020010302nasa-26r-3Demail-2D975e-26l-3D009-2Dd05-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=cS1PFikKUbYtwpK5lp7c1qvRKI1-nwfK68W-4M4-Kyl&s=L-f05oi_LHfZVwx5xcoyY-1XzOLRyFo_R7DTGa7vi4&e=>) (1/2, Mosher) “Australia’s raging bushfires are so bad that satellites thousands of miles above Earth can easily spot their flames and smoke from space. ... Himawari-8 launched in October 2014 and weighs about as much as a Ford F-150 pickup truck. It now orbits over the same point about 22,300 miles above our planet. Using a variety of onboard sensors, Himawari-8, NASA’s Suomi NPP satellite, and other Earth-monitoring machines are returning stunning imagery of Australia’s dire situation.”

You’ve Likely Never Heard Of The World’s Greatest Ocean Migration. Satellite Data Is Helping Scientists Study It

Newport News (VA) Daily Press <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020010302nasa-26r-3Demail-2D975e-26l-3D00a-2Da95-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=cS1PFikKUbYtwpK5lp7c1qvRKI1-nwfK68W-4M4-Kyl&s=fXM2jkCz9ecMU7X1O10X2CWMf7UnpW196QWy0A3ENcc&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020010302nasa-26r-3Demail-2D975e-26l-3D00a-2Da95-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=cS1PFikKUbYtwpK5lp7c1qvRKI1-nwfK68W-4M4-Kyl&s=fXM2jkCz9ecMU7X1O10X2CWMf7UnpW196QWy0A3ENcc&e=>) (1/2, Dietrich) “The greatest animal migration on Earth is likely something you never heard of and few have witnessed: legions of tiny marine creatures rising to the ocean surface every night to feed on tiny plants, then sinking back into the deep, dark water at dawn. ... Then, a couple years ago, oceanographers working with NASA Langley Research Center in Virginia discovered that NASA’s CALIPSO orbiting satellite and its lidar instrument—built to study clouds, not oceans—has been collecting data on this



migration on a global scale by happenstance since 2006.”

#### Earth's Glittering Lights Seen From International Space Station

Fox News <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020010302nasa-26r-3Demail-2D975e-26l-3D00b-2D90f-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=cS1PFikKUbytwpK5lp7c1qvRKI1-nwfK68W-4M4-Kyl&s=sfY4zpNWibQfPbZoTT\\_GTkqE023ZsDluxaZl6phRfWE&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020010302nasa-26r-3Demail-2D975e-26l-3D00b-2D90f-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=cS1PFikKUbytwpK5lp7c1qvRKI1-nwfK68W-4M4-Kyl&s=sfY4zpNWibQfPbZoTT_GTkqE023ZsDluxaZl6phRfWE&e=>) (1/2, Carbone) “Stars can be seen sparkling in the night sky in a new image released by NASA. The picture, which was taken as the International Space Station (ISS) orbited 260 miles above our planet, shows the horizon enveloped in an eerie green glow.”

#### Humans in Space

#### NASA Astronaut's Blood Clot In Space Gets Treated By Doctor On Earth

CNET News <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020010302nasa-26r-3Demail-2D975e-26l-3D00c-2D7d0-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=cS1PFikKUbytwpK5lp7c1qvRKI1-nwfK68W-4M4-Kyl&s=uyY\\_C4bT8ymcDO1hK3M-pOlh1arTCGLE3sLinla4NGo&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020010302nasa-26r-3Demail-2D975e-26l-3D00c-2D7d0-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=cS1PFikKUbytwpK5lp7c1qvRKI1-nwfK68W-4M4-Kyl&s=uyY_C4bT8ymcDO1hK3M-pOlh1arTCGLE3sLinla4NGo&e=>) (1/2, Kooser) “It was like Grey’s Anatomy in microgravity. A NASA astronaut developed a blood clot (deep vein thrombosis – DVT) in the jugular vein partway through a long-term mission on the International Space Station. The space agency called in University of North Carolina doctor Stephan Moll, a blood-clot expert, to help develop a treatment plan for the tricky situation.”

#### UNC Expert Helps Treat Astronaut's Blood Clot During NASA Mission

Phys (UK) <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020010302nasa-26r-3Demail-2D975e-26l-3D00d-2D7d3-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=cS1PFikKUbytwpK5lp7c1qvRKI1-nwfK68W-4M4-Kyl&s=cXWfvR1wq-FpqQXkfXspgqKe4TxKbwOHJr5APerT\\_PI&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020010302nasa-26r-3Demail-2D975e-26l-3D00d-2D7d3-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=cS1PFikKUbytwpK5lp7c1qvRKI1-nwfK68W-4M4-Kyl&s=cXWfvR1wq-FpqQXkfXspgqKe4TxKbwOHJr5APerT_PI&e=>) (1/2) ““My first reaction when NASA reached out to me was to ask if I could visit the International Space Station (ISS) to examine the patient myself,” said Stephan Moll, MD, UNC School of Medicine blood clot expert and long-time NASA enthusiast. ‘NASA told me they couldn’t get me up to space quickly enough, so I proceeded with the evaluation and treatment process from here in Chapel Hill.’”

#### Astronaut Receives Treatment For Blood Clot During ISS Mission

New Atlas <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020010302nasa-26r-3Demail-2D975e-26l-3D00e-2D793-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=cS1PFikKUbytwpK5lp7c1qvRKI1-nwfK68W-4M4-Kyl&s=NA8hG-peIF\\_F8MhD2NYi8w4WXIOFlwpuMiaDLCOO8j0&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020010302nasa-26r-3Demail-2D975e-26l-3D00e-2D793-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=cS1PFikKUbytwpK5lp7c1qvRKI1-nwfK68W-4M4-Kyl&s=NA8hG-peIF_F8MhD2NYi8w4WXIOFlwpuMiaDLCOO8j0&e=>) (1/2, Szondy) “The International Space Station (ISS) almost got an old-fashioned house call after one of the astronauts was diagnosed with a deep vein thrombosis (DVT) in the jugular vein of their neck. The potentially life-threatening blood clot was treated remotely with the help of University of North Carolina Health Care clot expert Dr. Stephan Moll over a three-month period using medicines already aboard the space station.”

#### 2020: The Year Human Spaceflight Returns To The United States (maybe)

CNN <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-)

3D2020010302nasa-26r-3Demail-2D975e-26l-3D00f-2Dba0-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=cS1PFikKUbytwpK5lp7c1qvRKI1-nwfK68W-4M4-Kyl&s=5iCqA2FKYYAlakGudza0EIkGuDmlrRDxnHSNnm-Gtp4&e=> (1/2, Wattles) "It's an often-lamented fact in the space community: Since NASA retired its Space Shuttle program nine years ago, the public lost some of its interest in extraterrestrial happenings. Bold rocket startups, namely Elon Musk's SpaceX, have done quite a bit to capture public attention. And many in the industry are hoping that launching people to space from US soil will usher in a new wave of support for spaceflight."

#### Nobel Prize Winners Talk Secrets Of The Universe With Astronauts In Space

SPACE <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020010302nasa-26r-3Demail-2D975e-26l-3D010-2D17d-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=cS1PFikKUbytwpK5lp7c1qvRKI1-nwfK68W-4M4-Kyl&s=rG85-UOeseOnl44efUhAIBk04pfN0\\_O6lvWsodyQAAI&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020010302nasa-26r-3Demail-2D975e-26l-3D010-2D17d-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=cS1PFikKUbytwpK5lp7c1qvRKI1-nwfK68W-4M4-Kyl&s=rG85-UOeseOnl44efUhAIBk04pfN0_O6lvWsodyQAAI&e=>) (1/2, Howell) "There was some strong hero worship going on between Earth and space recently. On the ground in Sweden on Dec. 6, three Nobel Prize laureates gathered to talk about the universe with none other than two Expedition 61 astronauts orbiting roughly 250 miles (400 kilometers) above Earth: NASA's Jessica Meir, and Italy's Luca Parmitano on the International Space Station."

#### When Did ISS Astronauts Celebrate The Start Of 2020?

BGR <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020010302nasa-26r-3Demail-2D975e-26l-3D011-2Db77-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=cS1PFikKUbytwpK5lp7c1qvRKI1-nwfK68W-4M4-Kyl&s=1oi93y4qflh5muKfWgkQMi-7JOHSjf\\_xVCaCisqu\\_4s&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020010302nasa-26r-3Demail-2D975e-26l-3D011-2Db77-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=cS1PFikKUbytwpK5lp7c1qvRKI1-nwfK68W-4M4-Kyl&s=1oi93y4qflh5muKfWgkQMi-7JOHSjf_xVCaCisqu_4s&e=>) (1/2, Wehner) "Folks, 2020 is here. If you celebrated the new year at midnight of whatever time zone you happen to be located in, you probably rang in 2020 with family and/or friends. Perhaps you were even cuddled up on your couch with your dog, which sounds delightful, but however you chose to celebrate, you did so along with gravity. The high-flying scientists aboard the International Space Station don't have that luxury, or even a time zone to call their own, but they celebrated the big even just the same."

#### Moon to Mars

#### Record-Breaking NASA Astronaut Welcomes Decade Of Artemis With Stunning Moonrise Photo

SPACE <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020010302nasa-26r-3Demail-2D975e-26l-3D012-2D46e-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=cS1PFikKUbytwpK5lp7c1qvRKI1-nwfK68W-4M4-Kyl&s=8n6JOR4Dq5ScMgHx2XVHdk2KAHlaHQAiJZopuak4hVA&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020010302nasa-26r-3Demail-2D975e-26l-3D012-2D46e-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=cS1PFikKUbytwpK5lp7c1qvRKI1-nwfK68W-4M4-Kyl&s=8n6JOR4Dq5ScMgHx2XVHdk2KAHlaHQAiJZopuak4hVA&e=>) (1/2, Gohd) "Record-breaking NASA astronaut Christina Koch welcomed the decade that the U.S. plans to return to the moon with a stunning moonrise photo. Koch, who recently set the record for the longest space mission by a woman, is still aboard the International Space Station and is looking to the future. To celebrate the new year, Koch posted a stunning moonrise photo to Twitter."

#### Solar System and Beyond

NASA Has Big Plans For The 2020s, From Powerful New Space Telescopes To A Hunt For Alien Life On A Moon Of Saturn. Here's The Timeline.

Business Insider <<https://urldefense.proofpoint.com/v2/url?u=http->

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3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=cS1PFikKUbytwpK5lp7c1qvRKI1-nwfK68W-4M4-Kyl&s=-

Vkml3uJaUkFntuAz6bMbl6xHPMrWF1zjtaeaB0FfbA&e=> (1/2, McFall-Johnsen) "NASA's plans for this new decade involve billions of dollars and span millions of miles. And much like the universe, they're only expanding. In 2018, NASA announced plans to send astronauts back to the moon. The agency said it would eventually build a lunar base and springboard to Mars in the years after that."

#### Alien Life Is Out There, But Our Theories May Keep Us From Seeing It

The Conversation <[https://urldefense.proofpoint.com/v2/url?u=http-](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020010302nasa-26r-3Demail-2D975e-26l-3D014-2Dcad-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=cS1PFikKUbytwpK5lp7c1qvRKI1-nwfK68W-4M4-Kyl&s=-ZDMf-ywSxqv-KnvzKOa8_ehuyQvyeuMamuS6OZ7hpac&e=>)

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3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=cS1PFikKUbytwpK5lp7c1qvRKI1-nwfK68W-4M4-Kyl&s=ZDMf-ywSxqv-

KnvzKOa8\_ehuyQvyeuMamuS6OZ7hpac&e=> (1/2, Vickers) "If we discovered evidence of alien life, would we even realize it? Life on other planets could be so different from what we're used to that we might not recognize any biological signatures that it produces. ... And with missions such as NASA's TESS exoplanet hunter this trend will continue."

#### Quadrantid Meteor Shower 2020: When, Where & How To See It

SPACE <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020010302nasa-26r-3Demail-2D975e-26l-3D015-2D82f-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=cS1PFikKUbytwpK5lp7c1qvRKI1-nwfK68W-4M4-Kyl&s=7kaFCfCHV-oxkL0EN0GsfMGpxApmHbn8hWEeLXwkkw&e=>)

3D2020010302nasa-26r-3Demail-2D975e-26l-3D015-2D82f-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=cS1PFikKUbytwpK5lp7c1qvRKI1-nwfK68W-4M4-Kyl&s=7kaFCfCHV-

oxkL0EN0GsfMGpxApmHbn8hWEeLXwkkw&e=> (1/2, Howell, Weitering) "2020 will be a decent year to see the annual Quadrantid meteor shower during its sharp peak overnight on Thursday (Jan. 3) and into the early morning hours of Friday (Jan. 4). ... 'A lot of meteor showers last days — the Quadrantids last a few hours,' NASA meteor expert Bill Cooke told Space.com. As many as 100 Quadrantid meteors can be seen some years during the peak when Earth plows through the thickest part of the debris stream, Cooke said, but only if skies are dark enough. Because they're faint, it's easy to miss many of the Quadrantids streaking across the sky."

#### How To See The Quadrantid Meteor Shower Bring In 2020 With A Blast

CNET News <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020010302nasa-26r-3Demail-2D975e-26l-3D016-2D9de-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=cS1PFikKUbytwpK5lp7c1qvRKI1-nwfK68W-4M4-Kyl&s=b8AaaqiTXSfXSmMyAAD7xjteKMggg-RglY8BjsAd54&e=>)

3Fm-3D2020010302nasa-26r-3Demail-2D975e-26l-3D016-2D9de-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=cS1PFikKUbytwpK5lp7c1qvRKI1-nwfK68W-4M4-

Kyl&s=b8AaaqiTXSfXSmMyAAD7xjteKMggg-RglY8BjsAd54&e=> (1/2, Mack) "This weekend starts with the Quadrantid meteor shower, just days after 2020 kicked off. ... The Quadrantids come in hot and heavy, racing through the atmosphere at 25.5 miles (41 kilometers) per second, according to NASA."

#### The Quadrantid Meteor Shower Will Light Up The Sky This Weekend. Here's How To Watch.

CBS News <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020010302nasa-26r-3Demail-2D975e-26l-3D017-2D84f-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=cS1PFikKUbytwpK5lp7c1qvRKI1-nwfK68W-4M4-Kyl&s=HF67oLXsnzuKcN_BPCMKR4Ak9Xczt2rFxBILGcUjGY&e=>)

3Fm-3D2020010302nasa-26r-3Demail-2D975e-26l-3D017-2D84f-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=cS1PFikKUbytwpK5lp7c1qvRKI1-nwfK68W-4M4-

Kyl&s=HF67oLXsnzuKcN\_BPCMKR4Ak9Xczt2rFxBILGcUjGY&e=> (1/2, Lewis) "One of the shortest and strongest

meteor showers of the year will streak across the night sky this weekend, marking the first major meteor shower of 2020. The Quadrantid meteor shower is expected to peak Friday night into Saturday morning. What are the Quadrantids? ... According to NASA, it is considered to be one of the best annual meteor showers.”

Eyes To The Sky: The Quadrantid Meteor Shower Will Brighten The Sky Early Saturday With ‘Dazzling Display’

USA Today <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020010302nasa-26r-3Demail-2D975e-26l-3D018-2Dce6-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=cS1PFikKUbytwpK5lp7c1qvRKI1-nwfK68W-4M4-Kyl&s=pnQJT4yfYrdVBB7JR3XMXWIIAD1PIkaOSSlqfAWICTs&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020010302nasa-26r-3Demail-2D975e-26l-3D018-2Dce6-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=cS1PFikKUbytwpK5lp7c1qvRKI1-nwfK68W-4M4-Kyl&s=pnQJT4yfYrdVBB7JR3XMXWIIAD1PIkaOSSlqfAWICTs&e=>) (1/2, Rice) “Folks who brave the cold late Friday night and early Saturday will have the chance to see the first meteor shower of the year, the Quadrantids. ‘All signs are pointing toward a dazzling display in the sky as long as Mother Nature cooperates,’ AccuWeather meteorologist Brian Lada said. During its peak, 60 to as many as 200 Quadrantid meteors an hour can be seen under perfect conditions, according to NASA.”

There's Water On Alien Planets, Just Not As Much As Scientists Thought: Study

SPACE <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020010302nasa-26r-3Demail-2D975e-26l-3D019-2D0af-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=cS1PFikKUbytwpK5lp7c1qvRKI1-nwfK68W-4M4-Kyl&s=XmBQsX2vWogby\\_\\_ax0rb8kMj2ZK7034Rr1ec766kSwl&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020010302nasa-26r-3Demail-2D975e-26l-3D019-2D0af-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=cS1PFikKUbytwpK5lp7c1qvRKI1-nwfK68W-4M4-Kyl&s=XmBQsX2vWogby__ax0rb8kMj2ZK7034Rr1ec766kSwl&e=>) (1/2, Choi) “Water appears both common and unexpectedly scarce in exoplanets — many distant worlds have it, but less of it than predicted, a new study finds. ... Multiple efforts to detect water in Jupiter’s atmosphere, including NASA’s current Juno mission, have faced numerous challenges.”

What Would Happen If You Fell Into A Black Hole?

Popular Science <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020010302nasa-26r-3Demail-2D975e-26l-3D01a-2D039-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=cS1PFikKUbytwpK5lp7c1qvRKI1-nwfK68W-4M4-Kyl&s=venQJtChPTf13M9r651OBfBMGRfwYSzZEyBsp6xXKNQ&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020010302nasa-26r-3Demail-2D975e-26l-3D01a-2D039-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=cS1PFikKUbytwpK5lp7c1qvRKI1-nwfK68W-4M4-Kyl&s=venQJtChPTf13M9r651OBfBMGRfwYSzZEyBsp6xXKNQ&e=>) (1/2, Rubiano) “If you search ‘black hole’ on the internet, at least one of the top results will claim to tell you what could happen if a person fell into one. ... Grab a small object, like a pencil, near you. Got it? Congratulations, you just won a battle against the entire gravitational pull of planet Earth. ‘The gravitational force, of all the forces of nature, is the weakest one,’ says astronomer and NASA astrophysicist Roopesh Ojha.”

Space Tech

NASA’s Next Mars Rover Will Soon Ship To Cape Canaveral Launch Site

Spaceflight Now <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020010302nasa-26r-3Demail-2D975e-26l-3D01b-2D03d-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=cS1PFikKUbytwpK5lp7c1qvRKI1-nwfK68W-4M4-Kyl&s=WhqWxl-iln9tD\\_gOaZrWHXNnirAhejgYAmwGAa2xKgU&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020010302nasa-26r-3Demail-2D975e-26l-3D01b-2D03d-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=cS1PFikKUbytwpK5lp7c1qvRKI1-nwfK68W-4M4-Kyl&s=WhqWxl-iln9tD_gOaZrWHXNnirAhejgYAmwGAa2xKgU&e=>) (1/2, Clark) “Fresh off its first terrestrial test drive, NASA’s Mars 2020 rover was displayed to media last week at the Jet Propulsion Laboratory in California before it’s packed up and

flown across the country to Cape Canaveral in February to begin final launch preparations for liftoff in July. The six-wheeled robot is similar in appearance to NASA's Curiosity rover, which has explored Mars since August 2012, but the Mars 2020 rover carries an upgraded suite of scientific instruments, plus mechanisms to collect, seal and store samples of powder drilled and cored from Martian rocks."

#### Meeting The NASA Mars Rover That Might Find Life On The Red Planet

New Scientist <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020010302nasa-26r-3Demail-2D975e-26l-3D01c-2Db52-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=cS1PFikKUbytwpK5lp7c1qvRKI1-nwfK68W-4M4-Kyl&s=beTvBjnF1E\\_rxzvLeQ4KfckgHR-Vw-D3d9sbb540FRM&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020010302nasa-26r-3Demail-2D975e-26l-3D01c-2Db52-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=cS1PFikKUbytwpK5lp7c1qvRKI1-nwfK68W-4M4-Kyl&s=beTvBjnF1E_rxzvLeQ4KfckgHR-Vw-D3d9sbb540FRM&e=>) (1/2, Crane) "'What you're doing today never happens,' says NASA's David Seidel as the van rumbles along. We are headed to the Spacecraft Assembly Facility at NASA's Jet Propulsion Laboratory in California, where a group of journalists will be allowed to enter the clean room, a place members of the public are almost never allowed to go."

Various

#### WHITTINGTON: Apple TV's 'For All Mankind' Needs More Space Adventure, Less Political Commentary

Daily Caller <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020010302nasa-26r-3Demail-2D975e-26l-3D01d-2Df8b-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=cS1PFikKUbytwpK5lp7c1qvRKI1-nwfK68W-4M4-Kyl&s=slXyr7ktnucVtO9efos2otMH6ZZK8x41JkXgES5wM34&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020010302nasa-26r-3Demail-2D975e-26l-3D01d-2Df8b-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=cS1PFikKUbytwpK5lp7c1qvRKI1-nwfK68W-4M4-Kyl&s=slXyr7ktnucVtO9efos2otMH6ZZK8x41JkXgES5wM34&e=>) (1/2, Whittington) "The Apple TV+ alternate history series 'For All Mankind' has completed its first season, which was rife with political commentary. Its producers should consider focusing less on left-wing commentary and more on space in future seasons. The series, which is based in the 1970s, is premised on the idea that a prolonged space race would have inspired social changes that either did not occur in real life or only much later than depicted. For instance, women become part of the NASA moon program, leading to the passage of the Equal Rights Amendment — after Teddy Kennedy becomes president in 1972."

#### NASA News: Space Agency Outlines Goals For 2020 Including A Launch To Mars

Daily Express (UK) <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020010302nasa-26r-3Demail-2D975e-26l-3D01e-2D980-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=cS1PFikKUbytwpK5lp7c1qvRKI1-nwfK68W-4M4-Kyl&s=1-0ncL57iSCc-69\\_xtEOBXBlNvWb1JTNVTqwpIGNsrA&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020010302nasa-26r-3Demail-2D975e-26l-3D01e-2D980-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=cS1PFikKUbytwpK5lp7c1qvRKI1-nwfK68W-4M4-Kyl&s=1-0ncL57iSCc-69_xtEOBXBlNvWb1JTNVTqwpIGNsrA&e=>) (1/3, Martin) "In a statement titled 'What's Next for NASA?', the space agency has outlined five key areas it wishes to focus on in 2020. The first objective is to continue its progression of its return to the moon in 2024. As part of the Artemis mission, NASA hopes to return astronauts to the moon in 2024 for the first time since 1972 where the space agency will establish a lunar colony."

#### Top 2020 Vacation Destinations In The US, Abroad

Fox Business <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020010302nasa-26r-3Demail-2D975e-26l-3D01f-2D988-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=cS1PFikKUbytwpK5lp7c1qvRKI1-nwfK68W-4M4-Kyl&s=aUT3vhDXd1MvRpues2zj73O8u\\_C6t8-z\\_ypfeTleTII&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020010302nasa-26r-3Demail-2D975e-26l-3D01f-2D988-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=cS1PFikKUbytwpK5lp7c1qvRKI1-nwfK68W-4M4-Kyl&s=aUT3vhDXd1MvRpues2zj73O8u_C6t8-z_ypfeTleTII&e=>) (1/2, Moore) "Now that the new year is here, people are ready to plan their next vacation. ... Cape Canaveral will have an influx of tourism in July since NASA's Mars 2020

Exploration Program is set to launch from its renowned Air Force Station. For nature lovers, however, the city has three protected areas, including the Canaveral National Seashore, Merritt Island National Wildlife Refuge and Sebastian Inlet State Park.”

Aerospace Tech: Rocket Leads Twitter Mentions In November 2019

Aerospace Technology <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020010302nasa-26r-3Demail-2D975e-26l-3D020-2D0ba-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=cS1PFikKUbytwpK5lp7c1qvRKI1-nwfK68W-4M4-Kyl&s=HMCJfVeZbTJZ\\_JDPpsGou-72xV9v\\_eSjjEO1MGqGPKQ&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020010302nasa-26r-3Demail-2D975e-26l-3D020-2D0ba-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=cS1PFikKUbytwpK5lp7c1qvRKI1-nwfK68W-4M4-Kyl&s=HMCJfVeZbTJZ_JDPpsGou-72xV9v_eSjjEO1MGqGPKQ&e=>) (1/2) “1. Rocket – 508 mentions The historical launch of the Mars Curiosity Rover as well as recent rocket launches including the Electron booster, Soyuz 2-1v and Ariane 5 were popular topics of discussion across Twitter during the month. The Mars Curiosity Rover was launched on November 26th, 2011 on-board a United Launch Alliance Atlas V rocket. The vehicle completed seven years in space and is still performing well after 2,597 sols (solar days on Mars), according to NASA History Office.”

Space Launch Calendar 2020: Sky Events, Missions & More

SPACE <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020010302nasa-26r-3Demail-2D975e-26l-3D021-2D6c5-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=cS1PFikKUbytwpK5lp7c1qvRKI1-nwfK68W-4M4-Kyl&s=AG9m-raITtO6L3XhWmEX0T7JGfM8Tm3RFtYiPFkhPIY&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020010302nasa-26r-3Demail-2D975e-26l-3D021-2D6c5-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=cS1PFikKUbytwpK5lp7c1qvRKI1-nwfK68W-4M4-Kyl&s=AG9m-raITtO6L3XhWmEX0T7JGfM8Tm3RFtYiPFkhPIY&e=>) (1/2, Weitering) “Watch NASA webcasts and other live launch coverage on our ‘Watch Live’ page, and see our night sky webcasts here. Find out what’s up in the night sky this month with our visible planets guide and skywatching forecast. Wondering what happened today in space history? Check out our ‘On This Day in Space’ video show here!”

UFO Sighting: Anomaly Spotted In Space Shuttle Atlantis Photo Sparks NASA Conspiracy Claim

Daily Express (UK) <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020010302nasa-26r-3Demail-2D975e-26l-3D022-2D21c-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=cS1PFikKUbytwpK5lp7c1qvRKI1-nwfK68W-4M4-Kyl&s=OdIOISIQ0xZsvn0uQpZYq6e31sKitegraglmM6Ppt3o&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020010302nasa-26r-3Demail-2D975e-26l-3D022-2D21c-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=cS1PFikKUbytwpK5lp7c1qvRKI1-nwfK68W-4M4-Kyl&s=OdIOISIQ0xZsvn0uQpZYq6e31sKitegraglmM6Ppt3o&e=>) (1/2, Fish) “Self-styled alien expert Scott Waring took to his etdatabase.com blog to speculate about the bizarre find. He said: ‘I found what I believe to be a UFO passing below the Space Shuttle Atlantis while in Earth’s orbit.’ The conspiracy theorist believes this image to be only the latest in a NASA archive which allegedly included evidence of the notorious Black Knight satellites.”

Apollo 11 Astronaut’s Moon Landing Confession Exposed: ‘Put It On My Gravestone!’

Daily Express (UK) <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020010302nasa-26r-3Demail-2D975e-26l-3D023-2D97b-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=cS1PFikKUbytwpK5lp7c1qvRKI1-nwfK68W-4M4-Kyl&s=AyrLeD5TOOqlxdSSHw-Yb\\_dg0B3N-jgFk9rwYUIKLCA&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020010302nasa-26r-3Demail-2D975e-26l-3D023-2D97b-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=cS1PFikKUbytwpK5lp7c1qvRKI1-nwfK68W-4M4-Kyl&s=AyrLeD5TOOqlxdSSHw-Yb_dg0B3N-jgFk9rwYUIKLCA&e=>) (1/2, Hoare) “On July 20, 1969, NASA completed the seemingly impossible Apollo 11 mission to put the first two men – Neil Armstrong and Buzz Aldrin – on the Moon. Mr Armstrong made history, jumping off the lunar lander Eagle and delivering his legendary ‘one small step’ speech to the millions watching back on Earth, before shortly being joined by Mr Aldrin on the lunar surface.”

## Hubble Space Telescope May Star On 2020 American Innovation Coin

SPACE <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020010302nasa-26r-3Demail-2D975e-26l-3D024-2D45d-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=cS1PFikKUbytwpK5lp7c1qvRKI1-nwfK68W-4M4-Kyl&s=621-liF1bUleVNB9RvHiSdbuHut37L3EGYEEwGlaGaw&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020010302nasa-26r-3Demail-2D975e-26l-3D024-2D45d-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=cS1PFikKUbytwpK5lp7c1qvRKI1-nwfK68W-4M4-Kyl&s=621-liF1bUleVNB9RvHiSdbuHut37L3EGYEEwGlaGaw&e=>) (1/2, Pearlman) “The United States Mint may issue a 2020 coin that highlights the vision that has gone into operating the Hubble Space Telescope for 30 years. The golden dollar, if approved, will be part of the U.S. Mint’s American Innovation \$1 Coin Program. Introduced in 2018, the multi-year series honors innovation and innovators by issuing one dollar coins representing each of the 50 U.S. states, the District of Columbia and the five U.S. territories. ‘Managed by teams at NASA’s Goddard Space Flight Center and the Space Telescope Science Institute, both located in Maryland, the Hubble Space Telescope is one of the largest and most versatile space telescopes,’ April Stafford, director of the U.S. Mint’s Office of Design Management, said at a recent meeting of the Citizens Coinage Advisory Committee (CCAC).”

## Science Center For NW Arkansas Remains On Launchpad

Arkansas Democrat Gazette <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020010302nasa-26r-3Demail-2D975e-26l-3D025-2D5e4-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=cS1PFikKUbytwpK5lp7c1qvRKI1-nwfK68W-4M4-Kyl&s=I4BjfoKZGw0IDyWHO\\_bL0ZtqyC4iqQO8pNYIC7QOyY&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020010302nasa-26r-3Demail-2D975e-26l-3D025-2D5e4-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=cS1PFikKUbytwpK5lp7c1qvRKI1-nwfK68W-4M4-Kyl&s=I4BjfoKZGw0IDyWHO_bL0ZtqyC4iqQO8pNYIC7QOyY&e=>) (1/2, Perozek) “The leader of a group trying to build a science center in Northwest Arkansas believes 2020 will be a big year in the project’s development. ... Lane was part of a three-person team in 2018 winning a NASA competition to design a habitat for humans on Mars. NWA Space’s science center is the kind of place he wishes he had access to when he was growing up in Louisiana, he said.”

## Hubble Team Produces 30th Anniversary Calendar For 2020

Sci-News <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020010302nasa-26r-3Demail-2D975e-26l-3D026-2Df9f-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=cS1PFikKUbytwpK5lp7c1qvRKI1-nwfK68W-4M4-Kyl&s=M-7rRHD4SdvgW1yazbexPYINavkS740IDNwd-uG9xqU&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020010302nasa-26r-3Demail-2D975e-26l-3D026-2Df9f-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=cS1PFikKUbytwpK5lp7c1qvRKI1-nwfK68W-4M4-Kyl&s=M-7rRHD4SdvgW1yazbexPYINavkS740IDNwd-uG9xqU&e=>) (1/2) “In September 2019, the Hubble team announced a social media initiative to celebrate three decades of success in discoveries with the NASA/ESA Hubble Space Telescope. The campaign showcased 30 hidden gems from the Hubble image archive. The 12 images that received the most likes were compiled to produce a special 30th Anniversary Calendar for 2020.”

## Other

### This May Be A Transcendent Year For SpaceX

Ars Technica <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020010302nasa-26r-3Demail-2D975e-26l-3D027-2D382-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=cS1PFikKUbytwpK5lp7c1qvRKI1-nwfK68W-4M4-Kyl&s=FLDWXP-slpHYO0thnb1lnSr5SHEKQjcVp0J5lvtoM34&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020010302nasa-26r-3Demail-2D975e-26l-3D027-2D382-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=cS1PFikKUbytwpK5lp7c1qvRKI1-nwfK68W-4M4-Kyl&s=FLDWXP-slpHYO0thnb1lnSr5SHEKQjcVp0J5lvtoM34&e=>) (1/2, Berger) “In the early years of SpaceX at its first factory in El Segundo, the company had a mock-up of a spacecraft that it intended to one day take humans into space. The company’s engineers called the capsule Magic Dragon, an allusion to the folk song ‘Puff, the Magic Dragon.’ The dope

name didn't stick—but the aspiration to launch humans into space has remained among SpaceX's big goals since its founding in 2002.”

#### Astronomers Say SpaceX's Satellites Are Too Bright In The Sky. Friday's Launch Will Try To Fix That

Orlando (FL) Sentinel <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020010302nasa-26r-3Demail-2D975e-26l-3D028-2De67-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=cS1PFikKUbytwpK5lp7c1qvRKI1-nwfK68W-4M4-Kyl&s=XaAYtcnJMKeaLjwDZrcirUZBOKJpPnZn5Wqoyuwx3AQ&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020010302nasa-26r-3Demail-2D975e-26l-3D028-2De67-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=cS1PFikKUbytwpK5lp7c1qvRKI1-nwfK68W-4M4-Kyl&s=XaAYtcnJMKeaLjwDZrcirUZBOKJpPnZn5Wqoyuwx3AQ&e=>)> (1/2, Herrera) “They were seen sparkling across the skies of Montana right around Christmas: a tidy row of lights that some mistook to be UFOs. The glowing celestial train has been spotted in California, Texas, in the Netherlands and even Chile. And it has astronomers worried. Because the twinkling lights are not stars, planets or the faint objects hunted by observatories. They're satellites, the first 120 in a constellation that could one day number in the tens of thousands if everything goes as planned for SpaceX.”

#### SpaceX Now Targeting New Date For Starlink Launch From Cape Canaveral

Florida Today <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020010302nasa-26r-3Demail-2D975e-26l-3D029-2Dcf0-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=cS1PFikKUbytwpK5lp7c1qvRKI1-nwfK68W-4M4-Kyl&s=27kgOVVpSPySRrPjtxhRfckjXADXBbLgTsjmU6GP8jY&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020010302nasa-26r-3Demail-2D975e-26l-3D029-2Dcf0-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=cS1PFikKUbytwpK5lp7c1qvRKI1-nwfK68W-4M4-Kyl&s=27kgOVVpSPySRrPjtxhRfckjXADXBbLgTsjmU6GP8jY&e=>)> (1/2, Kelly) “SpaceX is now targeting no earlier than next week for the Space Coast's first launch of the year, the result of inclement weather expected to roll in over the next several days. Teams are looking to launch a Falcon 9 rocket with 60 Starlink internet communications satellites from Cape Canaveral Air Force Station no earlier than 9:09 p.m. Monday night. Launch Complex 40 will host the attempt.”

#### The First-Ever Mission To Clean Up Space Junk Has Been Announced, Critics Fear The Tech Could Be Weaponized

Inquisitr <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020010302nasa-26r-3Demail-2D975e-26l-3D02a-2D49e-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=cS1PFikKUbytwpK5lp7c1qvRKI1-nwfK68W-4M4-Kyl&s=ZAH-wUCXUpt1UiDikN1MT\\_jM8oPHj6lr5pfv2mL6yjj&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020010302nasa-26r-3Demail-2D975e-26l-3D02a-2D49e-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=cS1PFikKUbytwpK5lp7c1qvRKI1-nwfK68W-4M4-Kyl&s=ZAH-wUCXUpt1UiDikN1MT_jM8oPHj6lr5pfv2mL6yjj&e=>)> (1/2, Homer) “For the first time, a mission to clean up space junk has been planned, with a European craft scheduled to retrieve a derelict satellite in 2025, The Daily Beast reports. Critics fear that the technology could be used as a weapon by rogue regimes or terrorist groups. Space junk has bedeviled the space exploration community for decades. Tens of thousands of pieces of orbital debris, from chips of paint to Apollo-era equipment to defunct satellites the size of school buses, lurk about up there.”

#### India Says It Will Try Again To Land On Moon

UPI <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020010302nasa-26r-3Demail-2D975e-26l-3D02b-2D317-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=cS1PFikKUbytwpK5lp7c1qvRKI1-nwfK68W-4M4-Kyl&s=WVCQybs\\_KEEyKRXbUacJ-Oa-8a0KYRHxHCeMhWCud0&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020010302nasa-26r-3Demail-2D975e-26l-3D02b-2D317-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=cS1PFikKUbytwpK5lp7c1qvRKI1-nwfK68W-4M4-Kyl&s=WVCQybs_KEEyKRXbUacJ-Oa-8a0KYRHxHCeMhWCud0&e=>)> (1/2, Hughes) “The Indian Space Research Organization chairman Kailasavadivoo Sivan said the country will move ahead with a new space mission to the moon despite a failed attempt in 2019. The Chandrayaan-3 space mission, set to take place no later than early 2021, will include an upgraded space vehicle with a new propulsion module, moon lander and rover, Sivan said on Wednesday.”



## SpaceX's 2020 Ambitions Tempered By 2019 Outcomes

Space News <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020010302nasa-26r-3Demail-2D975e-26l-3D02c-2Db45-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=cS1PFikKUbytwpK5lp7c1qvRKI1-nwfK68W-4M4-Kyl&s=C6Gfs3oJUGGGb7c0cC4YThPflHUQ9QMXnnvkJHXAb-Q&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020010302nasa-26r-3Demail-2D975e-26l-3D02c-2Db45-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=cS1PFikKUbytwpK5lp7c1qvRKI1-nwfK68W-4M4-Kyl&s=C6Gfs3oJUGGGb7c0cC4YThPflHUQ9QMXnnvkJHXAb-Q&e=>) (1/3, Foust) "SpaceX enters 2020 with ambitious launch, spacecraft and other plans, but those expectations are modulated by what that company achieved, and didn't achieve, in 2019. SpaceX is scheduled to perform its first launch of 2020 Jan. 6, when a Falcon 9 launches a third set of 60 Starlink satellites. That launch will be one of as many as four launches the company carries out in January, including two other Starlink missions and an in-flight abort test of the company's Crew Dragon spacecraft, currently set for Jan. 11."

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## [EXTERNAL] NASA Morning Briefing for Friday, July 9, 2021

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Editor's Note

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#### Top Stories

Richard Branson Races Jeff Bezos To Space As Covid-19 Hits Business Back On Earth

Wall Street Journal

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104&t=c&data=04|01|randy.c.cruz@nasa.gov|e51d356599c7474eafd408d942c88834|7005d45845be48ae8140d43da96dd17b|0|0|637614251321749316|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQljojV2luMzliLCJBTiI6I6k1haWwiLCJXVCi6Mn0=|1000&sdata=CHYggAG7NIHe4RIxLR/WHfc0gd4ZFO9Afur+tnh01iw=&reserved=0> (7/8)

“Richard Branson hopes to beat Jeff Bezos into space this Sunday with the sort of high-profile act that made the British billionaire famous and helped him build his Virgin Group into a global brand. Back on the ground, Mr. Branson’s business empire—straddling airlines, cruise ships, hotels and gyms—is trying to recover from the economic hit that many tourism and travel-focused businesses have suffered during the pandemic.”

Will Richard Branson Actually Reach Space On Virgin Galactic’s 1st Fully Crewed Launch?

SPACE

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3b2&t=c&data=04|01|randy.c.cruz@nasa.gov|e51d356599c7474eafd408d942c88834|7005d45845be48ae8140d43da96dd17b|0|0|637614251321749316|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQljojV2luMzliLCJBTiI6I6k1haWwiLCJXVCi6Mn0=|1000&sdata=+708QavaQjPmabfJzhMCOyOXascMHh6uu4N5zLVY2wY=&reserved=0> (7/8,

Wall) “As the commercial race to suborbital space has heated up in the past few years, a tricky question has popped up again and again: Where does outer space begin? This is not just a philosophical debate. It has real-world financial implications, because one space tourism company is selling seats on missions that may not reach the final frontier, depending on where you think the boundary lies.”

SpaceX Dragon Cargo Ship Departs Space Station After Stormy Delays

SPACE

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ad0&t=c&data=04|01|randy.c.cruz@nasa.gov|e51d356599c7474eafd408d942c88834|7005d45845be48ae8140d43da96dd17b|0|0|637614251321759275|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQljojV2luMzliLCJBTiI6I6k1haWwiLCJXVCi6Mn0=|1000&sdata=9zf8+0Gg8wJcigID4x5U6TFGrGIR3VNHcs6SROxjvO4=&reserved=0> (7/8,

Howell) “A storm-delayed SpaceX spacecraft bid farewell to the International Space Station (ISS) on Thursday (July 8) for the journey back to Earth. The CRS-22 Dragon cargo ship undocked from the station’s Harmony module at 10:40 a.m. EDT (1440 GMT), departing for a return to Earth and an eventual arrival in the Gulf of Mexico off the coast of Tallahassee, Florida.”

Launch Of Russian ISS Module Slips To July 21

Aviation Week

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ddd&t=c&data=04|01|randy.c.cruz@nasa.gov|e51d356599c7474eafd408d942c88834|7005d45845be48ae8140d43da96dd17b|0|0|637614251321759275|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQljojV2luMzliLCJBTiI6I6k1haWwiLCJXVCi6Mn0=|1000&sdata=5dtkq3NY8bd8led0RT7XfVcyNOdRiwbJwyTFvLbXS7c=&reserved=0> (7/8) “The

launch of a Proton-M heavy-lift rocket carrying Nauka—the new scientific module for the Russian segment of the International Space Station (ISS)—has been delayed from July 15 to July 21 due to technical issues, Roscosmos State Corporation said July 8 . Liftoff from the Baikonur Cosmodrome...”

Supply Chain, Artemis Program Limit SLS Use For Science Missions

## Space News

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## Flight

No content.

## Earth

### NASA Tracks Ominous Siberian Wildfires In Smoke-Filled Views From Space

## CNET News

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### JAXA-NASA Cooperation In Addressing The Climate Challenge

## Space News

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## Humans in Space

### Will Richard Branson Actually Reach Space On Virgin Galactic’s 1st Fully Crewed Launch?

SPACE

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Richard Branson Races Jeff Bezos To Space As Covid-19 Hits Business Back On Earth

Wall Street Journal

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How To Watch Virgin Galactic Launch Billionaire Richard Branson To Space On Sunday

SPACE

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Billionaire Blastoff: Rich Riding Own Rockets Into Space

AP

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Billionaire Richard Branson Is Set To Beat Jeff Bezos To Space On Sunday. Their Launches Will Differ In 3 Big Ways.

Insider

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021070902nasa&r=email-f86e&l=00e-786&t=c&data=04|01|randy.c.cruz@nasa.gov|e51d356599c7474eafd408d942c88834|7005d45845be48ae8140d43da96dd17b|0|0|637614251321799098|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQljojV2luMzliLCJBTiI6k1haWwiLCJXVCi6Mn0=|1000&sdata=3eTNqKtioQriURGTKnF8liEEh2tVd6isPr/9PDRc+iQ=&reserved=0>> (7/8, McFall-Johnsen) “The billionaire Richard Branson plans to rocket to the edge of space aboard his company’s space plane this weekend. The Virgin Galactic vehicle, called SpaceShipTwo, won’t blast off from a launchpad. Instead, it gets carried aboard a double-fuselage mothership, which climbs to about 50,000 feet, or nearly 10 miles, then releases the space plane. The pilots then must fire the plane’s rockets, point almost straight upward, and accelerate to more than three times the speed of sound toward the edge of space.”

Virgin Galactic’s SpaceShip III, A More Durable Spaceplane

Astronomy News

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Richard Branson Says Sunday Spaceflight Will Turn ‘Dream Into Reality’

Fox Business

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Watch Live As Richard Branson Flies To The Edge Of Space Aboard A Virgin Galactic Rocket Plane On Sunday

Insider

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three times since December 2018. But two of those flights involved only Virgin Galactic pilots. Only one of the flights carried a passenger.”

#### Jeff Bezos And Richard Branson Face Pushback On Social Media About Their Planned Space Flights

Forbes

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#### 8 Pivotal Moments From NASA’s Space Shuttle Program

CNN

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#### Ten Years After Last Shuttle Mission, Space Looks Brighter Than Ever From Brevard

Florida Today

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#### SpaceX Dragon Cargo Ship Departs Space Station After Stormy Delays

SPACE

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for the journey back to Earth. The CRS-22 Dragon cargo ship undocked from the station's Harmony module at 10:40 a.m. EDT (1440 GMT), departing for a return to Earth and an eventual arrival in the Gulf of Mexico off the coast of Tallahassee, Florida."

#### Cargo Dragon Preparing For Splashdown To Complete SpaceX CRS-22 Mission

NASA Space Flight

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#### SpaceX Cargo Dragon Makes Weather-Delayed ISS Departure

Aviation Week

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#### SpaceX Dragon Departs ISS, Targeting Gulf Of Mexico Splashdown Near Florida

Florida Today

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#### NASA Live Stream Shows 'fleet Of 10 UFOs' Near International Space Station

Daily Mirror (UK)

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haWwiLCJXVCi6Mn0=|1000&sdata=Lg4YiFuMd46RzBut5DokrAzLww/Zz5JlvXcljpu4Ogl=&reserved=0> (7/8, Hanlon)  
“Images of ten mysterious black objects circling around the International Space Station have been spotted by a star gazer. Now conspiracy theorists are wondering due to their pattern above the Southern Atlantic Ocean whether they could be UFO ‘s which are following the Space Station. The footage from the NASA live stream show orb-like objects which have caused plenty of discussion among space enthusiasts on social media.”

#### Launch Of Russian ISS Module Slips To July 21

Aviation Week

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“The launch of a Proton-M heavy-lift rocket carrying Nauka—the new scientific module for the Russian segment of the International Space Station (ISS)—has been delayed from July 15 to July 21 due to technical issues, Roscosmos State Corporation said July 8 . Liftoff from the Baikonur Cosmodrome...”

#### Russia To Launch New International Space Station Module

AP

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“The long-delayed Russian module for the International Space Station is set to be finally launched this month, but the date has been pushed back several days, the head of the country’s space corporation said Thursday. Roscosmos director Dmitry Rogozin said on Twitter that the Nauka (Science) module is now scheduled to be launched from the Russian launch facility in Baikonur, Kazakhstan on July 21. The following two days could serve as reserve dates for the launch.”

#### NASA Marks 10 Years Since Space Shuttle Program

WKMG-TV Orlando (FL)

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“NASA is marking 10 years since the end of the Space Shuttle era. Space shuttle Atlantis blasted off from launch pad 39 a for the last time on July 8, 2011.”

#### Richard Branson Says He Isn't In A Race With Jeff Bezos. But, Like, Come On

CNN Business

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Morrow) “This weekend, Richard Branson, the founder of Virgin Galactic, is attempting to become the first billionaire to strap himself to a rocket branded with the company he founded and hurtle himself into space. If all goes as planned, Branson’s flight will beat fellow space baron Jeff Bezos’s trip by just nine days. (Branson swears he didn’t time his trip to beat Bezos but, like, come on.)”

#### Branson And Bezos In Space: How Their Rocket Ships Compare

Financial Times

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#### Wally Funk, A Lifelong Aspiring Astronaut, Will Finally Head To Space At 82

NPR

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021070902nasa&r=email-f86e&l=01f-0b4&t=c&data=04|01|randy.c.cruz@nasa.gov|e51d356599c7474eafd408d942c88834|7005d45845be48ae8140d43da96dd17b|0|0|637614251321888709|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikl1haWwiLCJXVCi6Mn0=|1000&sdata=ZKbzGituRHbGxjOzB9C/CUbgGq4U01Gr8H/Cx8fWE0d8=&reserved=0>> (7/9) “Wally Funk has been hoping for a long time to go to space. Later this month, the 82-year-old pilot and flight instructor will finally head there. In 1961, Funk was among a group of female pilots testing whether women were fit for space travel. They became known as the Mercury 13, and they passed many of the same tests as the men. But the program was canceled, and Funk was never accepted by NASA.”

#### Moon to Mars

#### Ten Years On, Northrop Grumman Reflects On Changes To Solid Rocket Motors From Shuttle To SLS Era

NASA Space Flight

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#### Supply Chain, Artemis Program Limit SLS Use For Science Missions

Space News

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2d1&t=c&data=04|01|randy.c.cruz@nasa.gov|e51d356599c7474eafd408d942c88834|7005d45845be48ae8140d43da96dd17b|0|0|637614251321898666|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQljojV2luMzliLCJBTiI6IkhhaWwiLCJXVCi6Mn0=|1000&sdata=DxmimYBHRMkmwFY+cSF6Z|4Y+39P4KQx4QwgS1VhndE=&reserved=0> (7/8, Foust) “A limited supply chain and the demands of the Artemis program will prevent the use of the Space Launch System for alternative roles, such as launching science missions, until at least late this decade. In a briefing about the SLS to the steering committee of the planetary science decadal survey July 7, Robert Stough of NASA’s Marshall Space Flight Center said that if scientists are contemplating missions that require the use of the SLS, they should be talking with NASA now to secure manifest slots no earlier than the late 2020s or early 2030s.”

## NASA’s Ingenuity Completes Ninth Flight Despite Massive Challenge

SlashGear

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## NASA Mars Helicopter Pulls Off ‘Nail-Biter’ Ninth Flight Over Rough Terrain

CNET News

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021070902nasa&r=email-f86e&l=023-14e&t=c&data=04|01|randy.c.cruz@nasa.gov|e51d356599c7474eafd408d942c88834|7005d45845be48ae8140d43da96dd17b|0|0|637614251321908621|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQljojV2luMzliLCJBTiI6IkhhaWwiLCJXVCi6Mn0=|1000&sdata=4zOSctp7nrQkauaVaxicpVYfva7REdd7aFKdSygc8BY=&reserved=0>> (7/8, Kooser) “When NASA sent the Ingenuity helicopter to Mars, it was a gamble. Now it’s pushing its limits, flying fast and reaching new heights. NASA announced on Monday that Ingenuity successfully completed its ninth and ‘most challenging’ flight, and we now have the details of what NASA called a ‘nail-biter.’”

## ‘Huge Leap’ For NASA’s Mars Helicopter Ushers New Mission Support Role

The Verge

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## Solar System and Beyond

Cassini Saw Methane In Enceladus’ Plumes. Scientists Don’t Know How It Could Be There Without Life

Universe Today

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## There Are Probably Many More Earth-Sized Worlds Than Previously Believed

Universe Today

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## NASA's Plan To Fix Hubble Gets Some Good News

SlashGear

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Space Tech

No content.

Various

## Interview With NASA Administrator On Commercial Spaceflight

KIAH-TV Houston

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bc7&t=c&data=04|01|randy.c.cruz@nasa.gov|e51d356599c7474eafd408d942c88834|7005d45845be48ae8140d43da96dd17b|0|0|637614251321928533|Unknown|TWFpbGZsb3d8eyJWljoimc4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikh aWwiLCJXVCI6Mn0=|1000&sdata=RLgMhUqdCGxjiToCBMHsLoIOVrnrNPM1fon6dvbg19o=&reserved=0> (7/8)"Well as billionaires fight to lead the space race, NASA is focusing on its own race to space. As it plans its first mission to the moon in more than 50 years, Washington correspondent Kellie Meyer sits down one on one with an interview with the NASA Administrator as they count down to take off."

Other

Jeff Bezos' Blue Origin Is Frustrating One Of Its Closest Partners With Rocket-engine Delays, According To A Report

Insider

<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021070902nasa&r=email-f86e&l=029-c72&t=c&data=04|01|randy.c.cruz@nasa.gov|e51d356599c7474eafd408d942c88834|7005d45845be48ae8140d43da96dd17b|0|0|637614251321938491|Unknown|TWFpbGZsb3d8eyJWljoimc4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikh aWwiLCJXVCI6Mn0=|1000&sdata=Kv/ecfGUglmitwXyj45CFY9uV+GCUFoYdF/iGsg/eU4=&reserved=0> (7/8, Duffy) "Blue Origin's relationship with one of its closest partners, United Launch Alliance, has soured over delays to rocket engines, according to a new Ars Technica report. Blue Origin, Jeff Bezos' aerospace company, is building two engines for ULA's Vulcan rocket. ULA wanted to launch the rocket into space this year, but the engines have been delayed, Ars reported. The Vulcan rocket is a two-stage launch vehicle that is set to send satellites into orbit for the US Space Force."

China's Chang'e 6 Mission Will Collect Lunar Samples From The Far Side Of The Moon By 2024

SPACE

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SpaceX To Launch Advertising Satellite Into Space

redOrbit

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FAA: New Tool Limits Disruptions Caused By Space Operations

AP

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“Federal regulators said Thursday they now can better track rocket launches and space vehicles returning to Earth, which could cut the amount of time that airplanes must be routed around space operations. The Federal Aviation Administration said a new tool automates the near-instantaneous delivery of data about a space vehicle’s flight path to the nation’s air traffic control system.”

#### Virgin Galactic Shares Have Come Too Far Too Fast: BofA’s Epstein

CNBC

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“Sir Richard Branson’s planned spaceflight on Virgin Galactic’s test mission is four days away. Ron Epstein, research analyst at Bank of America, joined “Squawk Box” on Wednesday to discuss why he is warning investors that shares of the space exploration company may have come too far, too fast.”

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Services including embedded Tweets are also subject to Twitter for Website’s information and privacy policies

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## **[EXTERNAL] NASA Morning Briefing for Friday, July 30, 2021**

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International Space Station Thrown Out Of Control By Misfire Of Russian Module -NASA

Reuters

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Boeing Starliner OFT-2 Launch To Space Station Delayed Following Russian Module Mishap

SPACE

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Boeing Space Flight Postponed After Mishap At Space Station

Wall Street Journal

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685&t=c&data=04|01|randy.c.cruz@nasa.gov|5dafcb1c14924fd385ae08d95349004f|7005d45845be48ae8140d43da96dd17b|0|0|637632395284613080|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQljojV2luMzliLCJBTiI6Ikh1haWwiLCJXVCI6Mn0=|1000&sdata=N80ySDM3i+xP5DxMBmUlfEFLPCXsz/WnDNurQI0EFZs=&reserved=0> (7/29, Maidenberg) "The National Aeronautics and Space Administration and Boeing postponed the launch of the company's Starliner space capsule after a Russian vehicle forced the International Space Station into an unexpected slant. The Starliner's launch had been scheduled for Friday afternoon from the Cape Canaveral Space Force Station in Florida. Boeing had spent months preparing for the flight after a December 2019 attempt to send the capsule to dock with the space station failed when a software error sent it to the wrong orbit, among other issues."

#### Einstein Right, Again: Researchers See Light 'Echo' Around Black Hole

NBC News

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#### The U.S. Should Send A President To Space

Wall Street Journal

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Flight

No content.

Earth

#### How NASA Scientists Use Satellite Data To Help Farmers

Fox Business

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loss. In a Wednesday release, the agency said that critical data regarding the Corn Belt region was taken using the Moderate Resolution Imaging Spectroradiometer (MODIS), instruments onboard the Terra and Aqua satellites and the NASA-U.S. Geological Survey's Landsat satellites."

Humans in Space

International Space Station Thrown Out Of Control By Misfire Of Russian Module -NASA

Reuters

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0ba&t=c&data=04|01|randy.c.cruz@nasa.gov|5dafcb1c14924fd385ae08d95349004f|7005d45845be48ae8140d43da96dd17b|0|0|637632395284632991|Unknown|TWfPbGZsb3d8eyJWljoimc4wLjAwMDAiLCJQljoiv2luMzliLCJBTil6lk1haWwiLCJXVCI6Mn0=|1000&sdata=M84PynnYLmdLmAoawzaOPkePzZDNQ2Q/TV+5gbj90O0=&reserved=0> (7/29, Gorman, Ivanova) "The International Space Station (ISS) was thrown briefly out of control on Thursday when jet thrusters of a newly arrived Russian research module inadvertently fired a few hours after it was docked to the orbiting outpost, NASA officials said. The seven crew members aboard – two Russian cosmonauts, three NASA astronauts, a Japanese astronaut and a European space agency astronaut from France – were never in any immediate danger, according to NASA and Russian state-owned news agency RIA."

Russia's Nauka Module Briefly Tilts Space Station With Unplanned Thruster Fire

SPACE

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bdb&t=c&data=04|01|randy.c.cruz@nasa.gov|5dafcb1c14924fd385ae08d95349004f|7005d45845be48ae8140d43da96dd17b|0|0|637632395284642948|Unknown|TWfPbGZsb3d8eyJWljoimc4wLjAwMDAiLCJQljoiv2luMzliLCJBTil6lk1haWwiLCJXVCI6Mn0=|1000&sdata=FVZtHH3jKtGhNWKFFNahDofAetvpSG6y3LxMwiDSJI=&reserved=0> (7/29, Bartels) "Nauka's bumpy ride to the International Space Station didn't get any smoother after the new Russian science module docked on Thursday (July 29). A little over three hours after docking was complete, cosmonauts Oleg Novitsky and Pyotr Dubrov were in the Zvezda module to which Nauka docked, preparing to open the hatch between the two vehicles. Then, at 12:45 p.m. EDT (1645 GMT), thrusters on Nauka fired 'inadvertently and unexpectedly,' according to NASA spokesperson Rob Navias."

Russia's Nauka Space Module Experiences Problem After Docking With ISS

Reuters

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6f7&t=c&data=04|01|randy.c.cruz@nasa.gov|5dafcb1c14924fd385ae08d95349004f|7005d45845be48ae8140d43da96dd17b|0|0|637632395284642948|Unknown|TWfPbGZsb3d8eyJWljoimc4wLjAwMDAiLCJQljoiv2luMzliLCJBTil6lk1haWwiLCJXVCI6Mn0=|1000&sdata=pukq3ZQcmyRgxP1JPc0gxzRxqlUYnfRLaU45UtpmIBI=&reserved=0> (7/29)

"Russian astronauts aboard the International Space Station (ISS) informed mission control in Moscow on Thursday about a problem with the new Russian Nauka module after it docked at the station a few hours earlier, RIA news agency reported. The astronauts flagged an unplanned restart of Nauka's engines, RIA reported, citing conversations between the team and their headquarters on Earth, translated by the NASA space agency."

Russia Has Docked Its New Science Module To The International Space Station, After 14 Years Of Delays

Insider

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785&t=c&data=04|01|randy.c.cruz@nasa.gov|5dafcb1c14924fd385ae08d95349004f|7005d45845be48ae8140d43da96dd17b|0|0|637632395284652904|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6I6k1h aWwiLCJXVCI6Mn0=|1000&sdata=HqOhLd59pAmDpd8chThed1U3PfCqLmi+soimXVV2DsQ=&reserved=0> (7/29, McFall-Johnsen) "Russia has finally delivered a long-awaited science module to the International Space Station. The new module, a 43-foot-long cylinder called Nauka (meaning 'science' in Russian), approached the ISS on Thursday morning. The spaceship inched forward slowly, aligning itself exactly with the ISS port that was waiting to receive it. Its docking system met the port at 9:29 a.m. ET and locked into place, forming a seal so that cosmonauts could open the hatch and access their new facilities."

#### Uncontrolled Firing From Russian Module Causes Brief 'Tug Of War' On International Space Station

The Verge

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#### Russian Module Unexpectedly Fires Thrusters After Docking To ISS

Gizmodo

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#### Watch Live: Russia's Nauka Module Docks At The International Space Station

Gizmodo

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#### Russian Module Suddenly Fires Thrusters After Docking With Space Station

Ars Technica

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021073002nasa&r=email-51d9&l=00g-d64&t=c&data=04|01|randy.c.cruz@nasa.gov|5dafcb1c14924fd385ae08d95349004f|7005d45845be48ae8140d43da96dd17b|0|0|637632395284662864|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6I6k1h aWwiLCJXVCI6Mn0=|1000&sdata=CGHvaRDqEVkvrWv+kj3WkFJIY86gap1NB1hWiP16IOg=&reserved=0>>

73002nasa&r=email-51d9&l=010-ae3&t=c&data=04|01|randy.c.cruz@nasa.gov|5dafcb1c14924fd385ae08d95349004f|7005d45845be48ae8140d43da96dd17b|0|0|637632395284672820|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQljojV2luMzliLCJBTiI6Ikh1aWwiLCJXVCi6Mn0=|1000&sdata=2zYuqWSm6O6gzP6NvNZ2FGD5q5ueCfehza+a5XL2Co=&reserved=0> (7/29, Berger) "Flight controllers at NASA and Roscosmos averted a disaster on Thursday after a large Russian module docked with the International Space Station and began to 'inadvertently' fire its thrusters. The Russian 'Nauka' module linked to the space station at 8:30 am CT (13:30 UTC), local time in Houston, where NASA's Mission Control is based. After that, Russian cosmonauts aboard the station began preparing to open the hatches leading to Nauka, but at 11:34 am Houston time, Nauka unexpectedly started to fire its movement thrusters."

#### What To Know About NASA's Boeing Orbital Flight Test-2

Discovery Channel

<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021073002nasa&r=email-51d9&l=011-36a&t=c&data=04|01|randy.c.cruz@nasa.gov|5dafcb1c14924fd385ae08d95349004f|7005d45845be48ae8140d43da96dd17b|0|0|637632395284672820|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQljojV2luMzliLCJBTiI6Ikh1aWwiLCJXVCi6Mn0=|1000&sdata=sISrkt9KKJrzzbkQZhxedQIlJuOjoE6UrYpuEx0nvgs=&reserved=0> (7/29, Rosenfield) "Boeing is launching its space capsule via a United Launch Alliance, Atlas V rocket this Friday as a test flight with the goal of increasing the number of human spaceflight launches from American soil. The plan is for Starliner to dock with the International Space Station about 24 hours after launch and return to Earth on August 5 with a parachute assisted landing at White Sands Space Harbor in New Mexico. Although there won't be any passengers on board, the Starliner will be carrying about 400 pounds of NASA cargo and crew supplies for the astronauts of Expedition 65, currently living aboard the orbital outpost."

#### Inadvertent Thruster Firings By Nauka Module At ISS Probed

Aviation Week

<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021073002nasa&r=email-51d9&l=012-c65&t=c&data=04|01|randy.c.cruz@nasa.gov|5dafcb1c14924fd385ae08d95349004f|7005d45845be48ae8140d43da96dd17b|0|0|637632395284672820|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQljojV2luMzliLCJBTiI6Ikh1aWwiLCJXVCi6Mn0=|1000&sdata=AeWLdhGt8uOv+mZVqK4ZqKRBvJNDnVpMZFSwdVVPdb4=&reserved=0> (7/29) "Russia's Nauka Multipurpose Laboratory Module began a series of unexpected thruster firings a little over three hours after completing an already suspenseful automated docking with the International Space Station (ISS) early July 29, prompting a temporary but significant loss of attitude for..."

#### International Space Station Reports Scare After Engine Trouble With New Russian Module

Fox News

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#### Newly Arrived Russian Module Knocks International Space Station Off Orientation



Orlando (FL) Sentinel

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New Russian Module Unexpectedly Fires Thrusters After Docking At Space Station

UPI

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International Space Station Briefly Loses Control After New Russian Module Misfires

CNN

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021073002nasa&r=email-51d9&l=016-16e&t=c&data=04|01|randy.c.cruz@nasa.gov|5dafcb1c14924fd385ae08d95349004f|7005d45845be48ae8140d43da96dd17b|0|0|637632395284692730|Unknown|TWfPbGZsb3d8eyJWljoimc4wLjAwMDAiLCJQljoiv2luMzliLCJBTil6lk1haWwiLCJXVCI6Mn0=|1000&sdata=6YDcaaq1oRrulumq50ukivko8fVAuoQZOMr3T+A0Ysk=&reserved=0>> (7/29, Fisher) “An unusual and potentially dangerous situation unfolded Thursday at the International Space Station, as the newly-docked Russian Nauka module inadvertently fired its thrusters causing a ‘tug of war’ with the space station and briefly pushing it out of position, according to NASA flight controllers. Nauka — a long-delayed laboratory module that Russian space agency Roscosmos’ launched to the International Space Station last week — inadvertently fired its thrusters after docking with the International Space Station Thursday morning.”

ISS Crew Safe After Newly Docked Module Unexpectedly Fires Thrusters

CNET News

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021073002nasa&r=email-51d9&l=017-aff&t=c&data=04|01|randy.c.cruz@nasa.gov|5dafcb1c14924fd385ae08d95349004f|7005d45845be48ae8140d43da96dd17b|0|0|637632395284702686|Unknown|TWfPbGZsb3d8eyJWljoimc4wLjAwMDAiLCJQljoiv2luMzliLCJBTil6lk1haWwiLCJXVCI6Mn0=|1000&sdata=1Kc/HhjT7AUUsjFL6nYApvG+HsuXgwKYRzarnSgR05Fw=&reserved=0>> (7/29, Kooser) “First the good news. The Russian-built Nauka laboratory successfully docked with the International Space Station on Thursday morning. Now, the not so good: Nauka ‘inadvertently and unexpectedly’ fired its thrusters after docking, causing the ISS to lose attitude control (aka control over its orientation). According to NASA TV updates, the station went out of orientation by about 45 degrees. Thrusters built into a service module, and a Russian Progress spacecraft docked to the station, were able to correct the problem and bring the ISS back under control.”

New Russian Lab Briefly Knocks Space Station Out Of Position

AP

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021073002nasa&r=email-51d9&l=018-719&t=c&data=04|01|randy.c.cruz@nasa.gov|5dafcb1c14924fd385ae08d95349004f|7005d45845be48ae8140d43da96dd17b|0|0|637632395284702686|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTil6lk1haWwiLCJXVCi6Mn0=|1000&sdata=kGJz10AlyAvCU2re4n1kvwmKF98Bo1FQUdGkZ21tDrE=&reserved=0>> (7/29, Borenstein) "A newly arrived Russian science lab briefly knocked the International Space Station out of position Thursday when it accidentally fired its thrusters. For 47 minutes, the space station lost control of its orientation when the firing occurred a few hours after docking, pushing the orbiting complex from its normal configuration. The station's position is key for getting power from solar panels and or communications. Communications with ground controllers also blipped out twice for a few minutes. Flight controllers regained control using thrusters on other Russian components at the station to right the ship, and it is now stable and safe, NASA said."

#### MLM Nauka Docks To ISS, Malfunctions Shortly Thereafter

##### NASA Space Flight

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021073002nasa&r=email-51d9&l=019-f82&t=c&data=04|01|randy.c.cruz@nasa.gov|5dafcb1c14924fd385ae08d95349004f|7005d45845be48ae8140d43da96dd17b|0|0|637632395284712642|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTil6lk1haWwiLCJXVCi6Mn0=|1000&sdata=F7byY/7jEgnwGvgQxKWotkoED1Jhob37//Az48UfG9s=&reserved=0>> (7/29, Harding) "Russia's Multipurpose Laboratory Module (MLM) Nauka, meaning 'science,' has defied the odds to successfully dock to the ISS after a long and arduous journey dating back over 20 years and a problematic propulsion system after launch which had threatened the success of the mission. The docking was not without issue, with Russian cosmonauts noting that Nauka wasn't on the correct course less than an hour before docking; however, a retro burn quickly corrected the issue."

#### Space Station Stable After Tilting Following The Docking Of New Russian Module

##### Houston Chronicle

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021073002nasa&r=email-51d9&l=01a-ae6&t=c&data=04|01|randy.c.cruz@nasa.gov|5dafcb1c14924fd385ae08d95349004f|7005d45845be48ae8140d43da96dd17b|0|0|637632395284712642|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTil6lk1haWwiLCJXVCi6Mn0=|1000&sdata=qBUUp4d9XGo+V0FvsAH3y/ax4WwrmeNgoRUUzsP5pN4=&reserved=0>> (7/29, Leinfelder) "An expansion to the International Space Station did not go as planned Thursday, causing the orbiting mainstay to tilt significantly. Russia added a 43-foot long, 23-ton module to the space station at 8:29 a.m. CDT. The Nauka science module is the largest space station addition since 2011, and Russia hadn't launched a component of that size since 2000."

#### NASA, Boeing Delay Starliner Launch Attempt After Russian Module Tilts Space Station

##### Orlando (FL) Sentinel

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021073002nasa&r=email-51d9&l=01b-6f9&t=c&data=04|01|randy.c.cruz@nasa.gov|5dafcb1c14924fd385ae08d95349004f|7005d45845be48ae8140d43da96dd17b|0|0|637632395284722597|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTil6lk1haWwiLCJXVCi6Mn0=|1000&sdata=JJ1O4iCWoOamV/nCQfRKUosBdiZDzgdEUF0Hr/TLbk=&reserved=0>> (7/29, Tribou) "NASA, Boeing delay Starliner launch attempt after Russian module tilts space station"

#### Boeing Starliner OFT-2 Launch To Space Station Delayed Following Russian Module Mishap

## SPACE

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021073002nasa&r=email-51d9&l=01c-477&t=c&data=04|01|randy.c.cruz@nasa.gov|5dafcb1c14924fd385ae08d95349004f|7005d45845be48ae8140d43da96dd17b|0|0|637632395284722597|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikh1aWwiLCJXVCi6Mn0=|1000&sdata=fLc37Fs8yN9F8f02LJmY4APmWKkluOo+h45CevS3x8k=&reserved=0>> (7/29, Gohd) “Boeing’s Starliner spacecraft will have to wait to make its triumphant trip to space. Today (July 29), officials at NASA and Boeing announced that Boeing’s uncrewed Orbital Flight Test 2 (OFT-2) mission for its Starliner astronaut taxi will be delayed from Friday (July 30) to Tuesday (Aug. 3). The Aug. 3 liftoff is scheduled to take place at 1:20 p.m. EDT (1720 GMT), NASA Commercial Crew Program manager Steve Stich said in a news conference today. This delay follows a mishap with Russia’s Nauka module, which docked with the International Space Station this morning.”

### NASA Has Delayed Boeing’s Spaceship Flight After A Russian Module Pushed The Space Station Out Of Position

#### Insider

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021073002nasa&r=email-51d9&l=01d-8ea&t=c&data=04|01|randy.c.cruz@nasa.gov|5dafcb1c14924fd385ae08d95349004f|7005d45845be48ae8140d43da96dd17b|0|0|637632395284732554|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikh1aWwiLCJXVCi6Mn0=|1000&sdata=RyIMizGEHPQjr6nPrAb/ZcAJPnoAmnBn8NcjAw+lzg4=&reserved=0>> (7/29, McFall-Johnsen) “A major mishap on the International Space Station has forced NASA and Boeing to delay the company’s planned spaceship flight. Boeing was set to launch its spacecraft, called Starliner, toward the ISS on Friday afternoon and dock there on Saturday. This mission is meant to be Starliner’s last test flight before carrying its first astronauts. Boeing attempted this demonstration flight once before, in December 2019, but failed to reach the ISS due to software issues. Now the company is trying again, hoping to prove to NASA that Starliner is ready to fly astronauts.”

### Boeing’s Starliner Launch Delayed After Space Station Incident

#### ABC News

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021073002nasa&r=email-51d9&l=01e-1ab&t=c&data=04|01|randy.c.cruz@nasa.gov|5dafcb1c14924fd385ae08d95349004f|7005d45845be48ae8140d43da96dd17b|0|0|637632395284732554|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikh1aWwiLCJXVCi6Mn0=|1000&sdata=4xRHPFVsm8qCc9Uq63nAuGYV3nUTKyzWUoFpxgf2/Jg=&reserved=0>> (7/29, Thorbecke) “The Starliner’s shot at redemption after its 2019 flop has been postponed. After a very public failure in 2019, Boeing and its Starliner spacecraft have a shot at redemption with their upcoming second test flight. But it will have to wait for now.”

### Boeing’s Engineering Prowess Faces A Test: Its Starliner Do-over Launch

#### Washington Post

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021073002nasa&r=email-51d9&l=01f-890&t=c&data=04|01|randy.c.cruz@nasa.gov|5dafcb1c14924fd385ae08d95349004f|7005d45845be48ae8140d43da96dd17b|0|0|637632395284742513|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikh1aWwiLCJXVCi6Mn0=|1000&sdata=Gv9RAmApPc34HV/CQ7vSSwHkjEpxG3CfRim3TnZwVmY=&reserved=0>> (7/29) “Boeing isn’t in the clear just yet. The aerospace conglomerate issued a surprisingly positive earnings report on Wednesday revealing that it turned a quarterly profit for the first time in nearly two years. The numbers, lifted by an increase in domestic travel and defense sales, were a bright spot in what had been a business slump following two 737 Max plane crashes, production delays and high-profile aircraft software issues.”

## Boeing Space Flight Postponed After Mishap At Space Station

Wall Street Journal

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## NASA Holds Briefing Ahead Of Starliner Launch

USA Today

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021073002nasa&r=email-51d9&l=021-5db&t=c&data=04|01|randy.c.cruz@nasa.gov|5dafcb1c14924fd385ae08d95349004f|7005d45845be48ae8140d43da96dd17b|0|0|637632395284752468|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6I6k1haWwiLCJXVCi6Mn0=|1000&sdata=QxOXqIoljlaDbahdjkmzet7OqjiJmUSM4UfnK0lk/c4=&reserved=0>> (7/29) “NASA holds briefing ahead of Starliner launch”

## Space Station Mishap Prompts NASA To Postpone Launch Of Boeing Starliner

Reuters

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021073002nasa&r=email-51d9&l=022-bc6&t=c&data=04|01|randy.c.cruz@nasa.gov|5dafcb1c14924fd385ae08d95349004f|7005d45845be48ae8140d43da96dd17b|0|0|637632395284752468|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6I6k1haWwiLCJXVCi6Mn0=|1000&sdata=7ZSSb2LPM+hYFulG89P1YSrXtC0BeE9QR0Q9sVhkp70=&reserved=0>> (7/29, Gorman) “NASA on Thursday postponed a planned launch of a Boeing (BA.N) CST-100 Starliner capsule to the International Space Station after the orbiting outpost was briefly thrown out of control by jet thrusters inadvertently activated on a newly docked Russian module, NASA said. The Starliner launch delay was announced a day before it was due for blastoff from the Kennedy Space Center in Florida atop a Boeing Lockheed Martin Corp (LMT.N) Atlas V rocket. NASA said the space agency and Boeing decided to push back the launch date to Aug. 3, with Aug. 4 set as an immediate backup.”

## Stakes Are High For Boeing Starliner’s 2nd Space Station Try This Week

SPACE

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unexpectedly firing its thrusters, briefly interfering with the station's location. Space.com's full story about that situation is here."

#### Teen Who Flew To Space With Jeff Bezos Has Never Shopped On Amazon (But There's A Reason)

CNBC

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021073002nasa&r=email-51d9&l=024-e04&t=c&data=04|01|randy.c.cruz@nasa.gov|5dafcb1c14924fd385ae08d95349004f|7005d45845be48ae8140d43da96dd17b|0|0|637632395284762424|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikh1aWwiLCJXVCi6Mn0=|1000&sdata=0j+bXq5Xp1U85ri9aowklppVF6lJ4xovGgKdqrTeUL0=&reserved=0>> (7/29) "When Jeff Bezos thanked Amazon customers for essentially paying for his first trip to space, he apparently wasn't talking to Oliver Daemen, the Dutch teen who joined the billionaire on Blue Origin's inaugural passenger spaceflight. That's because the 18-year-old Daemen says he's never actually ordered anything on Amazon before."

#### Famous Sayings From The Race To Space Billionaires

Forbes

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021073002nasa&r=email-51d9&l=025-084&t=c&data=04|01|randy.c.cruz@nasa.gov|5dafcb1c14924fd385ae08d95349004f|7005d45845be48ae8140d43da96dd17b|0|0|637632395284762424|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikh1aWwiLCJXVCi6Mn0=|1000&sdata=wQ/FW5qX1T6l44cmQrrEKW0obHGxWvxsayb4x2ppVSo=&reserved=0>> (7/29, Powell) "The best ideas can often be summarised in a single sentence – known in Hollywood as 'the elevator pitch'. This is particularly true in today's world of business celebrities and social media, where quotes and mottos have become almost as famous as those who said them. While these snapshots can provide a great deal of motivation and guidance, in some cases they can be too much of an oversimplification. Three individuals who are firmly in the public eye are the billionaires and their race to space: Richard Branson, Jeff Bezos and Elon Musk. All with unique and well known journeys into their successful careers, they have generated a number of stand out quotes over the years."

#### Astronaut Shares Photos Of Progress 77 And Pirs Burning Up In The Atmosphere

SlashGear

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021073002nasa&r=email-51d9&l=026-841&t=c&data=04|01|randy.c.cruz@nasa.gov|5dafcb1c14924fd385ae08d95349004f|7005d45845be48ae8140d43da96dd17b|0|0|637632395284772379|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikh1aWwiLCJXVCi6Mn0=|1000&sdata=05bh83/en93/UG3rZ7NqKN9pjStj+CtSJ4P1xIX3G5A=&reserved=0>> (7/29, McGlaun) "Astronaut Thomas Pesquet is currently aboard the ISS and often has his Nikon D5 camera handy. The astronaut has in the past shared some beautiful images of the Earth from orbit. Recently, he shared some images of the Russian DC1 Pirs docking module and the Progress 77 cargo spacecraft burning up in the atmosphere."

#### Starliner Launch Delay

WKMG-TV Orlando (FL)

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021073002nasa&r=email-51d9&l=027-a6a&t=c&data=04|01|randy.c.cruz@nasa.gov|5dafcb1c14924fd385ae08d95349004f|7005d45845be48ae8140d43da96dd17b|0|0|637632395284772379|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikh1aWwiLCJXVCi6Mn0=|1000&sdata=HvT0wirH9YOO09dgyYYGF0hyXn0QqR8pBSsIOxISVpw=&reserved=0>> (7/29) "We're following breaking news on a mishap at the space station. Now causing a delay in tomorrow's launch of the

Boeing Starliner, the countdown for liftoff was in less than 24 hours.”

#### NASA Officials Discuss Starliner Launch Delay Part 2

Spectrum News 13 (FL)

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021073002nasa&r=email-51d9&l=028-c06&t=c&data=04|01|randy.c.cruz@nasa.gov|5dafcb1c14924fd385ae08d95349004f|7005d45845be48ae8140d43da96dd17b|0|0|637632395284782339|Unknown|TWFpbGZsb3d8eyJWljoimc4wLjAwMDAiLCJQljoiv2luMzliLCJBTil6lk1haWwiLCJXVCi6Mn0=|1000&sdata=/QgXk+tv3lOJbCsAtPIMIVuAVtSDmgKARUErfSnRGqQ=&reserved=0>> (7/29) “The only thing really I’m concerned about more there’s been consistently a thunderstorm three o’clock in the afternoon for the last week. So I this flight is going to go very well and then to specifically answer your question. Competition is good. Not only for the obvious reasons that it brings about the most efficient productive.”

#### NASA Officials Give Update On Starliner Mission Part 1

Spectrum News 13 (FL)

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021073002nasa&r=email-51d9&l=029-7af&t=c&data=04|01|randy.c.cruz@nasa.gov|5dafcb1c14924fd385ae08d95349004f|7005d45845be48ae8140d43da96dd17b|0|0|637632395284782339|Unknown|TWFpbGZsb3d8eyJWljoimc4wLjAwMDAiLCJQljoiv2luMzliLCJBTil6lk1haWwiLCJXVCi6Mn0=|1000&sdata=EBv9uES+Dw7tsbYLh1x1D+jjj+IGFgRDu8ifb48Y7+g=&reserved=0>> (7/29) “Destination space now here at 10:32 we are a little more than 24 hours from the scheduled launch of the Boeing CST-100 Starliner mission from the Cape Canaveral Space Force station. NASA Administrator Bill Nelson along with other NASA officials providing a live update on the status of the mission. Let’s listen in.”

#### Moon to Mars

#### Hidden Mars ‘Lakes’ May Actually Be Frozen Clay, Scientists Say

CNET News

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#### Tracking NASA’s Mars Perseverance Rover, A Year In

CNET News

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Fox-Sowell) “Friday marks one year since NASA launched its Perseverance rover on a bold mission to Mars. Since it landed inside the 28-mile-wide (45 kilometer) Jezero Crater in February, Perseverance has accomplished more than any other Mars rover. It’s collected rock samples for a future return to Earth; deployed a miniature helicopter, the first ever rotorcraft to fly on another planet; and converted carbon dioxide to oxygen – to name a few achievements.”

## Solar System and Beyond

### Asteroids Like The One That Killed The Dinosaurs May Be More Common Than Thought: Study

Newsweek

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021073002nasa&r=email-51d9&l=02c-0c7&t=c&data=04|01|randy.c.cruz@nasa.gov|5dafcb1c14924fd385ae08d95349004f|7005d45845be48ae8140d43da96dd17b|0|0|637632395284802249|Unknown|TWFpbGZsb3d8eyJWljoimc4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ik1haWwiLCJXVCi6Mn0=|1000&sdata=KBePy0uAidJ535/puT1tpXa2INjOXrCK/g6YgXem0uk=&reserved=0>> (7/29, Browne) “Large asteroids like the one that wiped out the dinosaurs may be more common than previously thought, scientists have discovered. ... Scientists have previously questioned where the Chicxulub impactor came from and how often impacts like it have occurred. To find an answer, researchers from the Department of Space Studies at the Southwest Research Institute (SRI) in Colorado used NASA’s Pleiades supercomputer to model how asteroids from the outer half of the asteroid belt might end up colliding with the Earth.”

### Dinosaur Killer Asteroid Research Says Source In Solar System

SlashGear

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### Scientists Have Seen Light From The Far Side Of A Black Hole For The First Time

Vice

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021073002nasa&r=email-51d9&l=02e-4ac&t=c&data=04|01|randy.c.cruz@nasa.gov|5dafcb1c14924fd385ae08d95349004f|7005d45845be48ae8140d43da96dd17b|0|0|637632395284812208|Unknown|TWFpbGZsb3d8eyJWljoimc4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ik1haWwiLCJXVCi6Mn0=|1000&sdata=5ig11TnCkrylIXi7TRKu1+TinNexARygjZW6hI0buDg=&reserved=0>> (7/29, Ferreira) “For the first time ever, scientists have glimpsed ‘echoes’ of light from the far side of a black hole, revealing an unprecedented glimpse of the environment behind these extreme objects relative to our perspective on Earth. ... Nevertheless, the bizarre effect was captured in January 2020 by two specialized space telescopes: NASA’s NuSTAR and the European Space Agency (ESA) observatory XMM-Newton. Their observations revealed precise details of the black hole’s corona, which is a ring of ultra-hot gas particles that surrounds some of these extreme objects.”

## Inside NASA's Jaw-Dropping Plans To Fly To Titan, Burn Its Lakes And Bring Home The 'Origin Of Life'

Forbes

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## Einstein Right, Again: Researchers See Light 'Echo' Around Black Hole

NBC News

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Space Tech

## NASA Engineers Want This Steampunk Rover To Uncover Venus' Secrets

Seeker Network

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Various

## The U.S. Should Send A President To Space

Wall Street Journal

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021073002nasa&r=email-51d9&l=032-671&t=c&data=04|01|randy.c.cruz@nasa.gov|5dafcb1c14924fd385ae08d95349004f|7005d45845be48ae8140d43da96dd17b|0|0|637632395284832117|Unknown|TWFPbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiv2luMzliLCJBTil6lk1haWwiLCJXVCI6Mn0=|1000&sdata=IzfmBg95fLI8wALjKAGjl412WdX844A9W9s6bse/N1l=&reserved=0>> (7/29, Mulder, Piliero) "The U.S. president has a responsibility to inspire and lead all Americans, and to set the example on the world stage. To comprehend that responsibility fully, he (or she) should personally view Earth from the highest



possible vantage point—outer space. ... To launch a U.S. president into space, NASA should form partnerships with the private sector, underscoring the unmatched entrepreneurial spirit of the U.S.”

## The Head Of NASA Believes In Aliens

Discovery Channel

<[https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021073002nasa&r=email-51d9&l=033-](https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021073002nasa&r=email-51d9&l=033-98c&t=c&data=04|01|randy.c.cruz@nasa.gov|5dafcb1c14924fd385ae08d95349004f|7005d45845be48ae8140d43da96dd17b|0|0|637632395284832117|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikh1aWwiLCJXVCi6Mn0=|1000&sdata=CL8JTmKWNpvpiWFv/bXVvByvdaOhXBL06suKBGd4uh4=&reserved=0)

98c&t=c&data=04|01|randy.c.cruz@nasa.gov|5dafcb1c14924fd385ae08d95349004f|7005d45845be48ae8140d43da96dd17b|0|0|637632395284832117|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikh1aWwiLCJXVCi6Mn0=|1000&sdata=CL8JTmKWNpvpiWFv/bXVvByvdaOhXBL06suKBGd4uh4=&reserved=0> (7/29, Lenberg) “Bill Nelson, who previously served as a US senator, was recently nominated as the 14th Administrator of NASA by President Joe Biden. His interview with CNN came after the long-awaited Pentagon UFO report. While the report didn’t reveal any evidence for life beyond earth, it also failed to explain over 99% of the UFO sightings on record.”

## SpaceX Just Saved NASA \$500 Million With One Rocket

Quartz

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0e8&t=c&data=04|01|randy.c.cruz@nasa.gov|5dafcb1c14924fd385ae08d95349004f|7005d45845be48ae8140d43da96dd17b|0|0|637632395284842074|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikh1aWwiLCJXVCi6Mn0=|1000&sdata=LK43dgin+psuMOTToPgl7IYXUaiqAwyrviUm/Pcj/Qos=&reserved=0> (7/29, Fernholz) “The rocket billionaire discourse, heady as it is, can distract from the facts. Here’s one: NASA saved at least \$548 million, and perhaps more, thanks to just one contract with Elon Musk’s SpaceX. Last week, the US space agency tapped the company’s Falcon Heavy rocket to launch a space probe to one of Jupiter’s moons, Europa, in 2024. The much-awaited Europa Clipper mission will fly by and assess the evidence of water—and extra-terrestrial life—on the astronomical body. The mission was driven through Congress thanks in large part to the support of one former representative, John Culberson, a Texas Republican who navigated it through the sea of veto points and competing priorities that often stands between scientific hopes and their realization.”

## Aging Infrastructure The ‘Single, Greatest Threat’ To NASA Missions And Technology

FedScoop

<[https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021073002nasa&r=email-51d9&l=035-](https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021073002nasa&r=email-51d9&l=035-367&t=c&data=04|01|randy.c.cruz@nasa.gov|5dafcb1c14924fd385ae08d95349004f|7005d45845be48ae8140d43da96dd17b|0|0|637632395284842074|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikh1aWwiLCJXVCi6Mn0=|1000&sdata=/fToZhJ7rwK/W6FisTKouZe7Mxsi5YfShnS8Up6IMs=&reserved=0)

367&t=c&data=04|01|randy.c.cruz@nasa.gov|5dafcb1c14924fd385ae08d95349004f|7005d45845be48ae8140d43da96dd17b|0|0|637632395284842074|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikh1aWwiLCJXVCi6Mn0=|1000&sdata=/fToZhJ7rwK/W6FisTKouZe7Mxsi5YfShnS8Up6IMs=&reserved=0> (7/29, Nyczepir) “NASA infrastructure should be part of the wider effort to fund federal research and development infrastructure, said Rep. Eddie Bernice Johnson, D-Texas, during a House Science Subcommittee on Space and Aeronautics hearing Thursday. The chair of the full committee said NASA’s infrastructure needs include one of the nation’s most powerful supercomputers, utility and access systems across nine centers and other research and test facilities, wind tunnels for developing subsonic and hypersonic aircraft, and clean rooms and vacuum chambers for building sensitive interplanetary spacecraft.”

Other

## Space Force Launches Small Satellite To Test New Sensor Possibilities

Federal Times

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“The U.S. Space Force launched a new experimental satellite July 29 that will test the possibility of installing large, deployable weather sensors on small satellites. Named Monolith, the satellite is an Air Force Research Laboratory program exploring the possibility of using small satellites for Department of Defense missions. The mission for this latest launch will demonstrate whether large, deployable sensors can be effectively used with 6U- or 12U-sized satellite buses. A 6U satellite is 10-by-20-by-30 centimeters, while the 12U is larger at 20-by-20-by-30 centimeters.”

Video From 2000 Shows Jeff Bezos Mocked By Fans For Dreams Of Flying To Space

Fox Business

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“More than two decades ago, Jeff Bezos was mocked for his dreams of exploring space, according to an old interview clip with journalist Charlie Rose. During the 1-minute interview clip between Bezos and Rose from 2000, which surfaced online this week, Bezos discussed his dreams to ‘go help explore space.’”

Chinese Long March 2D Carries Tianhui Survey Satellite Into Orbit

NASA Space Flight

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“A Chinese Long March 2D rocket lifted off from the Jiuquan Satellite Launch Center in Inner Mongolia at 04:01 UTC today, July 29, carrying Tianhui 1-04, the fourth in China's series of Tianhui 1 Earth observation satellites, into Low Earth Orbit. The launch marked the 25th orbital launch attempt from China this year and the sixth in the month of July.”

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73002nasa&r=email-51d9&l=03a-44e&t=c&data=04|01|randy.c.cruz@nasa.gov|5dafcb1c14924fd385ae08d95349004f|7005d45845be48ae8140d43da96dd17b|0|0|637632395284861985|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTil6lk1haWwiLCJXVCi6Mn0=|1000&sdata=6SgRxedeZMpdrL0ge2itO5jSvo4Lj+6GW30j3z9ys70=&reserved=0>. The NASA Morning Briefing is published five days a week by Bulletin Intelligence, which creates custom briefings for government and corporate leaders. We can be found on the Web at [BulletinIntelligence.com](http://BulletinIntelligence.com), or called at (703) 483-6100.

## **[EXTERNAL] NASA Morning Briefing for Friday, November 20, 2020**

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- U.S. Space Force Begins Mulling Launch Services Post-2025 (Aviation Week) <#S46>
- Colorado Springs Named Finalist For U.S. Space Command Headquarters (Denver Post) <#S47>
- Brevard Advances For Selection Of U.S. Space Command HQ (Florida Today) <#S48>

- SpaceX To Set Another Big Milestone With Starlink Launch On A Busy Day (CNET News) <#S49>
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- SpaceX's Starlink Satellites Are Ruining Stargazing For Everyone (UPI) <#S51>
- SpaceX To Transition To Fully Reusable Fleet For National Security Launches (Space News) <#S52>
- China Rolls Out Long March 5 Rocket For Chang'e 5 Moon Sample-return Mission Launch (SPACE) <#S53>
- Rocket Lab Is About To Recover A Used Rocket Booster For The First Time. Watch The Company Launch Its SpaceX-inspired Mission Live Online. (Business Insider) <#S54>
- Live Coverage: SpaceX Rolls Out Falcon 9 Rocket For Next Starlink Mission (Spaceflight Now) <#S55>

## Top Stories

### Astronauts On The Space Station Discuss SpaceX's Rocket, Sleeping Quarters And Baby Yoda

Washington Post

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### SpaceX Crew Dragon Astronauts Describe Thrilling Ride To Orbit

CBS News

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### On Brink Of Collapse, Famed Puerto Rico Space Telescope To Close Down

Reuters

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0c6&t=c&data=04|01|randy.c.cruz@nasa.gov|7591cf966c474a7b93c608d88d4b5af0|7005d45845be48ae8140d43da96dd17b|0|0|637414702071756934|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikh aWwiLCJXVCi6Mn0=|1000&sdata=nEil6MQ7xNSjHoXuHvm9CImK4e6kN4Fsl9InpDmtym0=&reserved=0> (11/19, Roulette) “The U.S. National Science Foundation on Thursday announced it will close down the massive space telescope at Puerto Rico’s Arecibo Observatory, ending 57 years of astronomical discoveries after suffering two destructive mishaps in recent months. ... The telescope was instrumental in detecting the near-Earth asteroid Bennu in 1999, which laid the groundwork for NASA to send a robotic probe there to collect and eventually return its first asteroid dirt sample some two decades later.”

#### Arecibo Observatory, A Great Eye On The Cosmos, Is Going Dark

New York Times

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53b&t=c&data=04|01|randy.c.cruz@nasa.gov|7591cf966c474a7b93c608d88d4b5af0|7005d45845be48ae8140d43da96dd17b|0|0|637414702071756934|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikh aWwiLCJXVCi6Mn0=|1000&sdata=KdnOZknxxXZ45cKybF8yW4S8lw4or4o8wi+cBoDOVqU=&reserved=0> (11/19, Overbye) “One of the great icons of human curiosity, the Arecibo radio telescope, is going to be torn down, the National Science Foundation, its owner, announced today. From its perch in the mountains of Puerto Rico, the observatory has served for decades as the vanguard of the search for alien civilizations and guarded the planet against killer asteroids. ... Since 2016, it has been managed by the University of Central Florida under a cooperative agreement with Universidad Ana G. Méndez and Yang Enterprises. The annual budget is about \$12 million, including funds from NASA and the National Science Foundation, according to the University of Central Florida.”

#### NASA Report Puts A Damper On 2024 Astronaut Moon Landing Date

CNET News

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b9c&t=c&data=04|01|randy.c.cruz@nasa.gov|7591cf966c474a7b93c608d88d4b5af0|7005d45845be48ae8140d43da96dd17b|0|0|637414702071766896|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikh aWwiLCJXVCi6Mn0=|1000&sdata=/V/F3U4BFha3woWjD1jxNIYQwFMk4+p2eAINVDaZcsE=&reserved=0> (11/19, Kooser) “The word ‘ambitious’ has been floating around NASA’s Artemis program, which has been aiming to return astronauts to the moon in 2024. A NASA report released this month suggests that 2024 might be a little too ambitious.”

Flight

No content.

Earth

#### Losing Arecibo Observatory Would Create A Hole That Can't Be Filled, Scientists Say

SPACE

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4a0&t=c&data=04|01|randy.c.cruz@nasa.gov|7591cf966c474a7b93c608d88d4b5af0|7005d45845be48ae8140d43da96dd17b|0|0|637414702071776858|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikh aWwiLCJXVCi6Mn0=|1000&sdata=0Ovi3jnEsfhCfLdPdW3l2hWOXd0oCQcxX8Nuz63QDvE=&reserved=0> (11/19, Bartels) “Arecibo Observatory is facing a mid-life crisis — or something much worse. ... This year, one of his students



got NASA funding to learn to use Arecibo herself for Mendez's research. But in August, just before she would have begun, a cable holding the massive observing platform suspended above the dish slipped out of its socket and crashed through some of the dish's fragile panels."

#### Arecibo Observatory, A Great Eye On The Cosmos, Is Going Dark

New York Times

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2020112002nasa&r=email-f78b&l=009-51d&t=c&data=04|01|randy.c.cruz@nasa.gov|7591cf966c474a7b93c608d88d4b5af0|7005d45845be48ae8140d43da96dd17b|0|0|637414702071776858|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikh1aWwiLCJXVCi6Mn0=|1000&sdata=nZgOEXe7OMB6Bd2BVz+jWq0nDZHKuAJWIBty6b3yHkl=&reserved=0>> (11/19, Overbye) "One of the great icons of human curiosity, the Arecibo radio telescope, is going to be torn down, the National Science Foundation, its owner, announced today. From its perch in the mountains of Puerto Rico, the observatory has served for decades as the vanguard of the search for alien civilizations and guarded the planet against killer asteroids. ... Since 2016, it has been managed by the University of Central Florida under a cooperative agreement with Universidad Ana G. Méndez and Yang Enterprises. The annual budget is about \$12 million, including funds from NASA and the National Science Foundation, according to the University of Central Florida."

#### On Brink Of Collapse, Famed Puerto Rico Space Telescope To Close Down

Reuters

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#### Arecibo Telescope To Be Disassembled

Houston Chronicle

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#### Arecibo Radio Telescope, An Icon Of Astronomy, Is Lost

SPACE

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880&t=c&data=04|01|randy.c.cruz@nasa.gov|7591cf966c474a7b93c608d88d4b5af0|7005d45845be48ae8140d43da96dd17b|0|0|637414702071796764|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQljojV2luMzliLCJBTil6Ik1haWwiLCJXVCi6Mn0=|1000&sdata=CUNiF0dg6N9rU8As38edcvn2NPAKiQmfzfB5sOAobqQ=&reserved=0> (11/19, Bartels) "The National Science Foundation (NSF) will decommission Arecibo Observatory's massive radio dish after damage has made the facility too dangerous to repair, the agency announced today (Nov. 19). ... Although NSF is the agency most closely tied to the facility, NASA currently provides about one-third of the observatory's operating costs to fund planetary radar observations, particularly of near-Earth asteroids."

#### World's Most Powerful Radar Telescope At Arecibo Will Be Scrapped

UPI

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#### Missed The Leonid Meteor Shower? A Better One, The Geminids, Is Next Month.

Washington Post

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#### The Mission To Decipher A Mysterious Aerosol Layer Above Himalayan Monsoon Clouds

Phys (UK)

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## Humans in Space

### Astronauts On The Space Station Discuss SpaceX's Rocket, Sleeping Quarters And Baby Yoda

Washington Post

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=202012002nasa&r=email-f78b&l=010-36e&t=c&data=04|01|randy.c.cruz@nasa.gov|7591cf966c474a7b93c608d88d4b5af0|7005d45845be48ae8140d43da96dd17b|0|0|637414702071816672|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTil6Ikh1aWwiLCJXVCi6Mn0=|1000&sdata=uJs8OHcNfDUNxkX9eChFrJuQZP6llfgxu9u3eAYreaM=&reserved=0>> (11/19, Davenport) "He had flown on the space shuttle and the Russian Soyuz. And now after flying the SpaceX Dragon capsule, Soichi Noguchi is only the third person, after John Young and Wally Schirra, to travel to orbit in three different vehicles. ... The mission followed a test flight in May that ended NASA's long, ignominious absence from human spaceflight since the space shuttle was retired in 2011. With that successful mission, which sent NASA astronauts Bob Behnken and Doug Hurley to the station for two months, NASA then proceeded with the Crew-1 flight, making the Dragon capsule the first privately owned and privately operated spacecraft to be certified by NASA for human spaceflight."

### SpaceX Crew-1 Aims To 'Accomplish Huge Amount Of Research'

Aviation Week

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### Astronauts Talk About Successful SpaceX Crew Dragon Launch In Space Station News Conference

CBS News

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### Astronaut: SpaceX Dragon Beats Shuttle, Soyuz For Launching

AP

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Dunn) “The most experienced astronaut on SpaceX’s newly launched crew said Thursday that riding a Dragon capsule to orbit is like being inside the actual mythical beast, and a lot more fun than NASA’s shuttles or Russian flights. As for the crew’s space rookie, he pulled more G’s, or gravity forces, flying fighter jets in the Navy, but they didn’t last nearly as long as they did during his ‘awesome’ first rocket launch, he said.”

#### SpaceX Crew Astronauts Discuss Journey To ISS

USA Today

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=202012002nasa&r=email-f78b&l=014-2ca&t=c&data=04|01|randy.c.cruz@nasa.gov|7591cf966c474a7b93c608d88d4b5af0|7005d45845be48ae8140d43da96dd17b|0|0|637414702071836593|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikh1aWwiLCJXVCi6Mn0=|1000&sdata=MtwBiGHZqrSOSa6wGGVln2JxV7SC47WiDqRmgO6i4OQ=&reserved=0>> (11/19)  
“SpaceX crew astronauts discuss journey to ISS”

#### SpaceX Crew Dragon Astronauts Describe Thrilling Ride To Orbit

CBS News

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=202012002nasa&r=email-f78b&l=015-4a6&t=c&data=04|01|randy.c.cruz@nasa.gov|7591cf966c474a7b93c608d88d4b5af0|7005d45845be48ae8140d43da96dd17b|0|0|637414702071846546|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikh1aWwiLCJXVCi6Mn0=|1000&sdata=aIXXH8Nd1UYyHt2sibrACd1f7eSjfFLUmr3fstmwSI=&reserved=0>> (11/19, Harwood) “Rookie astronaut Victor Glover, a Navy F/A-18 carrier pilot, is used to high-speed maneuvers and sharp accelerations flying high-performance jets. But nothing prepared him for the sounds, sensations and extended acceleration he felt riding into orbit atop a SpaceX Falcon 9 rocket. Or the view from 260 miles up. Or the sensation of weightlessness.”

#### Style Invitational Week 1411: The Back End Of A Bulwer

Washington Post

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=202012002nasa&r=email-f78b&l=016-0cb&t=c&data=04|01|randy.c.cruz@nasa.gov|7591cf966c474a7b93c608d88d4b5af0|7005d45845be48ae8140d43da96dd17b|0|0|637414702071846546|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikh1aWwiLCJXVCi6Mn0=|1000&sdata=VAK0w6qhXdBkrlQHj7X0elgHZeovEj8GjgdonPaxwl=&reserved=0>> (11/19, Myers) “As he left, the captain flashed a smile — a wide, satisfied grin with lips parted a quarter-inch, the right corner of the mouth raised slightly above the left, and a dry lower lip slightly stuck to the teeth — that defied description. (Jay Shuck, Week 788) ... In Week 1407, inspired by NASA’s efforts to bring in some bucks by offering to shill Estee Lauder moisturizer from the space station, we asked for some more ideas for ads from space — or from a prison, a football team, a kindergarten or the White House.4th place:”

#### Traveling To This Remote Location May Cost You \$58 Million

Los Angeles Times

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=202012002nasa&r=email-f78b&l=017-829&t=c&data=04|01|randy.c.cruz@nasa.gov|7591cf966c474a7b93c608d88d4b5af0|7005d45845be48ae8140d43da96dd17b|0|0|637414702071856501|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikh1aWwiLCJXVCi6Mn0=|1000&sdata=qRd0FDsFt8E2IPhKCKMowRkVAfoihw5IYN+hrAYxbEU=&reserved=0>> (11/19, Schnalzer) “Good morning, fellow adventurers. As we gear up for the holiday season, travel is weighing on our minds.

Is there a safe way to navigate LAX? How dangerous is staying at a hotel? The Times' travel writers have put together a guide to holiday travel that will answer many of your questions. And in the meantime, here are a few close-to-home destinations you can visit to satiate the wanderlust you may be feeling. ... Wondering how much a trip to the International Space Station might set you back? Last year, NASA estimated that private astronauts would pay about \$58 million for the trip, plus \$35,000 each day they spend at the station. At this price point I'm not sure if a trip to the stars is in the cards for me, but it's nice to dream."

#### Elon Musk: SpaceX's Rocket Booster From NASA's Crew-1 Mission Is Still Reusable!

Tech Times

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2020112002nasa&r=email-f78b&l=018-88e&t=c&data=04|01|randy.c.cruz@nasa.gov|7591cf966c474a7b93c608d88d4b5af0|7005d45845be48ae8140d43da96dd17b|0|0|637414702071856501|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikh1aWwiLCJXVCi6Mn0=|1000&sdata=BXk2u9GrZuQitlJszXWSUno7vXC/PwhsAPsAdSRi+I=&reserved=0>> (11/19, Alonzo) "The aerospace manufacturer Space Exploration Technologies Corp., also known as 'SpaceX,' will now proceed to collect its rocket boosters, fairings, and other parts that detached itself from the Crew Dragon. The company's dronship is seen carrying the huge rocket booster that 'leans' to its side."

#### Cosmonauts Prep Space Station For Module Removal On Spacewalk Out Of New Airlock

SPACE

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2020112002nasa&r=email-f78b&l=019-268&t=c&data=04|01|randy.c.cruz@nasa.gov|7591cf966c474a7b93c608d88d4b5af0|7005d45845be48ae8140d43da96dd17b|0|0|637414702071866459|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikh1aWwiLCJXVCi6Mn0=|1000&sdata=SXaJz7IFZzMHxcidw26noPbPxTNjwwMAc28KVUTRd5Y=&reserved=0>> (11/19, Pearlman) "Two cosmonauts opened a new door to the outside of the International Space Station while preparing for the replacement of a two-decade-old Russian docking compartment. Sergey Ryzhikov, commander of the space station's Expedition 64 crew, and flight engineer Sergey Kud-Sverchkov, both of the Russian federal space agency Roscosmos, began a 6-hour, 48-minute spacewalk on Wednesday (Nov. 18), by inaugurating the use of the Poisk module as an airlock."

#### SpaceX Crew-1 Booster Returns To Port

Florida Today

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2020112002nasa&r=email-f78b&l=01a-a4b&t=c&data=04|01|randy.c.cruz@nasa.gov|7591cf966c474a7b93c608d88d4b5af0|7005d45845be48ae8140d43da96dd17b|0|0|637414702071866459|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikh1aWwiLCJXVCi6Mn0=|1000&sdata=YusRhvo7ngtFyIGEb6+SnNQZLnaBnis5Kd1Mui6q/XI=&reserved=0>> (11/19) "SpaceX Crew-1 Booster returns to port"

#### Richard Glover Discusses Trip To ISS

KABC-TV Los Angeles

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2020112002nasa&r=email-f78b&l=01b-154&t=c&data=04|01|randy.c.cruz@nasa.gov|7591cf966c474a7b93c608d88d4b5af0|7005d45845be48ae8140d43da96dd17b|0|0|637414702071876415|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikh1aWwiLCJXVCi6Mn0=|1000&sdata=u97Wrd9BArlCPpsnPwWP7q/5LCT4LCiKqS9TUvfgRGI=&reserved=0>> (11/19)

“It’s a long way from the IE to the International Space Station. Richard Glover made that trip and he talks about what an amazing experience it has been.”

#### SpaceX Booster Returns To Florida

WKMG-TV Orlando (FL)

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2020112002nasa&r=email-f78b&l=01c-5d3&t=c&data=04|01|randy.c.cruz@nasa.gov|7591cf966c474a7b93c608d88d4b5af0|7005d45845be48ae8140d43da96dd17b|0|0|637414702071876415|Unknown|TWfPbGZsb3d8eyJWljoimc4wLjAwMDAiLCJQljoiv2luMzliLCJBTil6lk1haWwiLCJXVCI6Mn0=|1000&sdata=vu3apv+CcdjdY7MUybSzi43Kjfx9CM1wGXUFbHYrd/4=&reserved=0>> (11/19)  
“Well, just four days after four astronauts took off from the Space Coast, the SpaceX rocket booster is now back in central Florida. The Falcon 9 booster stuck the landing on the drone ship in the Atlantic shortly after liftoff.”

#### Moon to Mars

#### NASA Report Puts A Damper On 2024 Astronaut Moon Landing Date

CNET News

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2020112002nasa&r=email-f78b&l=01d-9ac&t=c&data=04|01|randy.c.cruz@nasa.gov|7591cf966c474a7b93c608d88d4b5af0|7005d45845be48ae8140d43da96dd17b|0|0|637414702071886371|Unknown|TWfPbGZsb3d8eyJWljoimc4wLjAwMDAiLCJQljoiv2luMzliLCJBTil6lk1haWwiLCJXVCI6Mn0=|1000&sdata=+BaFE7UnJaR2SH40wmb0iTQ2tpBUcWn8DSv2FGCuTgw=&reserved=0>> (11/19, Kooser) “The word ‘ambitious’ has been floating around NASA’s Artemis program, which has been aiming to return astronauts to the moon in 2024. A NASA report released this month suggests that 2024 might be a little too ambitious.”

#### SLS Static Test-Fire Now Scheduled For Week Of Dec. 21

Aviation Week

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2020112002nasa&r=email-f78b&l=01e-b9f&t=c&data=04|01|randy.c.cruz@nasa.gov|7591cf966c474a7b93c608d88d4b5af0|7005d45845be48ae8140d43da96dd17b|0|0|637414702071886371|Unknown|TWfPbGZsb3d8eyJWljoimc4wLjAwMDAiLCJQljoiv2luMzliLCJBTil6lk1haWwiLCJXVCI6Mn0=|1000&sdata=1riGI5c5EOP7tiMyNmE+mFLPfu183jHjOco0707an4OE=&reserved=0>> (11/19)  
“Delayed by the COVID-19 pandemic, five Gulf Coast hurricanes and some minor technical issues, the first core stage of NASA’s Space Launch System (SLS) rocket is now scheduled for an 8-min. static test-fire during the week of Dec. 21 at Stennis Space Center in Mississippi. Firing the...”

#### Actual Rocket Science: Inside The Hundreds Of Hours Of Testing For This Engine’s 15 Minutes Of Flame

Houston Chronicle

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2020112002nasa&r=email-f78b&l=01f-b08&t=c&data=04|01|randy.c.cruz@nasa.gov|7591cf966c474a7b93c608d88d4b5af0|7005d45845be48ae8140d43da96dd17b|0|0|637414702071896331|Unknown|TWfPbGZsb3d8eyJWljoimc4wLjAwMDAiLCJQljoiv2luMzliLCJBTil6lk1haWwiLCJXVCI6Mn0=|1000&sdata=q/zhB/7UYE8OaGYw/zi4aYZBn7ZIMSC1CErbMy52c94=&reserved=0>> (11/19, Leinfelder) “Rob Morehead snaked a camera on a cable up the rocket engine’s nozzle looking for anomalies caused during the combustion of supercold liquid oxygen and liquid methane. ... Houston-based Intuitive Machines is building a nearly 13-foot-tall lunar lander, the Nova-C, that’s set to deliver commercial cargo and NASA-provided payloads to

the moon in the fourth quarter of 2021. The 102-person company was founded in 2013 by two former NASA employees and the former CEO of a company that provided engineering services to NASA.”

#### Big Dust Storms May Have Driven Off Much Of Mars' Water

SPACE

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=202012002nasa&r=email-f78b&l=020-354&t=c&data=04|01|randy.c.cruz@nasa.gov|7591cf966c474a7b93c608d88d4b5af0|7005d45845be48ae8140d43da96dd17b|0|0|637414702071896331|Unknown|TWFpbGZsb3d8eyJWljoimc4wLjAwMDAiLCJQljoiv2luMzliLCJBTil6lk1haWwiLCJXVCI6Mn0=|1000&sdata=CGLK/7h9U10FRJHlbylZ2Vmb8WGd26v/5SRXR0i5/00=&reserved=0>> (11/19, Taylor Redd) “Martian dust storms fling water higher into the atmosphere than previously thought possible, helping to strip the Red Planet of its limited water and potentially contributing to the loss of an ocean’s worth of water over billions of years, a new study finds. ... Now, researchers using NASA’s Mars Atmosphere and Volatile Evolution spacecraft, or MAVEN, have learned that powerful summer dust storms may carry water above the hygropause, a cold layer in the atmosphere that traps water lower down.”

#### Hear A Sound Bite From NASA's Perseverance As It Travels Along The Final Frontier

Houston Chronicle

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=202012002nasa&r=email-f78b&l=021-7c2&t=c&data=04|01|randy.c.cruz@nasa.gov|7591cf966c474a7b93c608d88d4b5af0|7005d45845be48ae8140d43da96dd17b|0|0|637414702071906281|Unknown|TWFpbGZsb3d8eyJWljoimc4wLjAwMDAiLCJQljoiv2luMzliLCJBTil6lk1haWwiLCJXVCI6Mn0=|1000&sdata=9K8Zo5oyykhqKxhMNCpYvMxjKAj3gPW4C7jJHRXf1tl=&reserved=0>> (11/19, Ramirez) “You can now hear a sound bite from NASA’s Perseverance as it travels along the final frontier. A first of its kind, NASA’s Mars 2020 Perseverance was rigged with microphones to capture sounds of the spacecraft as it hurtled through space. The 60-second audio file was captured on Oct. 19, according to NASA.”

#### It Costs Time And Money To Reach The Moon. Moon Express Is Running Out Of Both

Florida Today

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=202012002nasa&r=email-f78b&l=022-4a2&t=c&data=04|01|randy.c.cruz@nasa.gov|7591cf966c474a7b93c608d88d4b5af0|7005d45845be48ae8140d43da96dd17b|0|0|637414702071906281|Unknown|TWFpbGZsb3d8eyJWljoimc4wLjAwMDAiLCJQljoiv2luMzliLCJBTil6lk1haWwiLCJXVCI6Mn0=|1000&sdata=333fznNRmdBe7luCn+/M0Fk6qct2UjWDW16GTjhU7hw=&reserved=0>> (11/19) “It costs time and money to reach the moon. Moon Express is running out of both”

#### NASA's "Break The Ice" Challenge Seeks Ideas To Assist With Future Moon Missions

TechRepublic

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=202012002nasa&r=email-f78b&l=023-7e9&t=c&data=04|01|randy.c.cruz@nasa.gov|7591cf966c474a7b93c608d88d4b5af0|7005d45845be48ae8140d43da96dd17b|0|0|637414702071916235|Unknown|TWFpbGZsb3d8eyJWljoimc4wLjAwMDAiLCJQljoiv2luMzliLCJBTil6lk1haWwiLCJXVCI6Mn0=|1000&sdata=Y1/xeBaOJu4mJZQPB18/oKmoyW9WH/TJO75OjARSfW0=&reserved=0>> (11/19, Dallon Adams) “By 2024, NASA’s Artemis program is scheduled to land a man and a woman on the lunar surface. To assist with long-term sustained presence on the moon in the years ahead, NASA will need to tap resources in-situ rather than rely on supplies from Earth. It turns out, lunar regolith is brimming with life-supporting potential, but harvesting these materials in the harsh lunar environment presents numerous engineering challenges.”

## Solar System and Beyond

### NASA Solves 16-Year-Old 'Missing Link' Mystery Of Blue Ring Nebula

Daily Express (UK)

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2020112002nasa&r=email-f78b&l=024-478&t=c&data=04|01|randy.c.cruz@nasa.gov|7591cf966c474a7b93c608d88d4b5af0|7005d45845be48ae8140d43da96dd17b|0|0|637414702071926190|Unknown|TWFpbGZsb3d8eyJWIjojMC4wLjAwMDAiLCJQIjojV2luMzliLCJBTil6Ikh1aWwiLCJXVCI6Mn0=|1000&sdata=J2aN00kNAWwd+MgoVnsnNg4JYcQIm6Ky/MjrQ0uQ5Kc=&reserved=0>> (11/19, Fish) "Astronomers at US-based space agency NASA can finally explain how the strange fluorescent debris of the Blue Ring Nebula first formed. The Blue Ring Nebula has a bright star called TYC 2597-735-1 sitting at its centre, and surrounding this is an unusual ultraviolet ring first spied in 2004 using NASA's Galaxy Evolution Explorer (GALEX) space telescope."

### Earth And The Moon Might Have Captured An Old Upper Stage Rocket

Universe Today

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2020112002nasa&r=email-f78b&l=025-d1a&t=c&data=04|01|randy.c.cruz@nasa.gov|7591cf966c474a7b93c608d88d4b5af0|7005d45845be48ae8140d43da96dd17b|0|0|637414702071926190|Unknown|TWFpbGZsb3d8eyJWIjojMC4wLjAwMDAiLCJQIjojV2luMzliLCJBTil6Ikh1aWwiLCJXVCI6Mn0=|1000&sdata=ax1Czb7kp9YQhzKQlkmFd+QyT2XTFx7Ytdl8s5vzPKw=&reserved=0>> (11/19, Williams) "Back in September, the Pan-STARRS1 survey telescope noticed an object that followed a slight but distinctly curved path in the sky, a telltale sign that it was captured by Earth's gravity. Initially, this object was thought to be a near-Earth Asteroid (NEA) and was given a standard designation by the Minor Planet Center (2020 SO). However, the Center for Near-Earth Object Studies (CNEOS) at NASA JPL had another theory."

### Uncovering The Hidden Side Of Storms: France's Taranis Satellite To Launch In November

Phys (UK)

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2020112002nasa&r=email-f78b&l=026-dee&t=c&data=04|01|randy.c.cruz@nasa.gov|7591cf966c474a7b93c608d88d4b5af0|7005d45845be48ae8140d43da96dd17b|0|0|637414702071936155|Unknown|TWFpbGZsb3d8eyJWIjojMC4wLjAwMDAiLCJQIjojV2luMzliLCJBTil6Ikh1aWwiLCJXVCI6Mn0=|1000&sdata=Wi25zhRCREzTqzXGD6DU2oOD3mulW+Hk6btdVni+zKE=&reserved=0>> (11/19, Colonna D'istria) "Sprites, elves, jets... few people know that scientists habitually use such other-worldly words to describe transient luminous events or TLEs, light flashes that occur during active storms just a few tens of kilometers over our heads. Few people also know that storms can act as particle accelerators generating very brief bursts of X-rays and gamma rays. ... TGFs were first observed scientifically in 1994 by the Compton Gamma-Ray Observatory (CGRO), a NASA spacecraft deployed from the U.S. space shuttle Atlantis. In certain conditions, storms generate a very short burst of gamma photons."

Space Tech

### India's Shukrayaan Orbiter To Study Venus For Over Four Years, Launches In 2024

Space News

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c02&t=c&data=04|01|randy.c.cruz@nasa.gov|7591cf966c474a7b93c608d88d4b5af0|7005d45845be48ae8140d43da96dd17b|0|0|637414702071936155|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTil6lk1haWwiLCJXVCi6Mn0=|1000&sdata=YqKzM3MEbazQC0C5Gx2tkP77sIBq/Wlbc71aTSH5lw=&reserved=0> (11/19, Mehta) "India's space agency aims to launch its Venus orbiter Shukrayaan in late 2024, more than a year later than previously planned, an ISRO research scientist told a NASA-chartered planetary science planning committee Nov. 10. T. Maria Antonita of the Indian Space Research Organisation (ISRO) detailed the status of the mission to scientists drafting a new 10-year plan for NASA's planetary science program."

#### James Webb Space Telescope Will Study The Origins Of Cosmic Dust

SlashGear

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2020112002nasa&r=email-f78b&l=028-d46&t=c&data=04|01|randy.c.cruz@nasa.gov|7591cf966c474a7b93c608d88d4b5af0|7005d45845be48ae8140d43da96dd17b|0|0|637414702071946106|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTil6lk1haWwiLCJXVCi6Mn0=|1000&sdata=cDfj0P6feC1TjgvYwuDTeJ+TM8E77ZOul/6Z62MrTig=&reserved=0>> (11/19, McGlaun) "NASA is looking forward to the James Webb Space Telescope launching and already has plenty of science planned for the telescope. One of the mysteries that the telescope will help solve is why there appears to be more cosmic dust in galaxies than expected. Where exactly the cosmic dust comes from is a mystery."

Various

#### OMB's IT Vendor Management Office Will Help Agencies Buy AI

FedScoop

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2020112002nasa&r=email-f78b&l=029-f44&t=c&data=04|01|randy.c.cruz@nasa.gov|7591cf966c474a7b93c608d88d4b5af0|7005d45845be48ae8140d43da96dd17b|0|0|637414702071946106|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTil6lk1haWwiLCJXVCi6Mn0=|1000&sdata=0d/ev6Ukjl4A3Kas0O0v0iEDIsHUZlrN46OqTV5xVo=&reserved=0>> (11/19, Nyczepir) "As agencies attempt to understand the artificial intelligence market, they have a new resource in the Office of Management and Budget's Information Technology Vendor Management Office launched in October, said the federal chief procurement officer Wednesday. ... The Office of Management and Budget's Office of Federal Procurement Policy created the ITVMO in collaboration with the General Services Administration, NASA and the National Institutes of Health."

Other

#### Rocket Lab, Raising Money For Children's Hospital, Will Attempt First Stage Recovery

NASA Space Flight

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2020112002nasa&r=email-f78b&l=02a-525&t=c&data=04|01|randy.c.cruz@nasa.gov|7591cf966c474a7b93c608d88d4b5af0|7005d45845be48ae8140d43da96dd17b|0|0|637414702071956063|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTil6lk1haWwiLCJXVCi6Mn0=|1000&sdata=5t3FAtyKthSHHWYDv1CFKI3SRUlyYha/ugxkE4wGmsM=&reserved=0>> (11/19, Fletcher) "Rocket Lab is preparing to launch its sixth mission of 2020 — a launch which the company calls its 'most diverse mission yet,' with 30 satellites onboard and a launch broadcast that will raise money for the Paediatric Intensive Care Unit at Starship children's hospital."

#### Florida Named Finalist For US Space Command Headquarters

AP

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2020112002nasa&r=email-f78b&l=02b-ae5&t=c&data=04|01|randy.c.cruz@nasa.gov|7591cf966c474a7b93c608d88d4b5af0|7005d45845be48ae8140d43da96dd17b|0|0|637414702071956063|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikh1aWwiLCJXVCi6Mn0=|1000&sdata=nf/BzfGJvuc5a6q7tv3liCGIQH6eC+nZjXhllhLGH74=&reserved=0>> (11/19, Farrington) "After first being shunned, Florida is a finalist to be the home of the U.S. Space Command headquarters, the U.S. Air Force announced Thursday. Patrick Air Force Base in Brevard County is one of six finalists for the headquarters of the military's space operations. The Air Force initially announced six other finalists in 2019, and Florida wasn't on the list. But the Air Force restarted the selection process because of complaints that it hadn't been transparent enough."

#### Houston Not A Finalist For The U.S. Space Command Headquarters

Houston Chronicle

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2020112002nasa&r=email-f78b&l=02c-2c8&t=c&data=04|01|randy.c.cruz@nasa.gov|7591cf966c474a7b93c608d88d4b5af0|7005d45845be48ae8140d43da96dd17b|0|0|637414702071966017|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikh1aWwiLCJXVCi6Mn0=|1000&sdata=ADgyDfOnTiRbOzT884+xUV8xaHkCQ5LdR8mGTF9wjp8=&reserved=0>> (11/19, Leinfelder, Christenson, Jefferson) "Houston was not selected as a finalist for the U.S. Space Command headquarters. San Antonio, however, did make the cut. It is among six locations being considered by the Department of the Air Force. The new headquarters should be announced in early 2021."

#### Air Force Releases List Of 6 Potential Locations For U.S. Space Command

UPI

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2020112002nasa&r=email-f78b&l=02d-fcb&t=c&data=04|01|randy.c.cruz@nasa.gov|7591cf966c474a7b93c608d88d4b5af0|7005d45845be48ae8140d43da96dd17b|0|0|637414702071966017|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikh1aWwiLCJXVCi6Mn0=|1000&sdata=ofTeMTk9mGp/PBF7G2fGMfpdkXSLwkJwBaVc5YuyUQ=&reserved=0>> (11/19) "The Air Force announced Thursday that it has selected six possible locations for the U.S. Space Command. The six locations are New Mexico's Kirtland Air Force Base, Offutt AFB in Nebraska, Patrick AFB in Florida, Peterson AFB in Colorado, Port San Antonio in Texas and Redstone Army Airfield in Alabama."

#### Finalists Named For Permanent U.S. Space Command Headquarters—Here Are The Locations

Forbes

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2020112002nasa&r=email-f78b&l=02e-b8e&t=c&data=04|01|randy.c.cruz@nasa.gov|7591cf966c474a7b93c608d88d4b5af0|7005d45845be48ae8140d43da96dd17b|0|0|637414702071975975|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikh1aWwiLCJXVCi6Mn0=|1000&sdata=fc1My2zXZ/YYz21c/xctNBIWdnGXL4evkxMm+racsl4=&reserved=0>> (11/19, Reimann) "U.S. Space Command has whittled its list down to six finalist locations for a permanent headquarters to house outer space operations for the U.S. military, the U.S. Air Force said Thursday. Peterson Air Force Base in Colorado, Redstone Army Airfield in Alabama, Port San Antonio in Texas, Patrick Air Force Base in Florida and Offutt Air Force Base in Nebraska were named as the finalists, chosen from more than 60 cities in 26 states."

#### U.S. Space Force Begins Mulling Launch Services Post-2025

#### Aviation Week

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=202012002nasa&r=email-f78b&l=02f-d3b&t=c&data=04|01|randy.c.cruz@nasa.gov|7591cf966c474a7b93c608d88d4b5af0|7005d45845be48ae8140d43da96dd17b|0|0|637414702071975975|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTil6I6k1hYWwiLCJXVCi6Mn0=|1000&sdata=MSLMBVVA4N6Ctqbpaif6fxwP8ARIdmi5BDjEHekDpeo=&reserved=0>> (11/19)  
“Three months after awarding National Security Space Launch (NSSL) Phase 2 contracts, the U.S. Space Force is beginning to determine what the third phase of the competition will look like, and that includes moving past geosynchronous orbit (GEO) into cislunar space.”

#### Colorado Springs Named Finalist For U.S. Space Command Headquarters

##### Denver Post

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=202012002nasa&r=email-f78b&l=030-69c&t=c&data=04|01|randy.c.cruz@nasa.gov|7591cf966c474a7b93c608d88d4b5af0|7005d45845be48ae8140d43da96dd17b|0|0|637414702071985932|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTil6I6k1hYWwiLCJXVCi6Mn0=|1000&sdata=fRqzJAb3Pct9FSPhzanZ0JS5xiVD0AgO774POptE83c=&reserved=0>> (11/19, Tabachnik) “The U.S. Space Command headquarters could be staying in Colorado. Peterson Air Force Base in Colorado Springs was named one of six finalists to house the military’s newest branch, U.S. Sens. Michael Bennet and Cory Gardner announced in separate news releases.”

#### Brevard Advances For Selection Of U.S. Space Command HQ

##### Florida Today

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=202012002nasa&r=email-f78b&l=031-392&t=c&data=04|01|randy.c.cruz@nasa.gov|7591cf966c474a7b93c608d88d4b5af0|7005d45845be48ae8140d43da96dd17b|0|0|637414702071985932|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTil6I6k1hYWwiLCJXVCi6Mn0=|1000&sdata=wVYQJbDBofPfbdkj+Xm1xv9t/srg3gmqOBBYVhZOVLo=&reserved=0>> (11/19)  
“The U.S. Air Force announced Thursday that Brevard County was selected as a finalist in the search for the U.S. Space Command headquarters. In July, the Air Force received nominations from 26 states for the Space Force’s Space Command headquarters and narrowed the candidates down to six communities. The Space Coast is the only Florida location chosen even though several other Florida areas applied.”

#### SpaceX To Set Another Big Milestone With Starlink Launch On A Busy Day

##### CNET News

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=202012002nasa&r=email-f78b&l=032-0bd&t=c&data=04|01|randy.c.cruz@nasa.gov|7591cf966c474a7b93c608d88d4b5af0|7005d45845be48ae8140d43da96dd17b|0|0|637414702071995884|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTil6I6k1hYWwiLCJXVCi6Mn0=|1000&sdata=T+lJ4IKXPBUCgnk4uuDh5IOAodVYJxtL0HjaKBVvn6c=&reserved=0>> (11/19, Mack) “SpaceX aims to launch its 16th batch of its Starlink broadband satellites on Saturday, which is looking to be a busy day for Elon Musk’s company. Boosting a new group of its orbiting routers has become a matter of routine for SpaceX as it works to build up a mega-constellation with thousands of the individual satellites in a low-Earth orbit. But this mission stands to put a few feathers in Musk’s cap.”

#### News Analysis | SpaceX Has A Lot Riding On Starlink’s \$499 “UFO On A Stick”

Space News

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=202012002nasa&r=email-f78b&l=033-0b7&t=c&data=04|01|randy.c.cruz@nasa.gov|7591cf966c474a7b93c608d88d4b5af0|7005d45845be48ae8140d43da96dd17b|0|0|637414702071995884|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTil6Ikh1aWwiLCJXVCi6Mn0=|1000&sdata=yc10W5bIFodBuvVwkpqgmPYAjIX5DgHFx2/B/ESRhFCk=&reserved=0>> (11/19, Mohny) "Elon Musk's engineering and business philosophy largely boils down to a three-phase approach: brainstorm it, build it, and test and iterate. Starlink, his satellite broadband venture, entered the test and iterate phase with the recent opening of its limited public beta."

#### SpaceX's Starlink Satellites Are Ruining Stargazing For Everyone

UPI

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=202012002nasa&r=email-f78b&l=034-753&t=c&data=04|01|randy.c.cruz@nasa.gov|7591cf966c474a7b93c608d88d4b5af0|7005d45845be48ae8140d43da96dd17b|0|0|637414702072005843|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTil6Ikh1aWwiLCJXVCi6Mn0=|1000&sdata=MjBSjBMcWSwKFGtXjlenlu3imCVWb+M5rkTp07HHKso=&reserved=0>> (11/19) "I walk outside my rural Saskatchewan house before dawn and look up, expecting to have my breath taken away by the sheer number of stars overhead. I'm a professional astronomer, but I still appreciate naked-eye stargazing as much as an eager child. This is the first place I've lived that's dark enough to easily see the Milky Way, and I'm stunned and awed every time I look up."

#### SpaceX To Transition To Fully Reusable Fleet For National Security Launches

Space News

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=202012002nasa&r=email-f78b&l=035-03a&t=c&data=04|01|randy.c.cruz@nasa.gov|7591cf966c474a7b93c608d88d4b5af0|7005d45845be48ae8140d43da96dd17b|0|0|637414702072005843|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTil6Ikh1aWwiLCJXVCi6Mn0=|1000&sdata=1vzu4FeSoCpHQIFJL149XMPW87+yzGmwyc9b0aoM/rU=&reserved=0>> (11/19, Erwin) "The U.S. Space Force expects to clear SpaceX to use previously flown boosters for all national security missions. So far the Space Force only has agreed to allow reused boosters in two GPS launches scheduled in 2021 but the plan is to make the entire fleet reusable by 2022."

#### China Rolls Out Long March 5 Rocket For Chang'e 5 Moon Sample-return Mission Launch

SPACE

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=202012002nasa&r=email-f78b&l=036-737&t=c&data=04|01|randy.c.cruz@nasa.gov|7591cf966c474a7b93c608d88d4b5af0|7005d45845be48ae8140d43da96dd17b|0|0|637414702072015807|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTil6Ikh1aWwiLCJXVCi6Mn0=|1000&sdata=w4TuaKPhW8AX4jNltuEQv1cnfzbCY8IS4crBllyyWs=&reserved=0>> (11/19, Wall) "China's most ambitious moon mission to date is on the pad ahead of its planned launch next week. A heavy-lift Long March 5 rocket topped with the robotic Chang'e 5 lunar sample-return spacecraft rolled out to its pad at Wenchang Space Launch Center in Hainan province on Tuesday (Nov. 17)."

Rocket Lab Is About To Recover A Used Rocket Booster For The First Time. Watch The Company Launch Its SpaceX-inspired Mission Live Online.

Business Insider

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2020112002nasa&r=email-f78b&l=037-2a2&t=c&data=04|01|randy.c.cruz@nasa.gov|7591cf966c474a7b93c608d88d4b5af0|7005d45845be48ae8140d43da96dd17b|0|0|637414702072015807|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikh1haWwiLCJXVCi6Mn0=|1000&sdata=GzTeSP/aq4fl6HGGQ0Hot4PvYB4VAE531Ghcv317YB8=&reserved=0>> (11/19, Mosher) "SpaceX is famous for recovering and reusing its colossal Falcon 9 rocket boosters, each time saving more than \$10 million. However, the Elon Musk-founded company is about to have some impressive (if smaller) competition in New Zealand."

#### Live Coverage: SpaceX Rolls Out Falcon 9 Rocket For Next Starlink Mission

##### Spaceflight Now

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2020112002nasa&r=email-f78b&l=038-2a4&t=c&data=04|01|randy.c.cruz@nasa.gov|7591cf966c474a7b93c608d88d4b5af0|7005d45845be48ae8140d43da96dd17b|0|0|637414702072025755|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikh1haWwiLCJXVCi6Mn0=|1000&sdata=uHjLp4zStmw65kFUX44Oiw111PI+nqmqpPihKb/y0wA=&reserved=0>> (11/20, Clark) "Live coverage of the countdown and launch of a SpaceX Falcon 9 rocket from pad 40 at Cape Canaveral Air Force Station in Florida. The mission will launch SpaceX's 16th batch of approximately 60 Starlink broadband satellites. Text updates will appear automatically below. Follow us on Twitter. File photo of a SpaceX Falcon 9 rocket standing on pad 40 at Cape Canaveral Air Force Station before a previous mission."

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## **[EXTERNAL] NASA Morning Briefing for Monday, December 30, 2019**

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### Editor's Note

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#### The Year In American Spaceflight

Washington Post <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019123002nasa-26r-3Demail-2D6201-26l-3D003-2D666-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=imu7eubHpSvVUGlixbUPmJP7urM5pkp68t86fufO88w&s=wQLFrNiMj1kPlricMGJFQuC1EblgBo7CkVq9r3ACcFo&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019123002nasa-26r-3Demail-2D6201-26l-3D003-2D666-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=imu7eubHpSvVUGlixbUPmJP7urM5pkp68t86fufO88w&s=wQLFrNiMj1kPlricMGJFQuC1EblgBo7CkVq9r3ACcFo&e=>)> (12/28, Newton, Davenport) "The first NASA commercial crew astronauts who will fly aboard the SpaceX Crew Dragon address employees at the SpaceX factory under the first Dragon capsule that went



into space and returned to Earth. They are, from left, Mike Hopkins, Victor Glover, Bob Behnken, and Doug Hurley.”

#### US Astronaut Sets Record For Longest Spaceflight By A Woman

Associated Press <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019123002nasa-26r-3Demail-2D6201-26l-3D004-2D1e5-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=imu7eubHpSvVUGlixbUPmJP7urM5pkp68t86fufO88w&s=wJ6\\_Dm3l1umDR32jVHE2bXOY8nLOQKh5jonBtUXs4dQ&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019123002nasa-26r-3Demail-2D6201-26l-3D004-2D1e5-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=imu7eubHpSvVUGlixbUPmJP7urM5pkp68t86fufO88w&s=wJ6_Dm3l1umDR32jVHE2bXOY8nLOQKh5jonBtUXs4dQ&e=>) (12/28) “A U.S. astronaut set a record Saturday for the longest single spaceflight by a woman, breaking the old mark of 288 days with about two months left in her mission. Christina Koch, a 40-year-old electrical engineer from Livingston, Montana, arrived at the International Space Station on March 14. She broke the record set by former space station commander Peggy Whitson in 2016-2017.”

#### NASA's Mars 2020 Rover Set To Hunt Martian Fossils, Scout For Manned Missions

Reuters <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019123002nasa-26r-3Demail-2D6201-26l-3D005-2D6f8-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=imu7eubHpSvVUGlixbUPmJP7urM5pkp68t86fufO88w&s=ZKCM4FN7RcDV6s5nw6IFvGo7LpJ1zqFpW1n2XdeneNE&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019123002nasa-26r-3Demail-2D6201-26l-3D005-2D6f8-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=imu7eubHpSvVUGlixbUPmJP7urM5pkp68t86fufO88w&s=ZKCM4FN7RcDV6s5nw6IFvGo7LpJ1zqFpW1n2XdeneNE&e=>) (12/28, Ross) “A NASA robotic rover is nearing completion ahead of a journey next year to search for evidence of past life on Mars and lay the groundwork for the space agency’s mission to send humans into deep space. The U.S. space agency on Friday showed off its Mars 2020 rover, whose official name will be chosen early next year. NASA will in February ship the rover to Florida’s Kennedy Space Center where its three sections will be fully assembled. A July launch will send the rover to a dry lake bed on Mars that is bigger than the island of Manhattan.”

#### NASA's Moon To Mars Plans, Artemis Lunar Program Gets Fast Tracked In 2019

PRNewswire <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019123002nasa-26r-3Demail-2D6201-26l-3D006-2D371-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=imu7eubHpSvVUGlixbUPmJP7urM5pkp68t86fufO88w&s=EENPwVbO8nDDRPBBGXQky-8V7JnUGk-r1RFe\\_gnnq4&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019123002nasa-26r-3Demail-2D6201-26l-3D006-2D371-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=imu7eubHpSvVUGlixbUPmJP7urM5pkp68t86fufO88w&s=EENPwVbO8nDDRPBBGXQky-8V7JnUGk-r1RFe_gnnq4&e=>) (12/27) “In 2019, NASA celebrated the 50th anniversary of the agency’s Apollo 11 Moon landing, the most historic moment in space exploration, while also making significant progress toward putting the first woman and next man on the Moon by 2024 under the Artemis program. Through America’s Moon to Mars exploration approach, Artemis gained bipartisan support this year among members of Congress, the U.S aerospace industry, as well as with international partners, including Canada, Australia, and Japan, and member states of the European Space Agency.”

#### What Is Trump's Space Force – And What Does It Mean For NASA?

Fortune <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019123002nasa-26r-3Demail-2D6201-26l-3D007-2Dfd2-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=imu7eubHpSvVUGlixbUPmJP7urM5pkp68t86fufO88w&s=YRm4GZgpK8TZwusHEPfuZxr7AvLBkFEcAfvL0xWpJB4&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019123002nasa-26r-3Demail-2D6201-26l-3D007-2Dfd2-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=imu7eubHpSvVUGlixbUPmJP7urM5pkp68t86fufO88w&s=YRm4GZgpK8TZwusHEPfuZxr7AvLBkFEcAfvL0xWpJB4&e=>) (12/27, Bachman, Tritten, Bloomberg) “Satellites make much of modern warfare possible, through GPS systems, wireless communications and sophisticated weather forecasting. This makes them tempting

military targets. The U.S. Air Force has been responsible for defending American satellites and spacecraft. President Donald Trump said in 2018 that the perils required a separate military branch. More than a year later, House and Senate negotiators have reached a tentative agreement to fund Space Force, the first new military service in seven decades.”

Flight

No content.

Earth

#### NASA Finds An Elongated Phanfone Now A Tropical Storm

Phys (UK) <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019123002nasa-26r-3Demail-2D6201-26l-3D008-2D9e0-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=imu7eubHpSvVUGlixUPmJP7urM5pkp68t86fufO88w&s=r1bH3B2HmVBGabil3nF4Ym4i259\\_88l\\_sR9N9VLBhbl&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019123002nasa-26r-3Demail-2D6201-26l-3D008-2D9e0-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=imu7eubHpSvVUGlixUPmJP7urM5pkp68t86fufO88w&s=r1bH3B2HmVBGabil3nF4Ym4i259_88l_sR9N9VLBhbl&e=>) (12/27, Gutro) “NASA-NOAA’s Suomi NPP satellite provided a visible image of Phanfone as it continues moving through the South China Sea. Visible imagery showed that the storm is less organized and elongated as the storm weakened from a typhoon to a tropical storm. Satellite imagery gives forecasters a look at the structure and strength of tropical cyclones. Visible imagery helps forecasters understand if a storm is organizing or weakening.”

#### Satellites Show Glaciers Rapidly Shrinking From Climate Change

SPACE <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019123002nasa-26r-3Demail-2D6201-26l-3D009-2Dbc3-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=imu7eubHpSvVUGlixUPmJP7urM5pkp68t86fufO88w&s=mQT9k4wDfBphDmxApFvRYgENQXGSWSS0ACjL5vDo0YQ&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019123002nasa-26r-3Demail-2D6201-26l-3D009-2Dbc3-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=imu7eubHpSvVUGlixUPmJP7urM5pkp68t86fufO88w&s=mQT9k4wDfBphDmxApFvRYgENQXGSWSS0ACjL5vDo0YQ&e=>) (12/28, Howell) “The Earth’s glaciers are in rapid retreat. New results relying on five decades of satellite observations show extensive changes to glaciers at the Earth’s north and south poles, a result of global warming. Much of the data comes courtesy of the long-running Landsat mission, which is a series of Earth observation satellites managed by NASA and the United States Geological Survey.”

#### NASA Finds Heavy Rain Potential In Tropical Storm Sarai

Phys (UK) <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019123002nasa-26r-3Demail-2D6201-26l-3D00a-2Dde2-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=imu7eubHpSvVUGlixUPmJP7urM5pkp68t86fufO88w&s=ShhwPqmAyOkG6QqEVxtFm\\_rUb3QUBJEPIz1wVSwlyhE&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019123002nasa-26r-3Demail-2D6201-26l-3D00a-2Dde2-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=imu7eubHpSvVUGlixUPmJP7urM5pkp68t86fufO88w&s=ShhwPqmAyOkG6QqEVxtFm_rUb3QUBJEPIz1wVSwlyhE&e=>) (12/27, Gutro) “NASA analyzed the cloud top temperatures in Tropical Storm Sarai using infrared light to determine the strength of the storm. Sarai has triggered warnings for Fiji and Tonga in the Southern Pacific Ocean, On Dec. 27, there are regional warnings in effect for Fiji and Tonga. In Fiji, there is a storm warning is in force for Vatulele and Kadavu. A gale warning is in force for Vanua Levu, Taveuni, Yasawa and the Mamanuca Group, Kadavu, Lomaiviti Group, Viti Levu and nearby smaller islands.”

A Mysterious Crunch In Earth’s Magnetic Field Created A New Type Of Aurora Borealis. A NASA Intern Discovered It.

Business Insider <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019123002nasa-26r-3Demail-2D6201-26l-3D00b-2D405-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=imu7eubHpSvVUGlixbUPmJP7urM5pkp68t86fufO88w&s=oXvRmp8U7SOu85zH89PPYoCxZlazBgxA1e\\_9yyVrAoc&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019123002nasa-26r-3Demail-2D6201-26l-3D00b-2D405-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=imu7eubHpSvVUGlixbUPmJP7urM5pkp68t86fufO88w&s=oXvRmp8U7SOu85zH89PPYoCxZlazBgxA1e_9yyVrAoc&e=>) (12/26, McFall-Johnsen) "A NASA intern has discovered a new type of aurora in 3-year-old video footage of the Arctic sky. With the help of NASA scientists and a satellite, Jennifer Briggs, a physics student at Pepperdine University, connected the unusual aurora to a sudden retreat in Earth's magnetic field. It's the first time scientists have seen an aurora caused solely by a compression of Earth's magnetic field."

## Humans in Space

### US Astronaut Sets Record For Longest Spaceflight By A Woman

Associated Press <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019123002nasa-26r-3Demail-2D6201-26l-3D00c-2Ded8-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=imu7eubHpSvVUGlixbUPmJP7urM5pkp68t86fufO88w&s=KLsto6Bqa0qYllvc\\_A4eGngHMBlqzBNntnN\\_ZIYdQU&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019123002nasa-26r-3Demail-2D6201-26l-3D00c-2Ded8-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=imu7eubHpSvVUGlixbUPmJP7urM5pkp68t86fufO88w&s=KLsto6Bqa0qYllvc_A4eGngHMBlqzBNntnN_ZIYdQU&e=>) (12/28) "A U.S. astronaut set a record Saturday for the longest single spaceflight by a woman, breaking the old mark of 288 days with about two months left in her mission. Christina Koch, a 40-year-old electrical engineer from Livingston, Montana, arrived at the International Space Station on March 14. She broke the record set by former space station commander Peggy Whitson in 2016-2017."

### Astronaut Christina Koch Breaks Record For Longest Space Mission By A Woman

SPACE <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019123002nasa-26r-3Demail-2D6201-26l-3D00d-2Db73-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=imu7eubHpSvVUGlixbUPmJP7urM5pkp68t86fufO88w&s=RgLFd8mdow97gb5UEI2U-8XngE\\_lhh7hICUt0tKxSr4&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019123002nasa-26r-3Demail-2D6201-26l-3D00d-2Db73-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=imu7eubHpSvVUGlixbUPmJP7urM5pkp68t86fufO88w&s=RgLFd8mdow97gb5UEI2U-8XngE_lhh7hICUt0tKxSr4&e=>) (12/28, Pearlman) "A NASA astronaut has set a new record for time spent in space, and she still has six weeks to go before she returns to Earth. Christina Koch has surpassed the record for the single longest space mission by a woman as previously established by NASA astronaut Peggy Whitson in 2017. The 40-year-old Expedition 61 flight engineer exceeded Whitson's record of 289 days, 5 hours and 1 minute on Saturday (Dec. 28) at 6:16 p.m. CST (0016 GMT on Dec. 29)."

### Christina Koch Sets Record For Longest Space Flight By A Woman

UPI <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019123002nasa-26r-3Demail-2D6201-26l-3D00e-2D9e4-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=imu7eubHpSvVUGlixbUPmJP7urM5pkp68t86fufO88w&s=DlpTOuuDqIcAmHV1qNgfx3BzcaW04aGeTQR9TG-65HU&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019123002nasa-26r-3Demail-2D6201-26l-3D00e-2D9e4-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=imu7eubHpSvVUGlixbUPmJP7urM5pkp68t86fufO88w&s=DlpTOuuDqIcAmHV1qNgfx3BzcaW04aGeTQR9TG-65HU&e=>) (12/28, McCurdy, Cone) "NASA astronaut Christina Koch set the record Saturday for the longest single space flight by a woman at 289 days. Koch, 40, surpassed the record set by Peggy Whitson, who spent 288 consecutive days in space in 2016-2017."

### Astronaut Christina Koch On Breaking Record: 'It's A Wonderful Thing For Science'

CNN <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019123002nasa-26r-3Demail-2D6201-26l-3D00f-2D3a8-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=imu7eubHpSvVUGlibUPmJP7urM5pkp68t86fufO88w&s=izztkeaYI3Y5CqNoIxM9SZUcufaiiHYOm8v1Ple064M&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019123002nasa-26r-3Demail-2D6201-26l-3D00f-2D3a8-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=imu7eubHpSvVUGlibUPmJP7urM5pkp68t86fufO88w&s=izztkeaYI3Y5CqNoIxM9SZUcufaiiHYOm8v1Ple064M&e=>) (12/28) "NASA astronaut Christina Koch is making history again. Breaking the record for the longest single spaceflight by a woman, Koch will have been in space for 289 days on December 28. She spoke with CNN's Christi Paul about what the record means to her and her work in space."

#### NASA Astronaut Sets Record For Longest Single Spaceflight By A Woman

Baltimore Sun <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019123002nasa-26r-3Demail-2D6201-26l-3D010-2D1a9-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=imu7eubHpSvVUGlibUPmJP7urM5pkp68t86fufO88w&s=aZOWM5H6QpzFM8ED1ovPFAWDeBfCYM7gM5ZFNpJ2D-k&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019123002nasa-26r-3Demail-2D6201-26l-3D010-2D1a9-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=imu7eubHpSvVUGlibUPmJP7urM5pkp68t86fufO88w&s=aZOWM5H6QpzFM8ED1ovPFAWDeBfCYM7gM5ZFNpJ2D-k&e=>) (12/28) "U.S. astronaut Christina Koch on Saturday broke the record for the longest single spaceflight by a woman, having spent 289 days in space, according to NASA. Having arrived on the International Space Station (ISS) on March 15, Koch eclipsed the record of 288 days set by retired astronaut Peggy Whitson."

#### Astronaut Christina Koch Sets New Record For Longest Single Space Flight By A Woman

CBS News <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019123002nasa-26r-3Demail-2D6201-26l-3D011-2Dc5c-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=imu7eubHpSvVUGlibUPmJP7urM5pkp68t86fufO88w&s=a8LuK1f9LCvLvLL3A7NP33mK-r9SDB4pBrgQhx6ptDw&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019123002nasa-26r-3Demail-2D6201-26l-3D011-2Dc5c-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=imu7eubHpSvVUGlibUPmJP7urM5pkp68t86fufO88w&s=a8LuK1f9LCvLvLL3A7NP33mK-r9SDB4pBrgQhx6ptDw&e=>) (12/27, Harwood) "Astronaut Christina Koch, launched to the International Space Station on March 15, marks her 289th day in space Saturday, breaking retired astronaut Peggy Whitson's world record for the longest single space flight by a woman. Along the way, Koch has participated in four spacewalks, joining astronaut Jessica Meir for history's first all-female excursion in October. She plans to venture back outside twice more in January, again teaming up with Meir, to complete the installation of new solar array batteries for the station's solar power system."

#### Christina Koch Breaks Record For Longest Spaceflight By A Woman

Engadget <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019123002nasa-26r-3Demail-2D6201-26l-3D012-2D593-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=imu7eubHpSvVUGlibUPmJP7urM5pkp68t86fufO88w&s=JSeEargvU3g7h4m4vRwpHcpv5w785uY\\_zcAVrxRlnHY&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019123002nasa-26r-3Demail-2D6201-26l-3D012-2D593-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=imu7eubHpSvVUGlibUPmJP7urM5pkp68t86fufO88w&s=JSeEargvU3g7h4m4vRwpHcpv5w785uY_zcAVrxRlnHY&e=>) (12/28, Fingas) "This won't be the longest spaceflight of all time. Scott Kelly set the US record by staying in space for 340 consecutive days between 2015 and 2016, while Russia's Valeri Polyakov spent just over 437 days aboard Mir. It's still a very long stretch, however, and it comes on the back of Koch joining fellow astronaut Jessica Meir in NASA's first all-female spacewalk this October."

#### Longest Spaceflight By Woman Logged By NASA Astronaut Christina Koch

CNET News <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019123002nasa-26r-3Demail-2D6201-26l-3D013-2D92a-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=imu7eubHpSvVUGlibUPmJP7urM5pkp68t86fufO88w&s=JSeEargvU3g7h4m4vRwpHcpv5w785uY\\_zcAVrxRlnHY&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019123002nasa-26r-3Demail-2D6201-26l-3D013-2D92a-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=imu7eubHpSvVUGlibUPmJP7urM5pkp68t86fufO88w&s=JSeEargvU3g7h4m4vRwpHcpv5w785uY_zcAVrxRlnHY&e=>)

3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-  
mHkTTiYCEf5ROyus&m=imu7eubHpSvVUGlixUPmJP7urM5pkp68t86fufO88w&s=eFvRexliNJs3Hisw0PCSHj\_hdZ3yZ7sKKDsALC3MsZU&e=> (12/28, Moyer) "Call it a giant leap for womankind. As of Saturday, astronaut Christina Koch has set the record for the longest single spaceflight by a woman, completing her 289th day on the International Space Station. That bests Peggy Whitson's stay on the ISS in 2016-17, but Koch's currently scheduled sojourn will bring her up just short of Scott Kelly's 340-day record – Koch is set to be on the space station until February, a 328-day visit. Part of her mission is to study how long-term space travel impacts the human body, info that could be crucial as NASA ponders sending astronauts to Mars."

#### Koch Breaks Female Spaceflight Record

KTLA-TV Los Angeles <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019123002nasa-26r-3Demail-2D6201-26l-3D014-2D6a4-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=imu7eubHpSvVUGlixUPmJP7urM5pkp68t86fufO88w&s=ubXtX5xjo1GfL8kwmw7EYbf3-xrCRXUq2KJDRIJiVaw&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019123002nasa-26r-3Demail-2D6201-26l-3D014-2D6a4-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=imu7eubHpSvVUGlixUPmJP7urM5pkp68t86fufO88w&s=ubXtX5xjo1GfL8kwmw7EYbf3-xrCRXUq2KJDRIJiVaw&e=>) (12/28) "New at 5 NASA astronaut Christina Koch has made history. She is now, she's broken the record for the longest single spaceflight by a woman."

#### Moon to Mars

##### NASA's Moon To Mars Plans, Artemis Lunar Program Gets Fast Tracked In 2019

PRNewswire <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019123002nasa-26r-3Demail-2D6201-26l-3D015-2D7fc-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=imu7eubHpSvVUGlixUPmJP7urM5pkp68t86fufO88w&s=P\\_32J5UgEV5dgU\\_9zcxWdS1nx1Uj8AbhTpyIm-oA88s&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019123002nasa-26r-3Demail-2D6201-26l-3D015-2D7fc-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=imu7eubHpSvVUGlixUPmJP7urM5pkp68t86fufO88w&s=P_32J5UgEV5dgU_9zcxWdS1nx1Uj8AbhTpyIm-oA88s&e=>) (12/27) "In 2019, NASA celebrated the 50th anniversary of the agency's Apollo 11 Moon landing, the most historic moment in space exploration, while also making significant progress toward putting the first woman and next man on the Moon by 2024 under the Artemis program. Through America's Moon to Mars exploration approach, Artemis gained bipartisan support this year among members of Congress, the U.S aerospace industry, as well as with international partners, including Canada, Australia, and Japan, and member states of the European Space Agency."

#### Solar System and Beyond

##### Scientists Eulogize The Opportunity Rover's 15 Years Of Service

Discover Magazine <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019123002nasa-26r-3Demail-2D6201-26l-3D016-2Dd3c-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=imu7eubHpSvVUGlixUPmJP7urM5pkp68t86fufO88w&s=dRgjbh25FORL5drfY7xLZ9RJvTBnb0JCHu6oht9-fck&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019123002nasa-26r-3Demail-2D6201-26l-3D016-2Dd3c-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=imu7eubHpSvVUGlixUPmJP7urM5pkp68t86fufO88w&s=dRgjbh25FORL5drfY7xLZ9RJvTBnb0JCHu6oht9-fck&e=>) (12/28, Wenz) "After some 15 prolific years on the martian surface, NASA's Opportunity rover has gone silent. It took a whopping planet-wide dust storm to fell the solar-powered robot, but, in February, the space agency officially ended the mission. We talked with NASA scientists about their experiences working on the golf-cart-sized rover and what Opportunity meant to them. Their eulogies for the lost rover, originally intended to last just three months on Mars, are below."

## “Ring Of Fire” Solar Eclipse Captured In Stunning Photos From Around The World

CBS News <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019123002nasa-26r-3Demail-2D6201-26l-3D017-2Db22-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=imu7eubHpSvVUGlixUPmJP7urM5pkp68t86fufO88w&s=6M5GLFPNz3mMEu50mGx27-S1kA3Eu9oLL-RTGw8DMRU&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019123002nasa-26r-3Demail-2D6201-26l-3D017-2Db22-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=imu7eubHpSvVUGlixUPmJP7urM5pkp68t86fufO88w&s=6M5GLFPNz3mMEu50mGx27-S1kA3Eu9oLL-RTGw8DMRU&e=>) (12/27, Lewis) “The last solar eclipse of the decade brought with it a stunning ‘ring of fire’ the day after Christmas. Millions of people around the world marveled at the sight Thursday across parts of Europe, Asia, Australia and Africa. ... According to NASA, an annular eclipse can only occur under specific conditions. The moon must be a new moon, meaning it is in its first lunar phase.”

### Space Tech

#### NASA’s Mars 2020 Rover Set To Hunt Martian Fossils, Scout For Manned Missions

Reuters <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019123002nasa-26r-3Demail-2D6201-26l-3D018-2De48-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=imu7eubHpSvVUGlixUPmJP7urM5pkp68t86fufO88w&s=psAFMmafoRFfDc8aze7ErRm1qu5z3l3XiewzH74ZOcU&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019123002nasa-26r-3Demail-2D6201-26l-3D018-2De48-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=imu7eubHpSvVUGlixUPmJP7urM5pkp68t86fufO88w&s=psAFMmafoRFfDc8aze7ErRm1qu5z3l3XiewzH74ZOcU&e=>) (12/28, Ross) “A NASA robotic rover is nearing completion ahead of a journey next year to search for evidence of past life on Mars and lay the groundwork for the space agency’s mission to send humans into deep space. The U.S. space agency on Friday showed off its Mars 2020 rover, whose official name will be chosen early next year. NASA will in February ship the rover to Florida’s Kennedy Space Center where its three sections will be fully assembled. A July launch will send the rover to a dry lake bed on Mars that is bigger than the island of Manhattan.”

#### NASA’s Trip To Mars Begins In California ‘clean Room’

AFP <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019123002nasa-26r-3Demail-2D6201-26l-3D019-2D583-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=imu7eubHpSvVUGlixUPmJP7urM5pkp68t86fufO88w&s=hTdfYhyqluw2VdaLpaygjLyeU8c7icC2AtPSGgoZJ84&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019123002nasa-26r-3Demail-2D6201-26l-3D019-2D583-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=imu7eubHpSvVUGlixUPmJP7urM5pkp68t86fufO88w&s=hTdfYhyqluw2VdaLpaygjLyeU8c7icC2AtPSGgoZJ84&e=>) (12/27) “NASA’s Mars 2020 rover will head off for the Red Planet next year. But like Voyager, Galileo and Cassini before it, the mission’s epic journey began in a ‘clean room’ in California. One of two ultra-sterile labs used for spacecraft assembly at the Jet Propulsion Laboratory in Pasadena, on the outskirts of Los Angeles, the eggshell-white room was briefly and exceptionally opened to journalists Friday.”

#### Mars 2020 Rover At JPL

KABC-TV Los Angeles <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019123002nasa-26r-3Demail-2D6201-26l-3D01a-2D182-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=imu7eubHpSvVUGlixUPmJP7urM5pkp68t86fufO88w&s=DXpOvW19E19IgytxaDUdZVDcO8ivYg0zeVPuppdBK0g&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019123002nasa-26r-3Demail-2D6201-26l-3D01a-2D182-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=imu7eubHpSvVUGlixUPmJP7urM5pkp68t86fufO88w&s=DXpOvW19E19IgytxaDUdZVDcO8ivYg0zeVPuppdBK0g&e=>) (12/27) “The Mars 2020 rover is getting ready to head to the red planet next year, and we’re getting an inside look before takeoff. Eyewitness news reporter Tony Cabrera has more from the Jet Propulsion Laboratory in Pasadena.”

## Four Ways The Mars 2020 Rover Will Pave The Way For A Manned Mission

CNN <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019123002nasa-26r-3Demail-2D6201-26l-3D01b-2Dde0-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=imu7eubHpSvVUGlixbUPmJP7urM5pkp68t86fufO88w&s=DM3KeZYOZM\\_426j6KvGdh\\_a4JzgBtMEZEI0xkx7RDKE&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019123002nasa-26r-3Demail-2D6201-26l-3D01b-2Dde0-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=imu7eubHpSvVUGlixbUPmJP7urM5pkp68t86fufO88w&s=DM3KeZYOZM_426j6KvGdh_a4JzgBtMEZEI0xkx7RDKE&e=>) (12/27, Strickland) "When NASA's Mars 2020 rover lands on the Red Planet in February 2021, it will touch down in Jezero Crater, the site of a lake that existed 3.5 billion years ago. The next generation rover will build on the goals of previous robotic explorers by collecting the first samples of Mars, which would be returned to Earth at a later date."

## NASA Just Unveiled Its 2020 Mars Rover, And We're Beyond Excited

AFP <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019123002nasa-26r-3Demail-2D6201-26l-3D01c-2D790-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=imu7eubHpSvVUGlixbUPmJP7urM5pkp68t86fufO88w&s=UfFbbsmXHBAr7I3Ka4xACJJJA4wicYE\\_uOv0A2TfjoM&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019123002nasa-26r-3Demail-2D6201-26l-3D01c-2D790-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=imu7eubHpSvVUGlixbUPmJP7urM5pkp68t86fufO88w&s=UfFbbsmXHBAr7I3Ka4xACJJJA4wicYE_uOv0A2TfjoM&e=>) (12/29, Banguet) "The Mars 2020 rover, which sets off for the Red Planet next year, will not only search for traces of ancient life, but pave the way for future human missions, NASA scientists said Friday as they unveiled the vehicle. The rover has been constructed in a large, sterile room at the Jet Propulsion Laboratory in Pasadena, near Los Angeles, where its driving equipment was given its first successful test last week."

## Understanding Distant Dust In Other Solar Systems Is Key To Imaging Exo-Earths, Says NASA

Forbes <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019123002nasa-26r-3Demail-2D6201-26l-3D01d-2D403-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=imu7eubHpSvVUGlixbUPmJP7urM5pkp68t86fufO88w&s=5rV7LZas2QyUe0p4c5pBQ-jnhV1uqWwB-g2HcflwDE&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019123002nasa-26r-3Demail-2D6201-26l-3D01d-2D403-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=imu7eubHpSvVUGlixbUPmJP7urM5pkp68t86fufO88w&s=5rV7LZas2QyUe0p4c5pBQ-jnhV1uqWwB-g2HcflwDE&e=>) (12/27, Dorminey) "A film of fine dust in our own solar system and in solar systems like ours has long been thought to be a potential bugaboo in imaging extrasolar earthlike planets, say astronomers. But planetary scientists are still not sure about the size, shape and scope of our own zodiacal cloud (made up of dust particles shed from comets and asteroids in orbit around the Sun). And they are hardly certain how to characterize such clouds of dust around far-flung planetary systems. To better understand such solar system dust clouds, researchers at NASA's Jet Propulsion Laboratory in Pasadena are considering a small earth-orbiting CubeSat mission to better understand our solar system's cloud of fine zodiacal dust."

## Up Close With The Mars Rover

NPR <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019123002nasa-26r-3Demail-2D6201-26l-3D01e-2D98e-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=imu7eubHpSvVUGlixbUPmJP7urM5pkp68t86fufO88w&s=x5EdLuLuMR\\_VSTXxM1W\\_bxL24Gapf9GwbEzyCA\\_Ve4&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019123002nasa-26r-3Demail-2D6201-26l-3D01e-2D98e-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=imu7eubHpSvVUGlixbUPmJP7urM5pkp68t86fufO88w&s=x5EdLuLuMR_VSTXxM1W_bxL24Gapf9GwbEzyCA_Ve4&e=>) (12/28, Margolis) "NASA's Jet Propulsion Laboratory is almost ready to send another rover to Mars. It will launch from Cape Canaveral, Fla. next summer. But first, scientists in California have to pack it up and ship it across the country."

## NASA Shows Off Mars 2020 Rover Progress

USA Today <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019123002nasa-26r-3Demail-2D6201-26l-3D01f-2Df7d-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=imu7eubHpSvVUGlixbUPmJP7urM5pkp68t86fufO88w&s=zPZwG6V7Jxt1qpRQbrMPeU7bQk\\_Z9aZliHXt1BDySyl&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019123002nasa-26r-3Demail-2D6201-26l-3D01f-2Df7d-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=imu7eubHpSvVUGlixbUPmJP7urM5pkp68t86fufO88w&s=zPZwG6V7Jxt1qpRQbrMPeU7bQk_Z9aZliHXt1BDySyl&e=>)> (12/27) "Members of the media were given rare access on Friday to NASA's Jet Propulsion Laboratory 'clean room,' where the Mars 2020 rover is undergoing finishing touches."

#### NASA Gets \$35 Million To Make Sure Asteroids Don't Destroy Earth

Business Insider India <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019123002nasa-26r-3Demail-2D6201-26l-3D020-2De90-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=imu7eubHpSvVUGlixbUPmJP7urM5pkp68t86fufO88w&s=yZcVUr0P-Plp\\_-lghxkKZ4yYG46Vb6TfY1QIBx0rkil&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019123002nasa-26r-3Demail-2D6201-26l-3D020-2De90-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=imu7eubHpSvVUGlixbUPmJP7urM5pkp68t86fufO88w&s=yZcVUr0P-Plp_-lghxkKZ4yYG46Vb6TfY1QIBx0rkil&e=>)> (12/27, Gill) "US President Donald Trump's new 'minibus' fiscal spending bill for 2020 allots \$35.6 million to the National Aeronautics and Space Agency (NASA) to keep asteroids from hitting Earth. The Near-Earth Object Surveillance Mission (NEOSM) will send a telescope attached to an infrared camera into space to make asteroid detection more efficient."

#### Detecting Small Bits Of Space Junk With Laser Ranging Telescopes

Discover Magazine <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019123002nasa-26r-3Demail-2D6201-26l-3D021-2D7bb-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=imu7eubHpSvVUGlixbUPmJP7urM5pkp68t86fufO88w&s=pAP8AT1C5AD2mup1IA-MOfQBpoyrPOuEJtvGzSkGnc&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019123002nasa-26r-3Demail-2D6201-26l-3D021-2D7bb-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=imu7eubHpSvVUGlixbUPmJP7urM5pkp68t86fufO88w&s=pAP8AT1C5AD2mup1IA-MOfQBpoyrPOuEJtvGzSkGnc&e=>)> (12/27, Carlson) "Earth is surrounded by space junk, from fragments of old satellites to exploded spacecraft. The clutter isn't just an annoyance; it's a potential hazard for current and future spaceflight. Even small pieces of space junk can damage satellites and spacecraft as they whiz around Earth at up to about 17,500 mph. According to NASA, there are hundreds of thousands of pieces of space debris larger than a marble. And there are millions more pieces of debris too small to track. Some space junk is just paint flecks from spacecraft."

#### Mars 2020 Rover At JPL

KCBS-TV Los Angeles <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019123002nasa-26r-3Demail-2D6201-26l-3D022-2Dbf8-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=imu7eubHpSvVUGlixbUPmJP7urM5pkp68t86fufO88w&s=lrwFFUyNhKeAm-SegmgU\\_oBBck4vjAPIQDaOn4ASjt8&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019123002nasa-26r-3Demail-2D6201-26l-3D022-2Dbf8-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=imu7eubHpSvVUGlixbUPmJP7urM5pkp68t86fufO88w&s=lrwFFUyNhKeAm-SegmgU_oBBck4vjAPIQDaOn4ASjt8&e=>)> (12/27) "NASA's next rover to Mars is being tested out right now at the Jet Propulsion Laboratory and La Cienega Flintridge and we got a sneak peek today. Everyone who entered the clean room had to follow strict rules."

#### Various

#### The Year In American Spaceflight

Washington Post <<https://urldefense.proofpoint.com/v2/url?u=http->



3A\_\_mailview.bulletinintelligence.com\_mailview.aspx-3Fm-3D2019123002nasa-26r-3Demail-2D6201-26l-3D023-2Da9d-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=imu7eubHpSvVUGlixbUPmJP7urM5pkp68t86fufO88w&s=ccAtQZsBIFIQtfpVS1iyoVq6wXO1zZpAntOFIbl2PU&e=> (12/28, Newton, Davenport) "The first NASA commercial crew astronauts who will fly aboard the SpaceX Crew Dragon address employees at the SpaceX factory under the first Dragon capsule that went into space and returned to Earth. They are, from left, Mike Hopkins, Victor Glover, Bob Behnken, and Doug Hurley."

#### What I Taught 60,000 NASA Employees About Cybersecurity

Fox News <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019123002nasa-26r-3Demail-2D6201-26l-3D024-2Ddf4-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=imu7eubHpSvVUGlixbUPmJP7urM5pkp68t86fufO88w&s=KKOBaStk2IMkb0JGWL1IT--bfHHumZ2Up0NUg9vL3QU&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019123002nasa-26r-3Demail-2D6201-26l-3D024-2Ddf4-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=imu7eubHpSvVUGlixbUPmJP7urM5pkp68t86fufO88w&s=KKOBaStk2IMkb0JGWL1IT--bfHHumZ2Up0NUg9vL3QU&e=>) (12/27, Komando) "Working for NASA is a big job and a true honor. Every day, the talented men and women of NASA must think on a cosmic level because it's not just about space exploration and research. Sometimes it's about planetary safety, such as their plan to destroy Earth-ending asteroids. Tap or click here to read about NASA's innovative plan."

#### After An Amazing Decade In Space, These Are Humanity's Top Achievements

Ars Technica <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019123002nasa-26r-3Demail-2D6201-26l-3D025-2D352-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=imu7eubHpSvVUGlixbUPmJP7urM5pkp68t86fufO88w&s=vIN-aNuBNKwtfE25uTWKs7frn\\_OM5e9RIIPPSQtM3yY&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019123002nasa-26r-3Demail-2D6201-26l-3D025-2D352-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=imu7eubHpSvVUGlixbUPmJP7urM5pkp68t86fufO88w&s=vIN-aNuBNKwtfE25uTWKs7frn_OM5e9RIIPPSQtM3yY&e=>) (12/27, Berger) "As we approach the end of the 2010s, it's been fun to contemplate the coolest, most daring, and most significant feats of spaceflight during the last decade. Such an exercise leads inexorably to a simple conclusion—humans from around the world have done a lot of amazing things in space over the last 10 years. ... This is a subjective list, of course. I asked my followers on Twitter for suggestions on the 'coolest' or 'most exciting' or 'best' space missions this decade and got 175 replies. I spoke with several NASA and academic leaders for their input and got plenty more insight. But at the end of the day, this is my list of the things that I'd rank as the most inspiring and significant achievements."

#### NASA ISS Space To Ground

SpaceRef <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019123002nasa-26r-3Demail-2D6201-26l-3D026-2Da90-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=imu7eubHpSvVUGlixbUPmJP7urM5pkp68t86fufO88w&s=LzFY\\_RmT99yGzPR8k7kM7ZfAAlese6seOE2VYjAAYvk&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019123002nasa-26r-3Demail-2D6201-26l-3D026-2Da90-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=imu7eubHpSvVUGlixbUPmJP7urM5pkp68t86fufO88w&s=LzFY_RmT99yGzPR8k7kM7ZfAAlese6seOE2VYjAAYvk&e=>) (12/28) "NASA's Space to Ground is your weekly update on what's happening aboard the International Space Station."

#### Business Of Spaceflight: The 7 Biggest Moments Of The Year

CNN <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019123002nasa-26r-3Demail-2D6201-26l-3D027-2Da1d-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=imu7eubHpSvVUGlixbUPmJP7urM5pkp68t86fufO88w&s=t5dqVqvhrmLstpydZVjKuf1Kr-vBYb1sIR9Wu3SBAX4&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019123002nasa-26r-3Demail-2D6201-26l-3D027-2Da1d-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=imu7eubHpSvVUGlixbUPmJP7urM5pkp68t86fufO88w&s=t5dqVqvhrmLstpydZVjKuf1Kr-vBYb1sIR9Wu3SBAX4&e=>) (12/28, Wattles) "This year didn't end up exactly how many in the spaceflight industry had

hoped. Rocket launches were delayed. Explosions and development setbacks pushed off exciting milestones. NASA astronauts still don't have the option to fly aboard American spacecraft."

Other

#### What Is Trump's Space Force – And What Does It Mean For NASA?

Fortune <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019123002nasa-26r-3Demail-2D6201-26l-3D028-2Dd9a-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=imu7eubHpSvVUGlixbUPmJP7urM5pkp68t86fufO88w&s=\\_Mnio-x-ecDOba0b4-IIBY4CTiX4Wff4H-BISiTo-BA&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019123002nasa-26r-3Demail-2D6201-26l-3D028-2Dd9a-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=imu7eubHpSvVUGlixbUPmJP7urM5pkp68t86fufO88w&s=_Mnio-x-ecDOba0b4-IIBY4CTiX4Wff4H-BISiTo-BA&e=>) (12/27, Bachman, Tritten, Bloomberg) "Satellites make much of modern warfare possible, through GPS systems, wireless communications and sophisticated weather forecasting. This makes them tempting military targets. The U.S. Air Force has been responsible for defending American satellites and spacecraft. President Donald Trump said in 2018 that the perils required a separate military branch. More than a year later, House and Senate negotiators have reached a tentative agreement to fund Space Force, the first new military service in seven decades."

#### SpaceX Set For Record-breaking 2020 Manifest

NASA Space Flight <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019123002nasa-26r-3Demail-2D6201-26l-3D029-2D306-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=imu7eubHpSvVUGlixbUPmJP7urM5pkp68t86fufO88w&s=oxVZW\\_G6xz5gUx\\_Lvml6rgJJ-KjglkF3ojltzqIBdHw&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019123002nasa-26r-3Demail-2D6201-26l-3D029-2D306-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=imu7eubHpSvVUGlixbUPmJP7urM5pkp68t86fufO88w&s=oxVZW_G6xz5gUx_Lvml6rgJJ-KjglkF3ojltzqIBdHw&e=>) (12/27, Baylor) "SpaceX completed its final mission of the year on Dec. 16 with the successful launch of JCSAT-18/Kacific1 from Cape Canaveral, Fla. It was the company's 13th launch of 2019, SpaceX's lowest yearly launch total since 2016. However, the Falcon manifest for 2020 promises to be far busier."

#### SpaceX's Crew Dragon Faced A Bumpy Road To Launch

Discover Magazine <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019123002nasa-26r-3Demail-2D6201-26l-3D02a-2D36a-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=imu7eubHpSvVUGlixbUPmJP7urM5pkp68t86fufO88w&s=MlrHi1RWnT3wH9C-9ke4qTWBdUXNeFQqejUKmHlpeTU&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019123002nasa-26r-3Demail-2D6201-26l-3D02a-2D36a-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=imu7eubHpSvVUGlixbUPmJP7urM5pkp68t86fufO88w&s=MlrHi1RWnT3wH9C-9ke4qTWBdUXNeFQqejUKmHlpeTU&e=>) (12/29, Haynes) "Since the end of the space shuttle program in 2011, the U.S. has used Russian Soyuz spacecraft every time it wants to, well, shuttle humans to and from space. While NASA is busy working on its own solution, the agency has increasingly turned to private companies, such as Elon Musk's SpaceX, to cover its off-planet transportation needs."

#### China Launches Powerful Rocket In Boost For 2020 Mars Mission

AFP <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019123002nasa-26r-3Demail-2D6201-26l-3D02b-2D019-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=imu7eubHpSvVUGlixbUPmJP7urM5pkp68t86fufO88w&s=ARDS7q\\_Umvjle\\_Rg2\\_cC2vrhOaqwQdoKZ2JgaP07Q\\_Y&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019123002nasa-26r-3Demail-2D6201-26l-3D02b-2D019-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=imu7eubHpSvVUGlixbUPmJP7urM5pkp68t86fufO88w&s=ARDS7q_Umvjle_Rg2_cC2vrhOaqwQdoKZ2JgaP07Q_Y&e=>) (12/27) "China Friday launched one of the world's most powerful rockets in a major step forward for its planned mission to Mars in 2020. The heavy lift Long March 5 rocket carrying a test satellite payload blasted off from the Wenchang launch site on the southern island of Hainan at 8:45 pm (1245 GMT), a livestream from

state broadcaster CCTV showed.”

#### Final Rocket Booster Launches Russian Satellites Into Orbit

SPACE <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019123002nasa-26r-3Demail-2D6201-26l-3D02c-2D213-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=imu7eubHpSvVUGlixbUPmJP7urM5pkp68t86fufO88w&s=F4MnVrPbk\\_H\\_PSKCC3EOMobomWPh2IJOHPiZ-ggW\\_4k&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019123002nasa-26r-3Demail-2D6201-26l-3D02c-2D213-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=imu7eubHpSvVUGlixbUPmJP7urM5pkp68t86fufO88w&s=F4MnVrPbk_H_PSKCC3EOMobomWPh2IJOHPiZ-ggW_4k&e=>) (12/27, Malik) “The final Rocket booster converted from an intercontinental ballistic missile launched into space Friday (Dec. 27) carrying a trio Russian satellites and a military payload into orbit. The Rocket, a launch vehicle based on Russia’s RS-18 ballistic missile, launched three Gonets-M communications satellites into space from the Plesetsk Cosmodrome in northern Russia. The rocket also reportedly carried a military payload called Blits-M, a glass sphere designed to serve as a laser reflector, according to Russianspaceweb.com, which tracks the Russian space industry.”

#### Starlink Satellites Produce Wave Of UFO Sightings In The US

Gizmodo <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019123002nasa-26r-3Demail-2D6201-26l-3D02d-2D4f1-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=imu7eubHpSvVUGlixbUPmJP7urM5pkp68t86fufO88w&s=AYa-Ndvw7LaKFkv7KXjHj2kewJlrmfKPRV9NFalmLLw&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019123002nasa-26r-3Demail-2D6201-26l-3D02d-2D4f1-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=imu7eubHpSvVUGlixbUPmJP7urM5pkp68t86fufO88w&s=AYa-Ndvw7LaKFkv7KXjHj2kewJlrmfKPRV9NFalmLLw&e=>) (12/27, Mandelbaum) “Residents in northern Montana reported a string of strange lights dotting the sky. What looked like UFOs from an alien invasion has turned out to be another consequence of SpaceX’s Starlink satellite constellation. SpaceX launched 60 satellites into orbit back in May and another 60 in November 11 as part of the Starlink satellite constellation, meant to increase satellite internet access. But the reflective satellites are also producing bright trains of lights across the sky, stoking UFO fears for those unaware of the satellites and distracting astronomers.”

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## **[EXTERNAL] NASA Morning Briefing for Monday, February 24, 2020**

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#### NASA Satellite Images Reveal Dramatic Melting In Antarctica After Record Heat Wave

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"Earlier this month, temperatures in Antarctica appeared to reach a record-breaking 64.9 degrees Fahrenheit, matching the temperature in Los Angeles that day. New images released by NASA show the dramatic ice melt caused by the heat wave, a phenomenon that is becoming more and more common in the peninsula. NASA's Earth Observatory released two new images Friday by the Operational Land Imager on Landsat 8 that show the difference on the Eagle Island ice cap between February 4 and February 13."

#### Let The Moon Rush Begin

Washington Post <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020022402nasa-26r-3Demail-2D253c-26l-3D004-2D730-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=89NYKtCvYtjNvDIIm-tNDQBeShPEpUyto3LozqqlxzWE&s=05xa\\_W6MBee72B0AOxupsz9f2dU3zxErviDJ2GlpTF8&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020022402nasa-26r-3Demail-2D253c-26l-3D004-2D730-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=89NYKtCvYtjNvDIIm-tNDQBeShPEpUyto3LozqqlxzWE&s=05xa_W6MBee72B0AOxupsz9f2dU3zxErviDJ2GlpTF8&e=>)> (2/21, Hickam)  
"For those of us who have been involved with the movement of humankind into space across many years, these are exciting times. Since Vice President Pence's speech last March directing NASA to return astronauts to the moon by 2024, the U.S. space agency, commercial companies and other countries have quickened their efforts to learn more about Luna and prepare to land people there. It's as if the world was waiting for an opening bell and the vice president rang it."

#### Scientists Eye The Martian Underground In Search For Alien Life



NBC News <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020022402nasa-26r-3Demail-2D253c-26l-3D005-2Da48-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=89NYKtCvYtjNvDIIm-tNDQBeShPEpUyto3LozggqIxzWE&s=IUQkowd5mh19AD12BKm8YL3vLluZs25tCICDDw2pcfk&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020022402nasa-26r-3Demail-2D253c-26l-3D005-2Da48-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=89NYKtCvYtjNvDIIm-tNDQBeShPEpUyto3LozggqIxzWE&s=IUQkowd5mh19AD12BKm8YL3vLluZs25tCICDDw2pcfk&e=>)> (2/20) “The search for present-day life on Mars is heating up. And for good reason: An improved knowledge of Mars’ geologic diversity and history, a better appreciation of life in extreme environments here on Earth, and a sharp focus on sensitive life-detection measurement methods are all bolstering the Mars-life hunt, giving scientists more reason to think that they just might find something. Still, the issue of life on Mars demands new scientific concepts and knowledge concerning where to explore on the Red Planet and what to measure.”

#### InSight To Try To Push Mole Into Martian Surface

Space News <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020022402nasa-26r-3Demail-2D253c-26l-3D006-2D62b-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=89NYKtCvYtjNvDIIm-tNDQBeShPEpUyto3LozggqIxzWE&s=BQEEcyK-eTK89O7Hz3Q2\\_8-O2bUf7mQCYcspHUIELm4&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020022402nasa-26r-3Demail-2D253c-26l-3D006-2D62b-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=89NYKtCvYtjNvDIIm-tNDQBeShPEpUyto3LozggqIxzWE&s=BQEEcyK-eTK89O7Hz3Q2_8-O2bUf7mQCYcspHUIELm4&e=>)> (2/21, Foust) “Engineers plan to use the robotic arm on its InSight Mars lander to push a heat flow probe into the surface, acknowledging that they have ‘few alternatives’ if that effort fails. The Heat Flow and Physical Properties Package instrument team has spent nearly a year trying to get the instrument’s probe, or ‘mole,’ to burrow into the surface.”

#### Air Force Academy To Commission Space Force Officers

AP <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020022402nasa-26r-3Demail-2D253c-26l-3D007-2D79b-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=89NYKtCvYtjNvDIIm-tNDQBeShPEpUyto3LozggqIxzWE&s=3xdiXnuonx9LVBTY6hZvQeAETRI9yJPw3CHVzN1FyA4&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020022402nasa-26r-3Demail-2D253c-26l-3D007-2D79b-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=89NYKtCvYtjNvDIIm-tNDQBeShPEpUyto3LozggqIxzWE&s=3xdiXnuonx9LVBTY6hZvQeAETRI9yJPw3CHVzN1FyA4&e=>)> (2/23) “Graduates from the U.S. Air Force Academy in Colorado are expected to cross-commission into the Space Force this spring, military officials said. About 60 cadets would be commissioned into the new armed service branch, which formed in December with the signing of the \$738 billion National Defense Authorization Act, the Gazette reported.”

#### Flight

No content.

#### Earth

#### NASA Satellite Images Reveal Dramatic Melting In Antarctica After Record Heat Wave

CBS News <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020022402nasa-26r-3Demail-2D253c-26l-3D008-2Da80-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=89NYKtCvYtjNvDIIm-tNDQBeShPEpUyto3LozggqIxzWE&s=SL5CLkP96f0GDpHUe2-YduE\\_n8zJJZh0kozQVDpLuHQ&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020022402nasa-26r-3Demail-2D253c-26l-3D008-2Da80-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=89NYKtCvYtjNvDIIm-tNDQBeShPEpUyto3LozggqIxzWE&s=SL5CLkP96f0GDpHUe2-YduE_n8zJJZh0kozQVDpLuHQ&e=>)> (2/22, Lewis) “Earlier this month, temperatures in Antarctica appeared to reach a record-breaking 64.9 degrees Fahrenheit, matching the temperature in Los Angeles that day. New images released by NASA show the dramatic ice melt caused by the heat wave, a phenomenon that is becoming more and more common in the peninsula. NASA’s Earth Observatory released two new images Friday by the Operational Land Imager on Landsat 8 that show the difference on the Eagle Island ice cap between February 4 and February 13.”

## 'Antarctica Melts,' NASA Says, Showing Effects Of A Record Warm Spell

NPR <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020022402nasa-26r-3Demail-2D253c-26l-3D009-2Da6f-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=89NYKtCvYtjNvDIIm-tNDQBeShPEpUyto3LozggIxzWE&s=u0VAWGwS4SDgMw-1KseN4w1DsC9QzkWUfM1JpYrOOo&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020022402nasa-26r-3Demail-2D253c-26l-3D009-2Da6f-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=89NYKtCvYtjNvDIIm-tNDQBeShPEpUyto3LozggIxzWE&s=u0VAWGwS4SDgMw-1KseN4w1DsC9QzkWUfM1JpYrOOo&e=>) (2/21, Chappell) "Where there was a white ice cap, there are now brown blotches of land; melted snow and ice have created ponds of water. Those are the effects of the recent record high temperatures in Antarctica, according to NASA, which on Friday released stunning before-and-after satellite images of the northern Antarctic Peninsula."

## NASA Satellite Captures Antarctica Melting During Heat Wave

CNET News <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020022402nasa-26r-3Demail-2D253c-26l-3D00a-2D812-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=89NYKtCvYtjNvDIIm-tNDQBeShPEpUyto3LozggIxzWE&s=RgtP-33sAAAxuBELCbKiYrquUwEdKO3HGk69dmA6RuU&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020022402nasa-26r-3Demail-2D253c-26l-3D00a-2D812-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=89NYKtCvYtjNvDIIm-tNDQBeShPEpUyto3LozggIxzWE&s=RgtP-33sAAAxuBELCbKiYrquUwEdKO3HGk69dmA6RuU&e=>) (2/21, Kooser) "Antarctica, home to the coldest place on Earth, experienced a worrying heat wave earlier in February, possibly even setting a record high temperature for the normally frigid continent. A NASA satellite has taken stock of what that heat meant to the local ice cap and glaciers. NASA's Earth Observatory released two images from the agency's Landsat 8 satellite."

## NASA Reveals Shocking Ice Cap Melt In Antarctica After Record Heat

Vice <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020022402nasa-26r-3Demail-2D253c-26l-3D00b-2Dab3-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=89NYKtCvYtjNvDIIm-tNDQBeShPEpUyto3LozggIxzWE&s=p\\_j3P-HhFeLGHw9PWYkMNWn\\_jlUS0eJxIX3sLaXQy8o&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020022402nasa-26r-3Demail-2D253c-26l-3D00b-2Dab3-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=89NYKtCvYtjNvDIIm-tNDQBeShPEpUyto3LozggIxzWE&s=p_j3P-HhFeLGHw9PWYkMNWn_jlUS0eJxIX3sLaXQy8o&e=>) (2/23) "Two weeks ago, the temperature in Antarctica topped 18.3°C (64.9°F), making it the hottest weather on record for the icy southern continent. NASA has now released dramatic new images of the extensive ice melt caused by the recent heatwave, which ran from February 5 to 13. Captured by NASA's Landsat 8 satellite, the before-and-after snapshots expose the rapid greening of Eagle Island, a landmass at the tip of the Antarctic Peninsula, over the course of nine days. The island is about 40 kilometers (25 miles) from Esperanza Base, where the record-breaking temperature was recorded."

## See The Impacts Of Antarctica's Heat Wave In Stunning Before-and-after Photos

Mashable <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020022402nasa-26r-3Demail-2D253c-26l-3D00c-2Db47-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=89NYKtCvYtjNvDIIm-tNDQBeShPEpUyto3LozggIxzWE&s=ZX4TtWIUCy\\_zcRnAljpMZDw73iEsfcsZiTvQl6aXpVc&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020022402nasa-26r-3Demail-2D253c-26l-3D00c-2Db47-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=89NYKtCvYtjNvDIIm-tNDQBeShPEpUyto3LozggIxzWE&s=ZX4TtWIUCy_zcRnAljpMZDw73iEsfcsZiTvQl6aXpVc&e=>) (2/22) "On Feb. 6, the ongoing impacts of climate change delivered a record-setting 65-degree day in the icy continent of Antarctica. ... The light blue patch visible at the center of the island in the later photo is also notable as an example of how the snow is melting. Mauri Pelto, a glaciologist at Nichols College, identified the blue patch as a 'melt pond,' or a pool of water that formed on top of the ice as snow melted, in a report from NASA's Earth Observatory."

## About 40 Million People Get Water From The Colorado River. Studies Show It's Drying Up.

Detroit Free Press <<https://urldefense.proofpoint.com/v2/url?u=http->

3A\_\_mailview.bulletinintelligence.com\_mailview.aspx-3Fm-3D2020022402nasa-26r-3Demail-2D253c-26l-3D00d-2D45e-26t-

3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=89NYKtCvYtjNvDIIm-tNDQBeShPEpUyto3LozggqIxzWE&s=2lmsCegHOMEeGKITrNp\_V5D\_tugD-wJYKsNGeFuf1CE&e=> (2/22) "Scientists have documented how climate change is sapping the Colorado River, and new research shows the river is so sensitive to warming that it could lose about one-fourth of its flow by 2050 as temperatures continue to climb. ... They used measurements of albedo across the Upper Colorado River Basin recorded over decades by instruments called MODIS (short for Moderate Resolution Imaging Spectroradiometer), which orbit the Earth aboard two NASA satellites."

#### Canary Islands Engulfed By 'Apocalyptic' Sandstorm Seen From SPACE On NASA Satellite

Daily Express (UK) <[https://urldefense.proofpoint.com/v2/url?u=http-](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020022402nasa-26r-3Demail-2D253c-26l-3D00e-2D71e-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=89NYKtCvYtjNvDIIm-tNDQBeShPEpUyto3LozggqIxzWE&s=hX80ZQxnePu9sSMjF2iXRh9_rl01su8ZNbvaC0d3yJA&e=>)

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3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=89NYKtCvYtjNvDIIm-tNDQBeShPEpUyto3LozggqIxzWE&s=hX80ZQxnePu9sSMjF2iXRh9\_rl01su8ZNbvaC0d3yJA&e=> (2/23, Smith) "A sandstorm has hit the Canary Islands yesterday, blocking out the sun in tourist hotspots like Fuerteventura and Lanzarote. The sky turned orange across the islands, prompting many tourists to describe the scene as 'apocalyptic.' The sandstorm was so huge that even NASA satellites picked up the extreme weather event from space."

#### A Large 560-Foot Asteroid Will Shoot Past Earth Today At 33,700 MPH

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3D2020022402nasa-26r-3Demail-2D253c-26l-3D00f-2D6cf-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=89NYKtCvYtjNvDIIm-tNDQBeShPEpUyto3LozggqIxzWE&s=a7LQTEHM9I7hxZDs3zltsytMIZ7-dTGIG6A7e6QCEx4&e=> (2/23) "A large,

pyramid-sized asteroid is expected to shoot past Earth on Sunday morning, NASA scientists have announced. The asteroid is believed to be quite massive, boasting an estimated diameter of as much as 556.7 feet."

#### Asteroid Alert: NASA Tracks A 557FT Asteroid On Earth 'Close Approach'

Daily Express (UK) <[https://urldefense.proofpoint.com/v2/url?u=http-](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020022402nasa-26r-3Demail-2D253c-26l-3D010-2Db05-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=89NYKtCvYtjNvDIIm-tNDQBeShPEpUyto3LozggqIxzWE&s=VeqntADvsIVuKTyKaMQusfbMeHrqCy8JJqDBDveZIUy&e=>)

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3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=89NYKtCvYtjNvDIIm-tNDQBeShPEpUyto3LozggqIxzWE&s=VeqntADvsIVuKTyKaMQusfbMeHrqCy8JJqDBDveZIUy&e=> (2/21, Kettley)

"Asteroid BR1 is a fast-moving NEO or near-Earth object crossing Earth's orbit of the Sun. The space rock was first spotted by NASA in the solar system on January 17, and the space agency has tracked the asteroid more than 30 times since."

#### NASA Says An Asteroid The Size Of St Paul's Cathedral Will Skim Past Earth Today

Daily Mirror (UK) <[https://urldefense.proofpoint.com/v2/url?u=http-](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020022402nasa-26r-3Demail-2D253c-26l-3D011-2D267-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=89NYKtCvYtjNvDIIm-tNDQBeShPEpUyto3LozggqIxzWE&s=VeqntADvsIVuKTyKaMQusfbMeHrqCy8JJqDBDveZIUy&e=>)

3A\_\_mailview.bulletinintelligence.com\_mailview.aspx-3Fm-3D2020022402nasa-26r-3Demail-2D253c-26l-3D011-2D267-26t-

3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=89NYKtCvYtjNvDIIm-tNDQBeShPEpUyto3LozggqIxzWE&s=VeqntADvsIVuKTyKaMQusfbMeHrqCy8JJqDBDveZIUy&e=>

tNDQBeShPEpUyto3LozggqIxzWE&s=3BK9Czn1OuSchNR896c9NMbmt4zvnB9pyJv3YzIggHU&e=> (2/23, Best) "A huge asteroid is set to whizz past our planet today, NASA has revealed. The asteroid, dubbed 2020 BR10, is set to fly past Earth at around 14:55 GMT today, according to the space agency. NASA predicts that the space rock is between 75 and 170 metres in diameter."

#### Using Satellites And Machine Learning To Protect Food Security In Eastern Africa

SpaceRef <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020022402nasa-26r-3Demail-2D253c-26l-3D012-2D969-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=89NYKtCvYtjNvDIIm-tNDQBeShPEpUyto3LozggqIxzWE&s=HcmL01F0iRRJSuYFYDV3ZQL-K\\_xqHt3ZA17vv8gBH7M&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020022402nasa-26r-3Demail-2D253c-26l-3D012-2D969-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=89NYKtCvYtjNvDIIm-tNDQBeShPEpUyto3LozggqIxzWE&s=HcmL01F0iRRJSuYFYDV3ZQL-K_xqHt3ZA17vv8gBH7M&e=>) (2/21) "For many African countries, lack of food is one of the most, pressing issues today. Dr. Catherine Nakalembe, Africa Program Lead for NASA Harvest, is helping countries there build systems to monitor crops based on NASA's and European Space Agency's free satellite data, allowing them to make life-saving decisions related to food security sooner and with a deeper evidence-base. Speaking at the AAAS meeting in Seattle on Saturday at 8 am in room 611, Nakalembe will describe NASA's involvement in agriculture and food security across the globe and new efforts to do crop health assessments using machine learning."

#### Humans in Space

##### How To Optimize Your Headspace On A Mission To Mars

Aeon Magazine <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020022402nasa-26r-3Demail-2D253c-26l-3D013-2D0e8-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=89NYKtCvYtjNvDIIm-tNDQBeShPEpUyto3LozggqIxzWE&s=Jtc15\\_Lbbgv5Kw\\_VWY3QsrkgbQ\\_UkFdJ9ndTse7Y0&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020022402nasa-26r-3Demail-2D253c-26l-3D013-2D0e8-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=89NYKtCvYtjNvDIIm-tNDQBeShPEpUyto3LozggqIxzWE&s=Jtc15_Lbbgv5Kw_VWY3QsrkgbQ_UkFdJ9ndTse7Y0&e=>) (2/22) "Imagine being confined to a metal cell with a couple of other people and few amenities for months or even years. Maybe after that, you'll be moved to a new compound, but you still have no privacy and extremely limited communication with your family and anyone else in the outside world. You feel both crowded and lonely at the same time, and yet no one comes to treat your emerging mental-health problems. ... Despite years of research by NASA and others, scientists have little insight into the psychological, neurological, and sociological problems that will inevitably afflict space travelers battling depression, loneliness, anxiety, stress, and personality clashes many millions of miles away from home."

#### Moon to Mars

##### Let The Moon Rush Begin

Washington Post <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020022402nasa-26r-3Demail-2D253c-26l-3D014-2D185-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=89NYKtCvYtjNvDIIm-tNDQBeShPEpUyto3LozggqIxzWE&s=3WKhWLUSUcTXbhQSMTfpz592WLUcNay\\_AGg8JYdkRDQ&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020022402nasa-26r-3Demail-2D253c-26l-3D014-2D185-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=89NYKtCvYtjNvDIIm-tNDQBeShPEpUyto3LozggqIxzWE&s=3WKhWLUSUcTXbhQSMTfpz592WLUcNay_AGg8JYdkRDQ&e=>) (2/21, Hickam) "For those of us who have been involved with the movement of humankind into space across many years, these are exciting times. Since Vice President Pence's speech last March directing NASA to return astronauts to the moon by 2024, the U.S. space agency, commercial companies and other countries have quickened their efforts to learn more about Luna and prepare to land people there. It's as if the world was waiting for an opening bell and the vice president rang it."

## Dream Job? NASA Is Hiring New Astronauts For Moon Mission

Forbes <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020022402nasa-26r-3Demail-2D253c-26l-3D015-2Df9a-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=89NYKtCvYtjNvDIIm-tNDQBeShPEpUyto3LozggqIxzWE&s=WTbnMqzbVrUpOQWCyFTag6IzflZ82LyL0wJf52o77yw&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020022402nasa-26r-3Demail-2D253c-26l-3D015-2Df9a-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=89NYKtCvYtjNvDIIm-tNDQBeShPEpUyto3LozggqIxzWE&s=WTbnMqzbVrUpOQWCyFTag6IzflZ82LyL0wJf52o77yw&e=>) (2/23, Asquith)  
“For anyone reminiscing about their childhood, you may remember being asked at school ‘what do you want to be when you’re older?’ ... NASA is now looking for new astronauts to reach the South Pole of the moon by 2024. The American space agency wants the first person to reach the southern pole of the moon to be a woman, with a male also joining on the mission. Applications are set to open in just over a week on March 2.”

## Autonomous Spacecraft Are The Next Step For NASA And The ESA

Medium <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020022402nasa-26r-3Demail-2D253c-26l-3D016-2D3fa-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=89NYKtCvYtjNvDIIm-tNDQBeShPEpUyto3LozggqIxzWE&s=D0rDYyzRc0\\_\\_N455aybunYw0N2J9cwfXO4i11Wbe2zY&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020022402nasa-26r-3Demail-2D253c-26l-3D016-2D3fa-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=89NYKtCvYtjNvDIIm-tNDQBeShPEpUyto3LozggqIxzWE&s=D0rDYyzRc0__N455aybunYw0N2J9cwfXO4i11Wbe2zY&e=>) (2/22, Neuron)  
“Both NASA and the European Space Agency (ESA) have a lot of ambitious plans on the horizon, yet none of these are feasible without autonomous spacecraft that can ‘think’ on their own. While autonomous vehicles are hailed as the future of transportation on Earth, astrophysicists have also been quietly developing spacecraft that can respond to their changing and unpredictable surroundings without the intervention of humans. ... NASA and the ESA hope to employ autonomous spacecraft as a planetary defense shield, to explore Mars, to begin building a moon colony, and to avert the Kessler syndrome.”

## Mars Reconnaissance Orbiter Takes Brief Maintenance Vacation

Digital Trends <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020022402nasa-26r-3Demail-2D253c-26l-3D017-2Dede-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=89NYKtCvYtjNvDIIm-tNDQBeShPEpUyto3LozggqIxzWE&s=ss9SIYUi8eHZidQYgLN\\_cdMXYYnG9mYFaD76QqpK6\\_E&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020022402nasa-26r-3Demail-2D253c-26l-3D017-2Dede-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=89NYKtCvYtjNvDIIm-tNDQBeShPEpUyto3LozggqIxzWE&s=ss9SIYUi8eHZidQYgLN_cdMXYYnG9mYFaD76QqpK6_E&e=>) (2/22, Torbet)  
“Rovers like Curiosity and the upcoming Mars 2020 might get the most attention, but spacecraft in orbit around the planet play a vital role in scientific investigations of Mars as well. ... Now, the MRO is taking a short break, going on an almost two-week hiatus from its science mission for maintenance to be performed. ‘The maintenance work involves updating battery parameters in the spacecraft’s flash memory – a rare step that has been done only twice before in the orbiter’s 15 years of flight,’ NASA explained in a blog post.”

## Solar System and Beyond

### Scientists Eye The Martian Underground In Search For Alien Life

NBC News <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020022402nasa-26r-3Demail-2D253c-26l-3D018-2Da49-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=89NYKtCvYtjNvDIIm-tNDQBeShPEpUyto3LozggqIxzWE&s=n2a9-0F4qVES1Dd6kTbtXIAtfyAlhk6WnJFx\\_ZPkcow&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020022402nasa-26r-3Demail-2D253c-26l-3D018-2Da49-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=89NYKtCvYtjNvDIIm-tNDQBeShPEpUyto3LozggqIxzWE&s=n2a9-0F4qVES1Dd6kTbtXIAtfyAlhk6WnJFx_ZPkcow&e=>) (2/20)  
“The search for present-day life on Mars is heating up. And for good reason: An improved knowledge of Mars’ geologic diversity and history, a better appreciation of life in extreme environments here on Earth, and a sharp focus on sensitive life-detection measurement methods are all

bolstering the Mars-life hunt, giving scientists more reason to think that they just might find something. Still, the issue of life on Mars demands new scientific concepts and knowledge concerning where to explore on the Red Planet and what to measure.”

#### InSight To Try To Push Mole Into Martian Surface

Space News <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020022402nasa-26r-3Demail-2D253c-26l-3D019-2D267-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=89NYKtCvYtjNvDIIm-tNDQBeShPEpUyto3LozggqIxzWE&s=hQi7pHRf726s0yLcz\\_J2e5zQdnp7fkWVsJATSUn17kl&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020022402nasa-26r-3Demail-2D253c-26l-3D019-2D267-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=89NYKtCvYtjNvDIIm-tNDQBeShPEpUyto3LozggqIxzWE&s=hQi7pHRf726s0yLcz_J2e5zQdnp7fkWVsJATSUn17kl&e=>) (2/21, Foust)  
“Engineers plan to use the robotic arm on its InSight Mars lander to push a heat flow probe into the surface, acknowledging that they have ‘few alternatives’ if that effort fails. The Heat Flow and Physical Properties Package instrument team has spent nearly a year trying to get the instrument’s probe, or ‘mole,’ to burrow into the surface.”

#### InSight Lander Will Try Robotic Elbow Grease To Help Stalled Heat Probe

Astronomy Now (UK) <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020022402nasa-26r-3Demail-2D253c-26l-3D01a-2D782-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=89NYKtCvYtjNvDIIm-tNDQBeShPEpUyto3LozggqIxzWE&s=P3\\_6zmq4tZwiAaR5did-NIGFJPQ13dN4TN4HPHk7QEI&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020022402nasa-26r-3Demail-2D253c-26l-3D01a-2D782-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=89NYKtCvYtjNvDIIm-tNDQBeShPEpUyto3LozggqIxzWE&s=P3_6zmq4tZwiAaR5did-NIGFJPQ13dN4TN4HPHk7QEI&e=>) (2/22)  
“After nearly a year trying to coax the InSight Mars lander’s stalled heat probe into hammering its way up to 5 metres (16 feet) below the red planet’s surface, engineers have decided to apply a bit of elbow grease, using the lander’s robot arm to carefully push on the top of the instrument as it attempts to pile drive its way down.”

#### NASA Will Use Mars InSight Lander’s Robotic Arm To Push Its ‘Mole’

SlashGear <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020022402nasa-26r-3Demail-2D253c-26l-3D01b-2D466-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=89NYKtCvYtjNvDIIm-tNDQBeShPEpUyto3LozggqIxzWE&s=SqX4N7GMhYnXt7CpnkU0bCYn1jhDc3OfuJC29\\_sxlhA&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020022402nasa-26r-3Demail-2D253c-26l-3D01b-2D466-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=89NYKtCvYtjNvDIIm-tNDQBeShPEpUyto3LozggqIxzWE&s=SqX4N7GMhYnXt7CpnkU0bCYn1jhDc3OfuJC29_sxlhA&e=>) (2/21)  
“NASA is ready to take more drastic actions to help the ‘mole’ instrument that has been attempting to burrow into the Martian surface for around a year. The mini pile driver is part of the InSight Mars lander, which is equipped with a robotic arm and a variety of other instruments. The plan? NASA says its team will use the lander’s arm to push on the mole, hopefully helping it dig down through the surface.”

#### Here’s NASA’s New Idea To Get Its Stubborn Martian Drill To Work

Mashable <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020022402nasa-26r-3Demail-2D253c-26l-3D01c-2Dcc7-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=89NYKtCvYtjNvDIIm-tNDQBeShPEpUyto3LozggqIxzWE&s=UiNlkmsVdj\\_N7u-K69ttWOTQGI\\_yxVJSm23hUEYliPg&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020022402nasa-26r-3Demail-2D253c-26l-3D01c-2Dcc7-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=89NYKtCvYtjNvDIIm-tNDQBeShPEpUyto3LozggqIxzWE&s=UiNlkmsVdj_N7u-K69ttWOTQGI_yxVJSm23hUEYliPg&e=>) (2/23, Kaufman)  
“Well over a year after NASA’s InSight lander parachuted down to the Martian surface, the space agency still hasn’t been able to drill too far into the red soil. ... On Friday, NASA announced a new idea. From tens of millions of miles away, the space agency will direct the InSight lander to take its robotic arm (which has a black shovel on the end), to ‘push’ on top of the drill.”

#### NASA Is Desperately Trying To Get Its Mars Mole Digging Again

BGR <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020022402nasa-26r-3Demail-2D253c-26l-3D01d-2Dce9-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=89NYKtCvYtjNvDlIm-tNDQBeShPEpUyto3LozggqIxzWE&s=tIC6e5TSYDkduZ-gEXiNV-mEZtHXWObmKHTdg\\_9uR40&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020022402nasa-26r-3Demail-2D253c-26l-3D01d-2Dce9-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=89NYKtCvYtjNvDlIm-tNDQBeShPEpUyto3LozggqIxzWE&s=tIC6e5TSYDkduZ-gEXiNV-mEZtHXWObmKHTdg_9uR40&e=>) (2/23, Wehner) "NASA's InSight mission to Mars has been successful on a number of fronts, but there's no denying that there's been one very big disappointment: the mole. A self-burying instrument designed to hammer itself up to 16 feet into the surface of Mars has repeatedly fallen well short of this goal. In fact, at the moment it's basically just sitting on the surface."

#### Jupiter Has Far More Water In Its Atmosphere Than We Thought

Digital Trends <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020022402nasa-26r-3Demail-2D253c-26l-3D01e-2D356-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=89NYKtCvYtjNvDlIm-tNDQBeShPEpUyto3LozggqIxzWE&s=IIIX9oI2H0FE0C3M4rLGLQCq8YfZyDBDjBKHPyhu0tQ&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020022402nasa-26r-3Demail-2D253c-26l-3D01e-2D356-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=89NYKtCvYtjNvDlIm-tNDQBeShPEpUyto3LozggqIxzWE&s=IIIX9oI2H0FE0C3M4rLGLQCq8YfZyDBDjBKHPyhu0tQ&e=>) (2/22) "NASA's Juno spacecraft has made a significant discovery about the atmosphere of Jupiter – that it contains water, with more water clustered in some areas than in others. The new research shows that water makes up approximately 0.25% of Jupiter's atmosphere, which is far more than previous results indicated. Previous examinations by Voyager and other craft showed that there was lightning on Jupiter, which requires water, but it was not previously possible to accurately estimate how much water was present."

#### Surprise! There's More Water On Jupiter Than Anyone Thought

SPACE <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020022402nasa-26r-3Demail-2D253c-26l-3D01f-2Df17-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=89NYKtCvYtjNvDlIm-tNDQBeShPEpUyto3LozggqIxzWE&s=2T42OpNjAkhN\\_yKu6\\_mMBDOfoh-fbMrVbvXVYfJD0A&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020022402nasa-26r-3Demail-2D253c-26l-3D01f-2Df17-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=89NYKtCvYtjNvDlIm-tNDQBeShPEpUyto3LozggqIxzWE&s=2T42OpNjAkhN_yKu6_mMBDOfoh-fbMrVbvXVYfJD0A&e=>) (2/22) "Jupiter appears to have more water than anyone expected. Newly released data from NASA's Juno probe shows that water may make up about 0.25% of the molecules in the atmosphere over Jupiter's equator. While that doesn't sound like much, the calculation is based on a prevalence of water's components, hydrogen and oxygen, three times more than at the sun."

#### NASA 'Exploring Hell' Challenge Seeks Sensor Designs From Public

SlashGear <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020022402nasa-26r-3Demail-2D253c-26l-3D020-2D5f6-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=89NYKtCvYtjNvDlIm-tNDQBeShPEpUyto3LozggqIxzWE&s=A9ocy8MhPHG7V6UBYb\\_XYOEEoIMoxniobg7--QoDdOc&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020022402nasa-26r-3Demail-2D253c-26l-3D020-2D5f6-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=89NYKtCvYtjNvDlIm-tNDQBeShPEpUyto3LozggqIxzWE&s=A9ocy8MhPHG7V6UBYb_XYOEEoIMoxniobg7--QoDdOc&e=>) (2/23) "NASA is asking the public to submit sensor design concepts as part of its new 'Exploring Hell: Avoiding Obstacles on a Clockwork Rover' challenge. The sensor would be designed to help a rover avoid obstacles that it may encounter on Venus, a planet with an extreme surface temperature of 840F. The challenge comes from NASA's Jet Propulsion Laboratory, which recently received a grant under the space agency's Innovative Advanced Concepts program."

#### NASA Wants Your Help Designing A Venus Rover Concept

Space Daily <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020022402nasa-26r-3Demail-2D253c-26l-3D021-2D3e1-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=89NYKtCvYtjNvDlIm-tNDQBeShPEpUyto3LozggqIxzWE&s=IIIX9oI2H0FE0C3M4rLGLQCq8YfZyDBDjBKHPyhu0tQ&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020022402nasa-26r-3Demail-2D253c-26l-3D021-2D3e1-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=89NYKtCvYtjNvDlIm-tNDQBeShPEpUyto3LozggqIxzWE&s=IIIX9oI2H0FE0C3M4rLGLQCq8YfZyDBDjBKHPyhu0tQ&e=>)

3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=89NYKtCvYtjNvDIIm-tNDQBeShPEpUyto3Lozggq|xzWE&s=rnLprxH0ipkj\_fd2GidL2yOVuc1Lfl8U7kl0ek8TKYI&e=> (2/24) "NASA's Jet Propulsion Laboratory in Pasadena, California, under a grant from the NASA Innovative Advanced Concepts program, is running a public challenge to develop an obstacle avoidance sensor for a possible future Venus rover. The 'Exploring Hell: Avoiding Obstacles on a Clockwork Rover' challenge is seeking the public's designs for a sensor that could be incorporated into the design concept."

#### How To Deflect An Asteroid

Science Daily <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020022402nasa-26r-3Demail-2D253c-26l-3D022-2D261-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=89NYKtCvYtjNvDIIm-tNDQBeShPEpUyto3Lozggq|xzWE&s=zTBeniCMM8W4ilTG3n-o-R8zcTlicW4IMnSckELR3rw&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020022402nasa-26r-3Demail-2D253c-26l-3D022-2D261-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=89NYKtCvYtjNvDIIm-tNDQBeShPEpUyto3Lozggq|xzWE&s=zTBeniCMM8W4ilTG3n-o-R8zcTlicW4IMnSckELR3rw&e=>) (2/19) "On April 13, 2029, an icy chunk of space rock, wider than the Eiffel Tower is tall, will streak by Earth at 30 kilometers per second, grazing the planet's sphere of geostationary satellites. It will be the closest approach by one of the largest asteroids crossing Earth's orbit in the next decade. Now MIT researchers have devised a framework for deciding which type of mission would be most successful in deflecting an incoming asteroid. ... The researchers applied their method to Apophis, and Bennu, another near-Earth asteroid which is the target of OSIRIS-REx, an operational NASA mission that plans to return a sample of Bennu's surface material to Earth in 2023."

#### Hubble Sheds Light On The Sombrero Galaxy's Surprising Past

Astronomy Now (UK) <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020022402nasa-26r-3Demail-2D253c-26l-3D023-2D120-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=89NYKtCvYtjNvDIIm-tNDQBeShPEpUyto3Lozggq|xzWE&s=WhQZKxrpBtC2-TukSdjMMFLSxJ0wD\\_8TcTeQ4rPMwko&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020022402nasa-26r-3Demail-2D253c-26l-3D023-2D120-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=89NYKtCvYtjNvDIIm-tNDQBeShPEpUyto3Lozggq|xzWE&s=WhQZKxrpBtC2-TukSdjMMFLSxJ0wD_8TcTeQ4rPMwko&e=>) (2/23) "Surprising new data from NASA's Hubble Space Telescope suggests the smooth, settled "brim" of the Sombrero galaxy's disk may be concealing a turbulent past. Hubble's sharpness and sensitivity resolves tens of thousands of individual stars in the Sombrero's vast, extended halo, the region beyond a galaxy's central portion, typically made of older stars."

#### MIT Scientists Create Doomsday AI That Will Take Over During End Times

Daily Mail (UK) <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020022402nasa-26r-3Demail-2D253c-26l-3D024-2D88a-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=89NYKtCvYtjNvDIIm-tNDQBeShPEpUyto3Lozggq|xzWE&s=SwjAslqvCGD6EZpPe6UeP8gsZ6\\_PklzL8hYKXN3vLP0&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020022402nasa-26r-3Demail-2D253c-26l-3D024-2D88a-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=89NYKtCvYtjNvDIIm-tNDQBeShPEpUyto3Lozggq|xzWE&s=SwjAslqvCGD6EZpPe6UeP8gsZ6_PklzL8hYKXN3vLP0&e=>) (2/21, Thomsen) "A team of scientists at MIT have developed a computer program that will help humans decide how to best deal with the end of the world, so long as that comes in form of a catastrophic asteroid collision. Experts say there as many as two or three new asteroids, sometimes called 'Near Earth Objects,' discovered every night. ... The most effective method, according to a 2007 NASA recommendation to Congress, is to send a nuclear missile to detonate on the asteroid surface."

#### NASA Stares Into Dark, Freaky Pit On Mars

SFGate (CA) <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020022402nasa-26r-3Demail-2D253c-26l-3D025-2D12d-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=89NYKtCvYtjNvDIIm-tNDQBeShPEpUyto3Lozggq|xzWE&s=rnLprxH0ipkj\\_fd2GidL2yOVuc1Lfl8U7kl0ek8TKYI&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020022402nasa-26r-3Demail-2D253c-26l-3D025-2D12d-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=89NYKtCvYtjNvDIIm-tNDQBeShPEpUyto3Lozggq|xzWE&s=rnLprxH0ipkj_fd2GidL2yOVuc1Lfl8U7kl0ek8TKYI&e=>)



3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=89NYKtCvYtjNvDIIm-tNDQBeShPEpUyto3LozggqIxzWE&s=0NkpUln6IFTQK3aTpLke7IpiUj9PxVOco50rk4l5Fiw&e=> (2/21) "I used to have reoccurring nightmares about falling into a pit. A new image from NASA's Mars Reconnaissance Orbiter spacecraft (aka the MRO) pushes all my childhood scary-dream buttons. ... The HiRise team at the University of Arizona performed a brightness enhancement to see into the abyss."

Space Tech

Method For Detecting Exoplanet Atmospheres Using Radio Waves

Digital Trends <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020022402nasa-26r-3Demail-2D253c-26l-3D026-2D82e-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=89NYKtCvYtjNvDIIm-tNDQBeShPEpUyto3LozggqIxzWE&s=PbbRRIS1K41lWf2eX\\_6rRP3QceDEfSKWzbl2t3JRiyQ&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020022402nasa-26r-3Demail-2D253c-26l-3D026-2D82e-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=89NYKtCvYtjNvDIIm-tNDQBeShPEpUyto3LozggqIxzWE&s=PbbRRIS1K41lWf2eX_6rRP3QceDEfSKWzbl2t3JRiyQ&e=>) (2/23) "In the last decade, hunting for distant exoplanets has become a large focus of astronomy, with projects like NASA's planet-hunting satellite TESS locating many new planets, including some potentially habitable ones, and the European Space Agency's CHEOPS satellite recently launched to search for even more. ... A team of astronomers from the Netherlands Institute for Radio Astronomy has come up with a way to examine the interactions of planets and their stars to discern what kind of environments the planets might have."

Solar Orbiter Is Already Starting To Observe The Sun

Universe Today <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020022402nasa-26r-3Demail-2D253c-26l-3D027-2Db4c-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=89NYKtCvYtjNvDIIm-tNDQBeShPEpUyto3LozggqIxzWE&s=KsjAyEeUH6ybjOebKjQ3upK1Beqhxu\\_uTQrf5eQBPKw&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020022402nasa-26r-3Demail-2D253c-26l-3D027-2Db4c-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=89NYKtCvYtjNvDIIm-tNDQBeShPEpUyto3LozggqIxzWE&s=KsjAyEeUH6ybjOebKjQ3upK1Beqhxu_uTQrf5eQBPKw&e=>) (2/23) "On February 10th, 2020, the ESA's Solar Orbiter (SoLO) launched and began making its way towards our Sun. This mission will spend the next seven years investigating the Sun's uncharted polar regions to learn more about how the Sun works. This information is expected to reveal things that will help astronomers better predict changes in solar activity and 'space weather.' ... In the coming years, the SoLO mission will be working collaboratively with NASA's Parker Solar Probe to provide the most detailed picture of the Sun in the history of solar astronomy."

Hackers Could Shut Down Satellites – Or Turn Them Into Weapons

The Conversation <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020022402nasa-26r-3Demail-2D253c-26l-3D028-2D75c-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=89NYKtCvYtjNvDIIm-tNDQBeShPEpUyto3LozggqIxzWE&s=AnJHc6yF2\\_7XRr-wr1dUeleUEXUpWqypkxNAF8Hopzs&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020022402nasa-26r-3Demail-2D253c-26l-3D028-2D75c-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=89NYKtCvYtjNvDIIm-tNDQBeShPEpUyto3LozggqIxzWE&s=AnJHc6yF2_7XRr-wr1dUeleUEXUpWqypkxNAF8Hopzs&e=>) (2/22, Akoto) "Last month, SpaceX became the operator of the world's largest active satellite constellation. ... The race to put satellites in space is on, with Amazon, U.K.-based OneWeb and other companies chomping at the bit to place thousands of satellites in orbit in the coming months. ... Amid all the fanfare, a critical danger has flown under the radar: the lack of cybersecurity standards and regulations for commercial satellites, in the U.S. and internationally. ... In 2008, hackers, possibly from China, reportedly took full control of two NASA satellites, one for about two minutes and the other for about nine minutes."

Various

## NASA Selects Proposals For Student Aeronautics, Space Projects

Space Daily <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020022402nasa-26r-3Demail-2D253c-26l-3D029-2D97f-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=89NYKtCvYtjNvDIIm-tNDQBeShPEpUyto3LozggqIxzWE&s=5lzCKRpL69AIPXB8IQTbZOKuKRvus9jEoH4QquppwDs&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020022402nasa-26r-3Demail-2D253c-26l-3D029-2D97f-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=89NYKtCvYtjNvDIIm-tNDQBeShPEpUyto3LozggqIxzWE&s=5lzCKRpL69AIPXB8IQTbZOKuKRvus9jEoH4QquppwDs&e=>)> (2/24) “NASA has awarded more than \$39.8 million through the agency’s National Space Grant College and Fellowship Project to increase student and faculty engagement in STEM at community colleges, technical schools and universities across the nation. Each award has a four-year performance period and a maximum value of \$760,000 for fiscal year 2020. NASA awarded funds to 52 proposals aimed at attracting and retaining more students from institutions of higher education in science, technology, engineering, and mathematics programs.”

## New Moon 2020: When Is February New Moon? What Is A New Moon?

Daily Express (UK) <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020022402nasa-26r-3Demail-2D253c-26l-3D02a-2D380-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=89NYKtCvYtjNvDIIm-tNDQBeShPEpUyto3LozggqIxzWE&s=vjf7MafrL6KUAM7qqSP3sMprfSF11PYT1ijkftW5bzw&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020022402nasa-26r-3Demail-2D253c-26l-3D02a-2D380-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=89NYKtCvYtjNvDIIm-tNDQBeShPEpUyto3LozggqIxzWE&s=vjf7MafrL6KUAM7qqSP3sMprfSF11PYT1ijkftW5bzw&e=>)> (2/23, Fish) “The next New Moon happens today, Sunday, February 23 at exactly 3.32pm GMT (10.32am ET). This timing means the February New Moon will unfortunately be invisible to even the most eagle-eyed observer. ... US-based space agency NASA added the traditional new moon is ‘the earliest visible waxing crescent, which signals the start of a new month in many lunar and lunisolar calendars.’”

## This Week At NASA – Vice President Pence Visits Langley – SpaceRef

SpaceRef <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020022402nasa-26r-3Demail-2D253c-26l-3D02b-2Ddd6-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=89NYKtCvYtjNvDIIm-tNDQBeShPEpUyto3LozggqIxzWE&s=RZeWp8PwXq\\_Q9M43A-Z783lsS4k0aluGPU4uRz9mXVM&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020022402nasa-26r-3Demail-2D253c-26l-3D02b-2Ddd6-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=89NYKtCvYtjNvDIIm-tNDQBeShPEpUyto3LozggqIxzWE&s=RZeWp8PwXq_Q9M43A-Z783lsS4k0aluGPU4uRz9mXVM&e=>)> (2/23) “Vice President Pence visits our Langley Research Center, science results related to water on Jupiter, and studying the darkest areas of the Moon ... a few of the stories to tell you about – This Week at NASA.”

## NASA Engineer Speaks With Young Scientists At Bordeaux Library

Yahoo! News <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020022402nasa-26r-3Demail-2D253c-26l-3D02c-2De72-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=89NYKtCvYtjNvDIIm-tNDQBeShPEpUyto3LozggqIxzWE&s=i5ih5w6O8PFxbS1HxzU6VW8Tya6v03tHlb7dypErZFI&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020022402nasa-26r-3Demail-2D253c-26l-3D02c-2De72-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=89NYKtCvYtjNvDIIm-tNDQBeShPEpUyto3LozggqIxzWE&s=i5ih5w6O8PFxbS1HxzU6VW8Tya6v03tHlb7dypErZFI&e=>)> (2/23) “Nashville students enjoyed a once in a lifetime opportunity at the Bordeaux library.”

## Other

## Air Force Academy To Commission Space Force Officers

AP <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-)

3D2020022402nasa-26r-3Demail-2D253c-26l-3D02d-2Dcbc-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=89NYKtCvYtjNvDlIm-tNDQBeShPEpUyto3LozggqIxzWE&s=LsINiCpMc7MwT4-spPcekCEWR27CBp5W8nPqkbezixs&e=> (2/23) "Graduates from the U.S. Air Force Academy in Colorado are expected to cross-commission into the Space Force this spring, military officials said. About 60 cadets would be commissioned into the new armed service branch, which formed in December with the signing of the \$738 billion National Defense Authorization Act, the Gazette reported."

#### U.S. Military's Annual List Of 'Unfunded Priorities' Includes \$1 Billion For Space Force

Space News <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_\\_mailview.aspx-3Fm-3D2020022402nasa-26r-3Demail-2D253c-26l-3D02e-2D227-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=89NYKtCvYtjNvDlIm-tNDQBeShPEpUyto3LozggqIxzWE&s=JEh73Q6Wp2WEuUI0SuolB2hG90Fcbi7oY2wS\\_O88Yfk&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com__mailview.aspx-3Fm-3D2020022402nasa-26r-3Demail-2D253c-26l-3D02e-2D227-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=89NYKtCvYtjNvDlIm-tNDQBeShPEpUyto3LozggqIxzWE&s=JEh73Q6Wp2WEuUI0SuolB2hG90Fcbi7oY2wS_O88Yfk&e=>) (2/22, Erwin) "Soon after the Pentagon's budget request is submitted to Congress each year, the military services send to Capitol Hill a separate wish list known as 'unfunded priorities.' These are items the military would like Congress to fund if lawmakers decide to add more money to the Pentagon's proposed budget. Last week the military services and the Missile Defense Agency submitted nearly \$18 billion in unfunded priorities for fiscal year 2021, including \$1 billion for the Space Force."

#### Colorado's Strong Space, Defense Industries Continue To Act As Magnet For Companies

Denver Post <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_\\_mailview.aspx-3Fm-3D2020022402nasa-26r-3Demail-2D253c-26l-3D02f-2D566-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=89NYKtCvYtjNvDlIm-tNDQBeShPEpUyto3LozggqIxzWE&s=E3VNTEYIhXOK8Z15x9eR9rilyuxFdX48FFPILO7-Zww&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com__mailview.aspx-3Fm-3D2020022402nasa-26r-3Demail-2D253c-26l-3D02f-2D566-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=89NYKtCvYtjNvDlIm-tNDQBeShPEpUyto3LozggqIxzWE&s=E3VNTEYIhXOK8Z15x9eR9rilyuxFdX48FFPILO7-Zww&e=>) (2/21, Kohler) "When Booz Allen Hamilton was looking to expand its operations in Colorado, Aurora made sense because of its proximity to Buckley Air Force Base. Booz Allen Hamilton recently opened a new office in Aurora because of its growing defense and space work. "

#### Elon Musk's Plan To Settle Mars

National Review <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_\\_mailview.aspx-3Fm-3D2020022402nasa-26r-3Demail-2D253c-26l-3D030-2D4fa-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=89NYKtCvYtjNvDlIm-tNDQBeShPEpUyto3LozggqIxzWE&s=mhRmfONQfgEQrHOiy1NaW0G1H9jaGg9MK1Y4Js3bdT4&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com__mailview.aspx-3Fm-3D2020022402nasa-26r-3Demail-2D253c-26l-3D030-2D4fa-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=89NYKtCvYtjNvDlIm-tNDQBeShPEpUyto3LozggqIxzWE&s=mhRmfONQfgEQrHOiy1NaW0G1H9jaGg9MK1Y4Js3bdT4&e=>) (2/22) "Last week my wife Hope and I traveled to Boca Chica, Texas, to meet with Elon Musk. While we talked inside the SpaceX onsite headquarters, a mariachi band played outside, providing entertainment for long lines of people queued up to apply for multiple categories of jobs building craft to take humans to Mars. Hundreds were already hired and at work in the complex. Soon there will be thousands."

#### SpaceX Shock: Starlink To Play Bigger Role In 'Massive' Live-fire Air Force Exercise

Daily Express (UK) <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_\\_mailview.aspx-3Fm-3D2020022402nasa-26r-3Demail-2D253c-26l-3D031-2D640-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com__mailview.aspx-3Fm-3D2020022402nasa-26r-3Demail-2D253c-26l-3D031-2D640-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD)

8-mHkTTiYCEf5ROyus&m=89NYKtCvYtjNvDIIm-tNDQBeShPEpUyto3LozggqIxzWE&s=myEGgOcDqiOhJFLq75-a77NXbPL3VjvzSV\_bUApbkO4&e=> (2/23, Fish) "The US Air Force tested its experimental Advanced Battle Management System capable of connecting air, sea, land and space assets late last year. The exercise was deemed an overall success, with the controversial SpaceX Starlink satellites used to communicate to a Lockheed Martin AC-130 gunship."

SpaceX Is Looking To Raise About \$250 Million, Valuing Elon Musk's Space Company At \$36 Billion

CNBC <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020022402nasa-26r-3Demail-2D253c-26l-3D032-2D39e-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=89NYKtCvYtjNvDIIm-tNDQBeShPEpUyto3LozggqIxzWE&s=ZEZu\\_8MnqMRSZR\\_H5xOkCVOtepZjtkUnmFWM0bAwCAY&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020022402nasa-26r-3Demail-2D253c-26l-3D032-2D39e-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=89NYKtCvYtjNvDIIm-tNDQBeShPEpUyto3LozggqIxzWE&s=ZEZu_8MnqMRSZR_H5xOkCVOtepZjtkUnmFWM0bAwCAY&e=>) (2/21, Sheetz) "SpaceX is looking to raise about a quarter billion dollars in new funds, as Elon Musk's company heads into a critical year for its three major projects. The company is seeking to bring in about \$250 million at a price of \$220 a share, according to people familiar with the financing."

SpaceX Said To Be Seeking Around \$250 Million In Funding, Boosting Valuation To Roughly \$36 Billion

TechCrunch <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020022402nasa-26r-3Demail-2D253c-26l-3D033-2D83f-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=89NYKtCvYtjNvDIIm-tNDQBeShPEpUyto3LozggqIxzWE&s=EJLrehNbPH81v4kQVt0X4MuX1eRdgCyHsO3HmrRhhro&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020022402nasa-26r-3Demail-2D253c-26l-3D033-2D83f-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=89NYKtCvYtjNvDIIm-tNDQBeShPEpUyto3LozggqIxzWE&s=EJLrehNbPH81v4kQVt0X4MuX1eRdgCyHsO3HmrRhhro&e=>) (2/21) "SpaceX is looking to raise around \$250 million in new funding according to a new report from CNBC's Michael Sheetz. The additional cash would bring SpaceX's total valuation to around \$36 billion, according to CNBC's sources – an increase of more than \$2.5 billion versus its most recently reported valuation."

SpaceX Aims To Launch Private Citizens Into Super High Orbit

Voice of America <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020022402nasa-26r-3Demail-2D253c-26l-3D034-2D670-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=89NYKtCvYtjNvDIIm-tNDQBeShPEpUyto3LozggqIxzWE&s=OA5lxqNhMgWbSJK1JSTqyeWBHrgcdLNP8qXE2T3gHI&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020022402nasa-26r-3Demail-2D253c-26l-3D034-2D670-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=89NYKtCvYtjNvDIIm-tNDQBeShPEpUyto3LozggqIxzWE&s=OA5lxqNhMgWbSJK1JSTqyeWBHrgcdLNP8qXE2T3gHI&e=>) (2/22) "American technology company SpaceX says it plans to launch as many as four private citizens into a higher orbit than ever before. SpaceX is working with U.S.-based Space Adventures Inc. to offer the space flights, the two companies recently announced. No dates or costs for the flights were announced."

SpaceX's New Strategy: Build Rockets, Then Blow Them Up

Medium <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020022402nasa-26r-3Demail-2D253c-26l-3D035-2D42e-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=89NYKtCvYtjNvDIIm-tNDQBeShPEpUyto3LozggqIxzWE&s=kdC7HRNjoh1YMVW6qE5KWLgXYh8nHtUPbOcSK2if8Go&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020022402nasa-26r-3Demail-2D253c-26l-3D035-2D42e-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=89NYKtCvYtjNvDIIm-tNDQBeShPEpUyto3LozggqIxzWE&s=kdC7HRNjoh1YMVW6qE5KWLgXYh8nHtUPbOcSK2if8Go&e=>) (2/23, Lund) "Elon Musk is known for breaking the mould with virtually everything that he touches. He has consistently demonstrated a knack for thinking about products and services in terms of their "first principles." Viewing through the lens of first principles, he is able to find new ways of approaching problems that have led to breakthroughs in technology. But in some of his latest statements, however, Elon displayed a level of ambition that must make even

himself nervous.”

### Elon Musk Shares The Science Fiction Book Series That Inspired Him To Start SpaceX

CNBC <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020022402nasa-26r-3Demail-2D253c-26l-3D036-2D6b8-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=89NYKtCvYtjNvDIIm-tNDQBeShPEpUyto3LozggqIxzWE&s=lrkuQl7cqrzX5Lv3lf4sVp\\_zoLmEPGRdVLh1qf18OU&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020022402nasa-26r-3Demail-2D253c-26l-3D036-2D6b8-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=89NYKtCvYtjNvDIIm-tNDQBeShPEpUyto3LozggqIxzWE&s=lrkuQl7cqrzX5Lv3lf4sVp_zoLmEPGRdVLh1qf18OU&e=>) (2/21, Locke) “As a teenage boy, Elon Musk felt a ‘personal obligation’ for the fate of mankind, according to the book ‘Elon Musk: Tesla, SpaceX, and the Quest for a Fantastic Future’ by Ashlee Vance. Musk’s love of books and the lessons he took from them inspired him to create ‘cleaner energy technology or [build] spaceships to extend the human species’s reach’ in the future, according to Vance.”

### Rocket Glitch Fixed, Russia Launches Satellite To Enhance Military Communications

SPACE <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020022402nasa-26r-3Demail-2D253c-26l-3D037-2D525-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=89NYKtCvYtjNvDIIm-tNDQBeShPEpUyto3LozggqIxzWE&s=gtI9cDgqEuBur3ORFtyzhriQerQVj884dQ9NMRKsWyk&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020022402nasa-26r-3Demail-2D253c-26l-3D037-2D525-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=89NYKtCvYtjNvDIIm-tNDQBeShPEpUyto3LozggqIxzWE&s=gtI9cDgqEuBur3ORFtyzhriQerQVj884dQ9NMRKsWyk&e=>) (2/21) “Russia successfully launched a military communications satellite into orbit Thursday (Feb. 20). The launch took place about one month later than planned due to a technical issue.”

### Coronavirus Isn’t Stopping China From Launching Rockets

SPACE <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020022402nasa-26r-3Demail-2D253c-26l-3D038-2Da83-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=89NYKtCvYtjNvDIIm-tNDQBeShPEpUyto3LozggqIxzWE&s=IUzhhHn5DBjY3xQXEh50fWpPxSQiINnQiD13DzfGP1M&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020022402nasa-26r-3Demail-2D253c-26l-3D038-2Da83-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=89NYKtCvYtjNvDIIm-tNDQBeShPEpUyto3LozggqIxzWE&s=IUzhhHn5DBjY3xQXEh50fWpPxSQiINnQiD13DzfGP1M&e=>) (2/21, Howell) “China resumed satellite launches Wednesday (Feb. 19) amid the ongoing coronavirus outbreak, lofting a Long March 2D rocket in the country’s first launch since the Chinese New Year. The Long March 2D rocket lifted off from the Xichang Satellite Launch Center in the country’s Sichuan province at 4:07 p.m. EST (2107 GMT, 5:07 a.m. local time), and the state-owned China Aerospace Science and Technology Corp. (CASC) confirmed the launch roughly 40 minutes after the rocket left Earth, SpaceNews reported.”

### Japan’s MMX Mission Will Pluck A Sample From Martian Moon Phobos

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### Blue Origin Opens New Rocket Engine Factory In Alabama

SPACE <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020022402nasa-26r-3Demail-2D253c-26l-3D03a-2Da54-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=89NYKtCvYtjNvDIIm-tNDQBeShPEpUyto3LozggqIxzWE&s=w-QgZKoYaJBvZXDUHAKDM1aM05YrLkqdfn9OIJzt8rg&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020022402nasa-26r-3Demail-2D253c-26l-3D03a-2Da54-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=89NYKtCvYtjNvDIIm-tNDQBeShPEpUyto3LozggqIxzWE&s=w-QgZKoYaJBvZXDUHAKDM1aM05YrLkqdfn9OIJzt8rg&e=>) (2/23) "The engine for Blue Origin's lunar lander, which has been in development for several years, will be tested at NASA's Marshall Space Flight Center among a crop of engines coming from the company's brand-new engine factory in Huntsville, Alabama."

#### NASA Officials 'Baffled' After Space Cameras Catch UFO Following ISS For Over 20 Minutes

Daily Express (UK) <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020022402nasa-26r-3Demail-2D253c-26l-3D03b-2D4c9-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=89NYKtCvYtjNvDIIm-tNDQBeShPEpUyto3LozggqIxzWE&s=10oGvM713o965mmrFkUTHubbLMD6kKvC0GbAFsGLR4o&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020022402nasa-26r-3Demail-2D253c-26l-3D03b-2D4c9-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=89NYKtCvYtjNvDIIm-tNDQBeShPEpUyto3LozggqIxzWE&s=10oGvM713o965mmrFkUTHubbLMD6kKvC0GbAFsGLR4o&e=>) (2/23, Smith) "Astonishing footage of a UFO hovering above Earth has been caught by NASA cameras. The incredible video, captured on the US space agency's live camera sees the cone-shaped object keep pace with the International Space Station (ISS) above it. In a bizarre twist, the NASA camera zooms in on the object, appearing to show the US space agency acknowledges the UFO."

#### China Prepares Ambitious Launch As It Bids To Complete Space Station In 2022

Daily Express (UK) <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020022402nasa-26r-3Demail-2D253c-26l-3D03c-2D2c5-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=89NYKtCvYtjNvDIIm-tNDQBeShPEpUyto3LozggqIxzWE&s=AuGOI4qiqE5b7r8D91XSRMLOxiGJAL22u-wFvySxahs&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020022402nasa-26r-3Demail-2D253c-26l-3D03c-2D2c5-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=89NYKtCvYtjNvDIIm-tNDQBeShPEpUyto3LozggqIxzWE&s=AuGOI4qiqE5b7r8D91XSRMLOxiGJAL22u-wFvySxahs&e=>) (2/23, Hans) "Xinhua say a Long March 5B rocket will be a 'trial version' of Beijing's new spaceship and could carry up to six astronauts, double the number of previous ships. The April mission will not, according to space.com, carry people or pieces of the nation, but prepare officials for the challenges ahead."

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Editor's Note

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### NASA Chief Says Russia Leaving ISS Could Kick Off A Space Race

CNN Business

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### New NASA Chief Doesn't Think UFOs Are An Optical Illusion, According To Interview

Florida Today

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### NASA Administrator Details Missions To Moon, Mars, Venus And The Agency's Efforts On Earth

Fox News

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### NASA's Juno To Make The Closest Visit To Jupiter's Biggest Moon Ganymede In 20 Years

SPACE

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WwiLCJXVCI6Mn0=|1000&sdata=MCy9JG2jCThNi93KkwL6AIWQNYwR7gUS7oTDAnnuzzg=&reserved=0> (6/6, Bartels) “Ganymede, get ready for your close-up. No probe has gotten a good view of Jupiter’s largest moon since 2000, when NASA’s Galileo spacecraft swung past the strange world, which is the largest moon in the whole solar system. But on Monday (June 7), at 1:35 p.m. EDT (1735 GMT), NASA’s Juno spacecraft will skim just 645 miles (1,038 kilometers) above Ganymede’s surface, gathering a host of observations as it does so.”

#### Dragon Capsule Delivers 7,300 Pounds Of Cargo To International Space Station

Spaceflight Now

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021060702nasa&r=email-4a56&l=007-8e2&t=c&data=04|01|randy.c.cruz@nasa.gov|7ac5e6f986dc485c40df08d929a3682f|7005d45845be48ae8140d43da96dd17b|0|0|637586604097347841|Unknown|TWfPbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiv2luMzliLCJBTil6lk1haWwiLCJXVCI6Mn0=|1000&sdata=xei6uPPU7vRHaT8DQUS1sM+/PewjvYpqmI THBGeWv08=&reserved=0>> (6/5, Clark) “Wrapping up a two-day transit from a launch pad in Florida, a SpaceX Dragon capsule autonomously linked up with the International Space Station Saturday with more than 7,300 pounds of cargo, including new solar arrays, crew supplies, and experiments looking at how spaceflight affects the biology of tardigrades and baby squid.”

Flight

No content.

Earth

#### How To Watch This Week’s Rare “Ring Of Fire” Solar Eclipse

CBS News

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#### NASA Spots Sneaky Methane Emissions From Biggest Oilfield In America

Gizmodo

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## Humans in Space

### NASA Chief Says Russia Leaving ISS Could Kick Off A Space Race

CNN Business

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“The United States has for decades enjoyed a mutually beneficial relationship with Russia that has often served as a powerful symbol of cooperation between the East and West in the post-Cold War era. But that cooperation could soon dissolve, and it has NASA’s new chief, Bill Nelson, concerned. Russian officials are threatening to pull out of the International Space Station, the orbiting laboratory that the US and Russia have jointly operated for two decades, as soon as 2024 in favor of operating an independent space station. Meanwhile, Nelson and the US government want to continue the ISS program through at least 2030.”

### Russia’s ISS Exit May Result In A New Space Race

SlashGear

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“Russia announced not long ago that it was considering leaving the ISS next year. At the same time, Russia has been cozying up with China, and the two countries have plans to work together in space. The US and Russia have worked together for a long time aboard the ISS, having enjoyed a mutually beneficial relationship serving as a symbol of cooperation.”

### Dragon Capsule Delivers 7,300 Pounds Of Cargo To International Space Station

Spaceflight Now

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“Wrapping up a two-day transit from a launch pad in Florida, a SpaceX Dragon capsule autonomously linked up with the International Space Station Saturday with more than 7,300 pounds of cargo, including new solar arrays, crew supplies, and experiments looking at how spaceflight affects the biology of tardigrades and baby squid.”

### SpaceX Dragon Docks At Space Station To Deliver New Solar Arrays And Tons Of Supplies

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Thompson) "A SpaceX Dragon cargo ship arrived at the International Space Station today (June 5) to deliver new solar arrays along with tons of fresh research experiments and NASA supplies as part of the company's 22nd cargo resupply mission. The uncrewed Dragon autonomously linked up with the orbiting laboratory at 5:09 a.m. EDT (0909 GMT), parking at the zenith, or space-facing, side of the station's Harmony module. Docking occurred approximately 40 hours after the Dragon's launch on a Falcon 9 rocket Thursday (June 3) from NASA's Kennedy Space Center in Florida. At the time of docking, both spacecraft were sailing about 258 miles (415 kilometers) over the South Pacific Ocean."

#### SpaceX Dragon Cargo Capsule Docks Safely With The ISS

SlashGear

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#### 22nd SpaceX Cargo Dragon Reaches International Space Station

Aviation Week

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#### SpaceX Successfully Launches Squid And Tardigrades To ISS For NASA

CNET News

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021060702nasa&r=email-4a56&l=010-b0d&t=c&data=04|01|randy.c.cruz@nasa.gov|7ac5e6f986dc485c40df08d929a3682f|7005d45845be48ae8140d43da96dd17b|0|0|637586604097377708|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTil6Ik1haWwiLCJXVCi6Mn0=|1000&sdata=ndp2TI/LUWuAlIOzu+BQc2Dk54V9oUN8wGUTdiLDVmY=&reserved=0>> (6/6, Kooser) "SpaceX has a special delivery on the way to the International Space Station. A Falcon 9 rocket and Cargo Dragon spacecraft had a picture-perfect launch Thursday for the company's 22nd commercial resupply mission for NASA. The Falcon 9's first stage landed on a SpaceX dronship in the Atlantic Ocean and will be reused for a future mission. The Dragon capsule is now in orbit and is scheduled to rendezvous with the ISS around 2 a.m. PT on Saturday."

#### SpaceX Launches New Solar Arrays For International Space Station

redOrbit

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72c&t=c&data=04|01|randy.c.cruz@nasa.gov|7ac5e6f986dc485c40df08d929a3682f|7005d45845be48ae8140d43da96dd17b|0|0|637586604097387666|Unknown|TWfPbGZsb3d8eyJWljoIMC4wLjAwMDAiLCJQljoIV2luMzliLCJBTil6lk1haWwiLCJXVCI6Mn0=|1000&sdata=8U9lsKLH1NSHFPLQ3B3Jckq/drSk0OZxojJJW3cbqzk=&reserved=0> (6/4)  
"SpaceX successfully launched the CRS-22 mission, which will deliver 7,000 pounds of cargo to the International Space Station. The payload includes two new solar panels out of a planned series of six, tardigrades, glowing baby squids, and supplies for the space station crew."

## SpaceX Launches Solar Arrays To Space Station For Power System Upgrade

CBS News

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## 1st Commercial Astronomy Spacecraft Twinkle Set For Launch In 2024

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## Medical Emergencies In Space: Is Private Space Tourism Ready For A Worst Case Scenario?

Discover Magazine

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## A Half-Million Pieces Of Space Junk Pose Real Threat To Astronauts



Forbes

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Space Tourism Is About To Take Off. Here’s How Firms Like Virgin Galactic, Blue Origin And SpaceX Are Making Sure Visitors’ Bodies Can Survive The Trip.

Insider

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021060702nasa&r=email-4a56&l=016-d11&t=c&data=04|01|randy.c.cruz@nasa.gov|7ac5e6f986dc485c40df08d929a3682f|7005d45845be48ae8140d43da96dd17b|0|0|637586604097407580|Unknown|TWFpbGZsb3d8eyJWljoimc4wLjAwMDAiLCJQljoiv2luMzliLCJBTil6lk1haWwiLCJXVCI6Mn0=|1000&sdata=8iJx2wIRomRz4VOOD49/N7rk44QRwRRMimKuggMiJ8A=&reserved=0>> (6/5, Mayo) “Companies like Richard Branson’s Virgin Galactic and Jeff Bezos’s Blue Origin are gearing up to send tourists to the edge of space — and eventually, beyond — as soon as 2022. But for ordinary citizens, zero gravity and long flights could wreak havoc on their bodies. Getting to space is a naturally challenging experience, especially for the human body. That’s why the firms hoping to sell trips are taking a page from NASA’s playbook and undertaking a rigorous training program for would-be travelers to mitigate things like muscle atrophy and bone loss that studies show can happen on trips outside the atmosphere.”

Virgin Galactic Signs Contract For Suborbital Research Mission

Space News

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Virgin Galactic To Launch Science Communicator And Researcher To Space

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WwiLCJXVCI6Mn0=|1000&sdata=FoMy5br29IX5gGFMDUeOh/2BWsp5HD6VYBuvaA3+cg=&reserved=0> (6/5, Gohd) “Virgin Galactic will launch Kellie Gerardi, an aerospace researcher and science communicator who’s captured the world’s attention with books and TikTok videos, to space as a payload specialist on an upcoming mission. The suborbital spaceflight on a Virgin Galactic space plane will send Gerardi, author of ‘Not Necessarily Rocket Science: A Beginner’s Guide to Life in the Space Age’ (Mango Media, 2020), on a dedicated research flight to test new technologies related to human health amid other experiments.”

#### Virgin Galactic Announces Another Human-tended Science Flight

Ars Technica

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#### Recruit Your Own ‘Crew’ For The Private Inspiration4 Space Mission With This New Fundraising Campaign

SPACE

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#### Gorgeous New Short Film Shows Us What An Early Lunar Colony Would Actually Look Like

Gizmodo

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021060702nasa&r=email-4a56&l=01b-45d&t=c&data=04|01|randy.c.cruz@nasa.gov|7ac5e6f986dc485c40df08d929a3682f|7005d45845be48ae8140d43da96dd17b|0|0|637586604097427491|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTil6lk1haWwiLCJXVCI6Mn0=|1000&sdata=yIrwPLq8cL4i1faVHPXZJjHIGoF+2Qng9ViGeUjVz+w=&reserved=0>> (6/4, Dvorsky) “Called Life Beyond Earth, the four-minute short film presents a realistic vision of a future lunar base and the sustainable habitats that could turn this long-sought goal into a reality. ... Experts from the European Space Agency and retired NASA astronaut Jeffrey Hoffman, currently a professor at MIT’s Department of Aeronautics and Astronautics, provided technical support for the project.”

#### Dragon Cargo Launch To ISS

Spectrum News 13 (FL)

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"Thursday afternoon rocket launch from our Space Coast now. A cargo craft is on its way to the International Space Station for NASA."

#### NASA's New, \$23 Million Space Commode System Is More Than Just A Toilet

UPI

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021060702nasa&r=email-4a56&l=01d-1b4&t=c&data=04|01|randy.c.cruz@nasa.gov|7ac5e6f986dc485c40df08d929a3682f|7005d45845be48ae8140d43da96dd17b|0|0|637586604097437450|Unknown|TWFpbGZsb3d8eyJWljoimc4wLjAwMDAiLCJQIjoiV2luMzliLCJBTil6lk1haWwiLCJXVCI6Mn0=|1000&sdata=3OwvEc1XophjMgY+HVD8uUx7h9U1upAoRtG4MGyNWU0=&reserved=0>> (6/7)  
"Going to the bathroom at the International Space Station is about to get easier and cleaner with a new toilet system that cost NASA \$23 million to develop. Astronauts are connecting and checking out the toilet, which actually is a high-tech improvement to the space station's water recycling system."

Moon to Mars

#### NASA Administrator Details Missions To Moon, Mars, Venus And The Agency's Efforts On Earth

Fox News

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021060702nasa&r=email-4a56&l=01e-829&t=c&data=04|01|randy.c.cruz@nasa.gov|7ac5e6f986dc485c40df08d929a3682f|7005d45845be48ae8140d43da96dd17b|0|0|637586604097437450|Unknown|TWFpbGZsb3d8eyJWljoimc4wLjAwMDAiLCJQIjoiV2luMzliLCJBTil6lk1haWwiLCJXVCI6Mn0=|1000&sdata=YpZw9REYSx1qwjorVnUvD7sw+IP8cSDeqSxlfrl2PCM=&reserved=0>> (6/5, Musto)  
"NASA Administrator Bill Nelson has cosmically grand plans for the agency, including a trip to Venus, an advanced look at the Earth using 3D technology and landing humans on Mars. Speaking at his first 'State of NASA' address Wednesday afternoon, the former Florida senator announced the groundbreaking missions, sending the space community buzzing."

#### 'Glaciers' On Mars Could Point To Perfect Landing Site For Humans

CNET News

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021060702nasa&r=email-4a56&l=01f-1e7&t=c&data=04|01|randy.c.cruz@nasa.gov|7ac5e6f986dc485c40df08d929a3682f|7005d45845be48ae8140d43da96dd17b|0|0|637586604097437450|Unknown|TWFpbGZsb3d8eyJWljoimc4wLjAwMDAiLCJQIjoiV2luMzliLCJBTil6lk1haWwiLCJXVCI6Mn0=|1000&sdata=jAX0qS8hqGnhsiFblqM9XBBc03rtME7uDroQTRZFozE=&reserved=0>> (6/4, Kooser)  
"Water is life, whether you're a human on Earth or the first person to set foot on Mars. If Mars settlements are going to happen, human explorers will need to get water supplies from Mars itself. A new study of possible 'glaciers' on the red planet points to an area that it says could be 'perfect for future Mars landings.' ... In 2019, NASA released a 'treasure map' of water ice deposits, some of which could possibly be reached with a shovel. Arcadia Planitia was on NASA's list of hot spots for ice."

#### NASA Says New Zealand Is The 11th Country To Sign Artemis Accords

SlashGear

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021060702nasa&r=email-4a56&l=020-c15&t=c&data=04|01|randy.c.cruz@nasa.gov|7ac5e6f986dc485c40df08d929a3682f|7005d45845be48ae8140d43da96dd17b|0|0|637586604097447403|Unknown|TWfPbGZsb3d8eyJWljoimC4wLjAwMDAiLCJQljoiv2luMzliLCJBTil6lk1haWwiLCJXVCI6Mn0=|1000&sdata=6vpcpUuV9lsZ14KYWC5Z+eYCuX+b+79kE6/4j2sOYRc=&reserved=0>> (6/4, Roston) "A little more than a week after South Korea signed the Artemis Accords, NASA has announced that New Zealand is also on board with the commitment. According to the space agency, New Zealand Space Agency's Dr. Peter Crabtree signed the Artemis Accords on May 31, only a week after the Republic of Korea, making it the 11th country to join."

#### NASA's InSight Mars Lander Dumped Dirt On Itself On Purpose

BGR

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021060702nasa&r=email-4a56&l=021-720&t=c&data=04|01|randy.c.cruz@nasa.gov|7ac5e6f986dc485c40df08d929a3682f|7005d45845be48ae8140d43da96dd17b|0|0|637586604097447403|Unknown|TWfPbGZsb3d8eyJWljoimC4wLjAwMDAiLCJQljoiv2luMzliLCJBTil6lk1haWwiLCJXVCI6Mn0=|1000&sdata=nMeLxioy8GDT48arhIP+67+EUE5/xclGI2hpjo/DXCs=&reserved=0>> (6/4, Wehner) "On May 22nd, a stationary robot on Mars used its arm to scoop up some Martian sand. It then slowly dumped it onto itself, with the brisk Mars wind snatching the tiny grains and whipping them against the machine's solar panels. The robot was NASA's InSight Mars lander, and the sand dump wasn't a mistake. It might sound counterintuitive, but the space agency aimed to actually clean one of the lander's most sensitive components by using the sand as a tool to knock off a layer of rust-colored dust that covers the entire lander."

#### Snapshot: Curiosity Sees Glowing Clouds On Mars

Astronomy News

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021060702nasa&r=email-4a56&l=022-f8a&t=c&data=04|01|randy.c.cruz@nasa.gov|7ac5e6f986dc485c40df08d929a3682f|7005d45845be48ae8140d43da96dd17b|0|0|637586604097457361|Unknown|TWfPbGZsb3d8eyJWljoimC4wLjAwMDAiLCJQljoiv2luMzliLCJBTil6lk1haWwiLCJXVCI6Mn0=|1000&sdata=dat+dPKVhSXU316fSJYSpy/yGpoBVGn7oBnXJeUI9Gc=&reserved=0>> (6/4, Klensman) "Cloud watching isn't only for earthlings. NASA's Curiosity rover, currently trundling through the foothills of Mars' Mount Sharp, recently snapped several photos of stunning clouds in the martian sky. Clouds on Mars are relatively rare, thanks to the planet's thin, dry atmosphere. But they do appear near the equator when Mars is near aphelion, its farthest point from the Sun, which is when Mars experiences the coldest part of its year. The Red Planet is approaching that point now and will officially reach it late on the evening of July 12."

#### Mars Ascent Vehicle From Northrop Grumman Takes Shape For Mars Sample Return Mission

NASA Space Flight

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021060702nasa&r=email-4a56&l=023-7fb&t=c&data=04|01|randy.c.cruz@nasa.gov|7ac5e6f986dc485c40df08d929a3682f|7005d45845be48ae8140d43da96dd17b|0|0|637586604097457361|Unknown|TWfPbGZsb3d8eyJWljoimC4wLjAwMDAiLCJQljoiv2luMzliLCJBTil6lk1haWwiLCJXVCI6Mn0=|1000&sdata=XhVOR+lOQYjtPAAhoNTI8O2Zr/dVW9X9aCThpfSz5nM=&reserved=0>> (6/4, Gebhardt, Barker) "Since Mariner 9 entered orbit around Mars on November 14, 1971, NASA has been continuously studying the Red Planet. The Viking landers reached the surface of Mars five years later and began sampling the soil. Since then, numerous landers and rovers with instruments from institutions across Earth have studied and traveled the red terrain in search of answers to many of our questions."

## NASA's Mars Helicopter Ingenuity Set For 7th Red Planet Flight On Sunday

### SPACE

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021060702nasa&r=email-4a56&l=024-9cf&t=c&data=04|01|randy.c.cruz@nasa.gov|7ac5e6f986dc485c40df08d929a3682f|7005d45845be48ae8140d43da96dd17b|0|0|637586604097467317|Unknown|TWFPbGZsb3d8eyJWljoimc4wLjAwMDAiLCJQljoiv2luMzliLCJBTil6lk1haWwiLCJXVCI6Mn0=|1000&sdata=USWaTApeq+DOwa2RUILKYGunR8gNaVncaOL3EN2As7Y=&reserved=0>> (6/5, Wall) "NASA's Mars helicopter Ingenuity will take to the air again this weekend, if all goes according to plan. Ingenuity's handlers are prepping the 4-lb. (1.8 kilograms) chopper for its seventh Martian flight, which will take place no earlier than Sunday (June 6). The plan is to send Ingenuity to a new airfield, about 350 feet (105 meters) south of its current location on the floor of Jezero Crater."

## The Mars Autonomous Helicopter Named Ingenuity Gets Confounded By Timestamp Glitch, Providing Insightful Lessons For AI Self-Driving Cars

### Forbes

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021060702nasa&r=email-4a56&l=025-1b4&t=c&data=04|01|randy.c.cruz@nasa.gov|7ac5e6f986dc485c40df08d929a3682f|7005d45845be48ae8140d43da96dd17b|0|0|637586604097467317|Unknown|TWFPbGZsb3d8eyJWljoimc4wLjAwMDAiLCJQljoiv2luMzliLCJBTil6lk1haWwiLCJXVCI6Mn0=|1000&sdata=R6y3Z5l6cj4tnKatycyV+Pek6lXoCJuRwBel4vD+/pM=&reserved=0>> (6/5, Eliot) "Have you ever glanced at a snapshot and asked someone when they took that photo? I'm sure that you have. ... You might be aware that NASA has put an autonomous helicopter on Mars. The helicopter is part of the overall Mars 2020 Perseverance rover mission. With the catchy name of Ingenuity, the autonomous helicopter has already established new records based on its flights on Mars, and the NASA teams should deservedly be proud of the accomplishments so undertaken."

## SLS Core Stage Project

### WAAY-TV Huntsville (AL)

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021060702nasa&r=email-4a56&l=026-cdd&t=c&data=04|01|randy.c.cruz@nasa.gov|7ac5e6f986dc485c40df08d929a3682f|7005d45845be48ae8140d43da96dd17b|0|0|637586604097467317|Unknown|TWFPbGZsb3d8eyJWljoimc4wLjAwMDAiLCJQljoiv2luMzliLCJBTil6lk1haWwiLCJXVCI6Mn0=|1000&sdata=8rafoLj42pzgqRiQVqkfB89qVeEOSIOjBBgujaSM+kU=&reserved=0>> (6/5) "This morning, a significant milestone in NASA's journey to return humans to the moon. These pictures – released by NASA – show – on the left – the core stage of the Space Launch System rocket still horizontal."

## Solar System and Beyond

### Move Over, Mars

### Government Executive

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021060702nasa&r=email-4a56&l=027-e2a&t=c&data=04|01|randy.c.cruz@nasa.gov|7ac5e6f986dc485c40df08d929a3682f|7005d45845be48ae8140d43da96dd17b|0|0|637586604097477274|Unknown|TWFPbGZsb3d8eyJWljoimc4wLjAwMDAiLCJQljoiv2luMzliLCJBTil6lk1haWwiLCJXVCI6Mn0=|1000&sdata=xyWoy3h/oUsF4D0NIEgj10/Qf59ixv1k4M1VjqIzi6c=&reserved=0>> (6/4, Koren) "In June of 1769, an astronomer named David Rittenhouse prepared to observe a rare cosmic phenomenon, the transit of

Venus. ... NASA has picked not one, but two new spacecraft missions to study the second planet from the sun.”

## Seven Asteroids Are Zooming Past Earth This Week — And One Is The Size Of A Skyscraper

CBS News

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## NASA Mission To Get Up Close With Jupiter Moon — The Largest In The Solar System

CNN

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021060702nasa&r=email-4a56&l=029-bae&t=c&data=04|01|randy.c.cruz@nasa.gov|7ac5e6f986dc485c40df08d929a3682f|7005d45845be48ae8140d43da96dd17b|0|0|637586604097487231|Unknown|TWFpbGZsb3d8eyJWljoimC4wLjAwMDAiLCJQljoiv2luMzliLCJBTil6lk1haWwiLCJXVCI6Mn0=|1000&sdata=NcTCDwPz9eVuloNH1xKUScRCKmArmoio4NAn0G/9CLE=&reserved=0>> (6/4, Strickland) “The largest moon in our solar system is preparing for its first close-up in more than 20 years on Monday. NASA’s Juno mission has been observing Jupiter and its moons since July 2016, and now Juno will come within 645 miles (1,038 kilometers) of Ganymede’s surface.”

## NASA’s Juno To Make The Closest Visit To Jupiter’s Biggest Moon Ganymede In 20 Years

SPACE

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021060702nasa&r=email-4a56&l=02a-925&t=c&data=04|01|randy.c.cruz@nasa.gov|7ac5e6f986dc485c40df08d929a3682f|7005d45845be48ae8140d43da96dd17b|0|0|637586604097487231|Unknown|TWFpbGZsb3d8eyJWljoimC4wLjAwMDAiLCJQljoiv2luMzliLCJBTil6lk1haWwiLCJXVCI6Mn0=|1000&sdata=glfN4zKhEMHhIAwEaB5hU7E506cqGqoN0hXoSalknQ8=&reserved=0>> (6/6, Bartels) “Ganymede, get ready for your close-up. No probe has gotten a good view of Jupiter’s largest moon since 2000, when NASA’s Galileo spacecraft swung past the strange world, which is the largest moon in the whole solar system. But on Monday (June 7), at 1:35 p.m. EDT (1735 GMT), NASA’s Juno spacecraft will skim just 645 miles (1,038 kilometers) above Ganymede’s surface, gathering a host of observations as it does so.”

## NASA’s Juno Probe Will Get Close To Jupiter’s Moon Ganymede On Monday

The Verge

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021060702nasa&r=email-4a56&l=02b-50b&t=c&data=04|01|randy.c.cruz@nasa.gov|7ac5e6f986dc485c40df08d929a3682f|7005d45845be48ae8140d43da96dd17b|0|0|637586604097487231|Unknown|TWFpbGZsb3d8eyJWljoimC4wLjAwMDAiLCJQljoiv2luMzliLCJBTil6lk1haWwiLCJXVCI6Mn0=|1000&sdata=xmO/lbAQ1ZGkhpqE5iKlq5LLkOLK6Xrb0YTEGG6g6qM=&reserved=0>> (6/6,

Lions) “On Monday NASA’s Juno space probe, which has been orbiting Jupiter since 2016, will get a close-up look at Jupiter’s biggest moon Ganymede, the agency said in a press release. It will be the closest NASA has gotten to the largest moon in the solar system for more than 20 years— Galileo cruised by Ganymede in 2000— coming within 645 miles of its surface. The information Juno gathers will give insight into the moon’s composition and ice shell, as well as provide data for future missions to Jupiter.”

#### NASA Juno Probe Will Fly Within 645 Miles Of Ganymede’s Surface

SlashGear

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#### A Collapsing Star Sent A Massive Burst Of Energy Into Space

BGR

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021060702nasa&r=email-4a56&l=02d-fbf&t=c&data=04|01|randy.c.cruz@nasa.gov|7ac5e6f986dc485c40df08d929a3682f|7005d45845be48ae8140d43da96dd17b|0|0|637586604097497185|Unknown|TWFPbGZsb3d8eyJWljoimc4wLjAwMDAiLCJQljoiv2luMzliLCJBTil6lk1haWwiLCJXVCI6Mn0=|1000&sdata=rhK8Q/MQaBnmndnjdHtqGp6ajTEwsrx+KfhSMzrMifLY=&reserved=0>> (6/4, Wehner) “Stars are great. Our own star, the Sun, is one of the big reasons why we’re all here today. Without it, we’d be goners, but while stars can be life-giving, they can also be incredibly destructive forces of nature. As recent observations by NASA and astronomers around the world have shown, the death of a star can produce a truly cataclysmic release of energy that would destroy just about everything in its path.”

#### Hubble’s Sprawling Close-up Of A Distant Galaxy Looks Like A Sparkly Spider Web

Mashable

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021060702nasa&r=email-4a56&l=02e-7b9&t=c&data=04|01|randy.c.cruz@nasa.gov|7ac5e6f986dc485c40df08d929a3682f|7005d45845be48ae8140d43da96dd17b|0|0|637586604097507142|Unknown|TWFPbGZsb3d8eyJWljoimc4wLjAwMDAiLCJQljoiv2luMzliLCJBTil6lk1haWwiLCJXVCI6Mn0=|1000&sdata=IktGsbP9S2hE986kEt4b4raWlQRyvDOupLp+5qOHwOo=&reserved=0>> (6/5, Rosenberg) “We live in one of these, you know. Our own Milky Way is a spiral galaxy, much like the one featured in this newly shared image captured by Hubble’s Wide Field Camera 3. What you’re seeing is NGC 691, a spiral galaxy that’s roughly 120 million light-years away.”

#### ‘Your World’ On Cyberattacks, NASA’s Venus Plans

Fox News

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021060702nasa&r=email-4a56&l=02f-877&t=c&data=04|01|randy.c.cruz@nasa.gov|7ac5e6f986dc485c40df08d929a3682f|7005d45845be48ae8140d43da96dd17b|0|0|637586604097507142|Unknown|TWFPbGZsb3d8eyJWljoimc4wLjAwMDAiLCJQljoiv2luMzliLCJBTil6lk1ha>>

WwiLCJXVCI6Mn0=|1000&sdata=ENelwgMuz0Y98OMUTs3hXvcDzK8n5KtgpXAXRk6r1hk=&reserved=0> (6/4)  
“NEIL CAVUTO, FOX NEWS ANCHOR: In the meantime, a lot of Americans not looking forward to what has become a routine event, it seems, not only with the meatpacker JBS, but now the MTA, a Martha’s Vineyard ferry, Colonial Pipeline. On and on we go. ... CAVUTO: All right, Venus, young man. That seems to be the next call on the part of NASA. It wants to send to craft up there, as we have been busy visiting Mars.”

#### NASA Is Launching Two New Missions To A ‘Lost Habitable World’

BGR

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021060702nasa&r=email-4a56&l=030-9ee&t=c&data=04|01|randy.c.cruz@nasa.gov|7ac5e6f986dc485c40df08d929a3682f|7005d45845be48ae8140d43da96dd17b|0|0|637586604097507142|Unknown|TWFpbGZsb3d8eyJWljoimc4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ik1haWwiLCJXVCI6Mn0=|1000&sdata=nq7NaG7l67kGs5XrPvRMOBVyYPEGlyWBjBWOjO6wpZg=&reserved=0>> (6/4, Wehner) “NASA and other space agencies around the world have been focusing a lot of their attention on Mars as of late. It makes sense, since Mars is the planet most like Earth, and it’s the one planet that, as far as we know, had the best chance of hosting life at some point in its past. Venus, which today is a toxic hellscape with temperatures pushing 1,000 degrees Fahrenheit and a thick atmosphere that would choke us out in a heartbeat, is a rocky world like Earth and Mars, but it’s most certainly not compatible with life as we know it. Where did it all go wrong? That’s what NASA wants to find out.”

#### NASA To Return To Venus With Two Missions By 2030

Astronomy News

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Space Tech

#### Another Delay For Webb, But This Time It’s Because Of The Rocket, Not The Telescope

Universe Today

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021060702nasa&r=email-4a56&l=032-07b&t=c&data=04|01|randy.c.cruz@nasa.gov|7ac5e6f986dc485c40df08d929a3682f|7005d45845be48ae8140d43da96dd17b|0|0|637586604097517098|Unknown|TWFpbGZsb3d8eyJWljoimc4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ik1haWwiLCJXVCI6Mn0=|1000&sdata=vwhL9kChJLvVqGUK0M861v9+j+HiOrpB8720f3fjiqM=&reserved=0>> (6/4, Atkinson) “Officials from NASA and ESA this acknowledged the launch of the James Webb Space Telescope will very likely be delayed from the end of October to at least mid-November, 2021. As we reported last month, the usually reliable Ariane 5 has experienced problems on two previous launches where unexpected vehicle accelerations occurred when the fairing separated from the rocket. The fairing is the nose cone used to protect a spacecraft payload during launch and acceleration through Earth’s atmosphere.”



Various

## NASA Chief Bill Nelson Optimistic About Space Exploration As Private Sector, Government Combine Efforts

Fox News

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“With a storied career in service – both in politics and in the U.S. Army – and experience as a payload specialist, newly appointed NASA Administrator Bill Nelson is in a unique position to lead. In his first month in the role, he is pushing what he says is one of the most ambitious and aggressive science budgets in agency history, making strides in exploration with missions both in space and on Earth.”

## Woman In Motion Tells Story Of How Star Trek’s Uhura Changed NASA Forever

Ars Technica

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“Actress Nichelle Nichols will forever be remembered for playing Uhura in Star Trek: The Original Series—one of the first Black women to play a prominent role on television—as well as engaging in the first interracial kiss on scripted television in the US. Less known is her equally seminal role as an ambassador for NASA in the 1970s, working tirelessly to bring more diversity to the agency’s recruitment efforts. That work is highlighted in Woman in Motion, a new documentary directed by Todd Thompson that is now streaming on Paramount+.”

## Once Named After Confederate Soldier, Virginia Middle School Renamed After NASA’s Katherine Johnson

ABC News

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021060702nasa&r=email-4a56&l=035-588&t=c&data=04|01|randy.c.cruz@nasa.gov|7ac5e6f986dc485c40df08d929a3682f|7005d45845be48ae8140d43da96dd17b|0|0|637586604097537012|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTil6Ik1haWwiLCJXVCi6Mn0=|1000&sdata=Y1oHsewOA5VvFdd0WHwUFPgRHBMgFaliCj3SEJbOnuk=&reserved=0>> (6/5, Lenthang)  
“A Virginia middle school that was once named after a Confederate soldier has been renamed in honor of African American NASA mathematician Katherine Johnson. The former Sidney Lanier Middle School in Fairfax County held a renaming ceremony Friday. Lanier was a prominent American poet and private in the Confederate army. Johnson is a modern-day space legend with a legacy of being one of four Black women whose work with NASA helped pave the way for the first American astronaut to successfully orbit Earth.”

## New NASA Chief Doesn’t Think UFOs Are An Optical Illusion, According To Interview

Florida Today

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“An upcoming Pentagon report on UFOs isn’t expected to determine what the mysterious flying objects observed by Navy pilots are, but NASA is now among the government agencies interested in finding out. In an interview with CNN, Bill Nelson, the space agency’s new administrator who is a former Florida senator and spaceflight veteran, cast doubt on one explanation — that the objects are simply optical illusions.”

#### NASA Is Getting Serious About UFOs

CNN

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“NASA’s new chief is setting up an effort to further study unidentified flying objects within his first month in office. Bill Nelson, the former Florida senator and spaceflight veteran, told CNN Business’ Rachel Crane during a wide-ranging interview on Thursday that it’s not clear to anyone — even in the upper echelons of the US space agency — what the high-speed objects observed by Navy pilots are.”

#### Report: NASA Investigating UFO Sightings, Agency Chief Says

SPACE

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“NASA is now on the perplexing UFO case. NASA chief Bill Nelson, who assumed his post just last month, has asked agency researchers to look into the spate of UFO sightings that U.S. Navy pilots have reported over the past two decades, CNN reported.”

#### SpaceX Launches SiriusXM Satellite

Space News

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“SpaceX successfully placed into orbit a Maxar-built satellite for SiriusXM Satellite Radio June 6, six months after the launch of a similar satellite that later malfunctioned in orbit. The Falcon 9 lifted off at 12:26 a.m. Eastern from Space Launch Complex 40 at Cape Canaveral Space Force Station. The rocket’s first stage, which previously launched the Crew-1 and Crew-2 commercial crew missions for NASA, landed on a dronship in the Atlantic Ocean 8 minutes and 45 seconds after liftoff.”

#### NASA Spending Plan Focuses On Science, Commercializing LEO

Aviation Week

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WwiLCJXVCI6Mn0=|1000&sdata=YA86tAu2tBjE//UvW7Ab8nB2UjGIUZquvRtQwSd8/Nk=&reserved=0> (6/6) “In its first budget request for NASA, the Biden administration seeks to expand ongoing programs to commercialize low Earth orbit, create a sustained human and robotic presence around the Moon and continue the search for life on Mars and beyond. The \$24.8 billion request for fiscal 2022—an increase...”

Other

OLS Grows Ahead Of Super Heavy Debut

NASA Space Flight

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SpaceX Falcon 9 Rocket Launches SiriusXM Radio Broadcasting Satellite

CBS News

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SpaceX’s Night-Time Launch Sends SiriusXM Satellite Into Orbit

UPI

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Rocket Report: SpaceX Breaks Streak Of Used Launches, FAA Clears Electron

Ars Technica

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“Welcome to Edition 4.01 of the Rocket Report! Yes, we’ve already reached our third anniversary, and I can’t say enough about all of our readers who have contributed story ideas over the last three years. The Rocket Report is a much, much richer product thanks to your help. As always, we welcome reader submissions, and if you don’t want to miss an issue, please subscribe using the box below (the form will not appear on AMP-enabled versions of the site). Each report will include information on small-, medium-, and heavy-lift rockets as well as a quick look ahead at the next three launches on the calendar.”

#### SpaceX Delivers For SiriusXM With Successful Midnight Hour Launch

Spaceflight Now

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“A Falcon 9 rocket launched from Cape Canaveral early Sunday with a high-power digital radio satellite for SiriusXM, marking SpaceX’s 18th Falcon 9 flight since Jan. 1, but just the third dedicated to external commercial customers in a year dominated by missions building out the company’s own Starlink internet network. It was the eighth Falcon 9 launch in the last 44 days. The busy stretch of SpaceX missions since Jan. 1 has been dominated by launches deploying the company’s own Starlink internet satellites.”

#### A SpaceX Rocket Launched, Released A Satellite, And Landed Perfectly Overnight

Mashable

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“While much of the United States was either sleeping or winding down their Saturday evening, SpaceX was keeping busy. The aerospace company sent one of its Falcon 9 rockets skyward at around 12:30 a.m. ET in an overnight launch that ferried a hefty Sirius XM satellite, dubbed SXM-8, into Earth’s orbit. It was a smooth 125th mission for the company, also its 18th of 2021.”

#### It’s Launch Day (kind Of)! Here’s What You Need To Know About SpaceX’s SiriusXM Launch

Florida Today

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021060702nasa&r=email-4a56&l=041-dd8&t=c&data=04|01|randy.c.cruz@nasa.gov|7ac5e6f986dc485c40df08d929a3682f|7005d45845be48ae8140d43da96dd17b|0|0|637586604097576833|Unknown|TWfPbGZsb3d8eyJWljoimC4wLjAwMDAiLCJQljoiv2luMzliLCJBTil6lk1haWwiLCJXVCI6Mn0=|1000&sdata=9xl5RCi2uwbeLhJCsjbubxPQqhl7ZGFtpzDED0XOZ/8=&reserved=0>> (6/5, Kelly)  
“Update: Liftoff of Falcon 9 with SiriusXM’s SXM-8 satellite at 12:26 a.m. ET! Sunday’s mission also included a successful drone ship landing in the Atlantic Ocean. Read the full post-launch story here. It’s launch day! SpaceX is on track to launch its Falcon 9 rocket from Cape Canaveral Space Force Station’s Launch Complex 40.”

## The Pentagon Wants To Use Private Rockets Like SpaceX's Starship To Deliver Cargo Around The World

CNBC

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021060702nasa&r=email-4a56&l=042-53a&t=c&data=04|01|randy.c.cruz@nasa.gov|7ac5e6f986dc485c40df08d929a3682f|7005d45845be48ae8140d43da96dd17b|0|0|637586604097586788|Unknown|TWfPbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQljojV2luMzliLCJBTil6lk1haWwiLCJXVCI6Mn0=|1000&sdata=L2Q4iOsitHjMGvJwXDLptRh/sq7BB2pRkwpKmsUyXQ4=&reserved=0>> (6/4, Sheetz) "The U.S. Air Force said Friday is expanding a small development program that wants to leverage reusable rockets, like those SpaceX is building, to deliver cargo quickly to anywhere in the world. Called Rocket Cargo, the experimental military program will be led by the U.S. Space Force, the Pentagon said. The program will research and help develop capabilities such as landing 'a rocket on a wide range of non-traditional materials and surfaces,' engineering 'a rocket cargo bay and logistics for rapid loading and unloading' and air-dropping 'cargo from the rocket after re-entry in order to service locations where a rocket or aircraft cannot possibly land.'"

## Pentagon Envisions Using Cargo Rockets

Wall Street Journal

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## Is The Space Force About To Acquire SpaceX Starships?

The Hill

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021060702nasa&r=email-4a56&l=044-ab0&t=c&data=04|01|randy.c.cruz@nasa.gov|7ac5e6f986dc485c40df08d929a3682f|7005d45845be48ae8140d43da96dd17b|0|0|637586604097596752|Unknown|TWfPbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQljojV2luMzliLCJBTil6lk1haWwiLCJXVCI6Mn0=|1000&sdata=PubWDntuB1mkAPmVKeeiDKgvRVwKMWfoREO2qqCxXDI=&reserved=0>> (6/6, Whittington) "Eric Berger over at Ars Technica has noticed something in the Department of the Air Force section of President Biden's fiscal 2022 budget proposal. The Air Force is proposing to spend money to study how the Starship rocket being developed by SpaceX could be used to deliver 100 tons of cargo anywhere in the world within one hour. The Starship as a point-to-point cargo hauler may be just the first task that the SpaceX rocket ship is asked to perform."

## Work On SpaceX Launch Pad Being Done In Mississippi

AP

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021060702nasa&r=email-4a56&l=045-0cd&t=c&data=04|01|randy.c.cruz@nasa.gov|7ac5e6f986dc485c40df08d929a3682f|7005d45845be48ae8140d43da96dd17b|0|0|637586604097596752|Unknown|TWfPbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQljojV2luMzliLCJBTil6lk1haWwiLCJXVCI6Mn0=|1000&sdata=JGw/XgegdNXzVqkBWISTYUHE30NgZaPY6axtWhOv1ak=&reserved=0>> (6/6) "Elon Musk is converting two oil rigs into floating launch pads for his SpaceX program — and work on one is being done in Mississippi. The Sun Herald reports that ST Engineering Halter Marine & Offshore Inc. in Pascagoula is involved in a six-month project to remove drilling equipment from the semi-submersible rig, Phobus."

## Jimmy Kimmel Grills A SpaceX Rocket Scientist For The Real Scoop On UFOs (or UAPs, Whatever)

Mashable

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021060702nasa&r=email-4a56&l=046-bac&t=c&data=04|01|randy.c.cruz@nasa.gov|7ac5e6f986dc485c40df08d929a3682f|7005d45845be48ae8140d43da96dd17b|0|0|637586604097596752|Unknown|TWFPbGZsb3d8eyJWljoimc4wLjAwMDAiLCJQljoiv2luMzliLCJBTil6lk1haWwiLCJXVCI6Mn0=|1000&sdata=6hXGWILDdaPgq54mhMG6P95rLyjYHvbcf8m1n342Gg=&reserved=0>> (6/5, Rosenberg) “Jimmy Kimmel kicked off Friday evening’s episode with a far-ranging intro that covered a diverse range of topics, from Trump lapdog Mike Pence’s weird ‘eye to eye’ comment to an equally odd cutaway chat with a meme stock mastermind played by Haley Joel Osment. But the monologue’s best moment came right up front as Jimmy paused to chat with an audience member who happens to be a SpaceX rocket scientist. We’re not any closer at this point to knowing if UFOs are a real thing — SpaceX as a company has no evidence — but, in her chat with Kimmel, the rocket scientist channels basically all of us when she says: ‘In my professional opinion, I really want it to be true.’”

## United Launch Alliance Puts STP-3 Launch On Hold

Aviation Week

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## SpaceX Launches 2nd Mission In Three Days With SiriusXM-8

NASA Space Flight

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WwiLCJXVCI6Mn0=|1000&sdata=HGI71Zh/OLK50LCWXx2BGyv2rU9RPDhZAcqDTfOwyzw=&reserved=0>. Services including embedded Tweets are also subject to Twitter for Website's information and privacy policies <[BulletinIntelligence.com](https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021060702nasa&r=email-4a56&l=04a-b73&t=c&data=04|01|randy.c.cruz@nasa.gov|7ac5e6f986dc485c40df08d929a3682f|7005d45845be48ae8140d43da96dd17b|0|0|637586604097616654|Unknown|TWFpbGZsb3d8eyJWljoic4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6lk1haWwiLCJXVCI6Mn0=|1000&sdata=oYNT2gzmXw82c26l0Ryl13twxFc7yElkgHsqBaITDKo=&reserved=0>. The NASA Morning Briefing is published five days a week by Bulletin Intelligence, which creates custom briefings for government and corporate leaders. We can be found on the Web at <a href=), or called at (703) 483-6100.

## **[EXTERNAL] NASA Morning Briefing for Monday, June 21, 2021**

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Top Stories

Take 2: Spacewalking Astronauts Install New Solar Panel

AP

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NASA 'Keeping Eye' On Jeff Bezos And Other Space Astronaut Billionaires

Fox Business

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Funding For Bezos Space Company Fails To Launch In House

Wall Street Journal

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96dd17b|0|0|637598698643430126|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQljojV2luMzliLCJBTiI6I6k1haWwiLCJXVCi6Mn0=|1000&sdata=J14W281XmZcHmLdHiXlaWAwaJ31HvD3FLE12dQ7OFt0=&reserved=0> (6/18, Rubin) “HOUSE THROWS UP ROADBLOCKS to funding for Jeff Bezos’s Blue Origin space exploration company that was approved as part of the Senate’s bipartisan China competition legislation last week. Members from both parties made clear the \$10 billion authorization, pushed by Washington Democratic Sen. Maria Cantwell, for a second moon lander contract ( Elon Musk’s SpaceX won the first contract earlier this year, while Blue Origin was one of two runners-up) was a nonstarter for the House’s version of science and innovation legislation.”

Rep. Waltz Reacts To Latest ‘Woke’ NASA Ad

Fox News

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“MICHAEL WALTZ: More diversity in space than our astronauts, great. What we need to be focused on is getting more Americans into space because right now the Chinese are passing us. They are kicking our butts up there, and it’s a real problem. Brian, more launches, more Chinese launches in space last year than the rest of the world combined, including the United States. As you said, just put their own astronauts in their own space station, which is brand new and being built, ours is 30 years old and decrepit.”

If You Care About The US, Root For China To Score A Win In Space

The Hill

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Flight

NASA, DLR Show SAFs Can Reduce Contrails’ Climate Impact

Aviation Week

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“Cleaner-burning sustainable fuels can reduce aircraft contrails’ cloudiness and their contribution to aviation’s climate impact, joint research by NASA and German aerospace center DLR has concluded. Burning low-aromatic sustainable aviation fuel (SAF) can result in a 50-70% reduction in soot...”

## New NASA Study Finds Sustainable Aviation Fuels Help Eliminate Contrails

SlashGear

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Earth

### Nasa Warned The Earth Is Trapping Twice As Much Heat As In 2005 — A Pace That's 'Unprecedented'

Insider

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### Earth's Atmosphere Trapping 'Unprecedented' Amount Of Heat: NASA, NOAA Report

Fox News

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Humans in Space

### Take 2: Spacewalking Astronauts Install New Solar Panel

AP

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haWwiLCJXVCi6Mn0=|1000&sdata=UpkYF/4s+wi81NJ/Tiys+NOXR/dzdUHIRa1K85VHAU=&reserved=0> (6/20, Dunn) “Spacewalking astronauts equipped the International Space Station with the first in a series of powerful new solar panels Sunday, overcoming suit problems and other obstacles with muscle and persistence. It took two spacewalks for French astronaut Thomas Pesquet and NASA astronaut Shane Kimbrough to install and unfurl the panel to its full 63 feet (19 meters) in length.”

#### Thousands Tune In As Astronauts Install A New Solar Array On The International Space Station

Forbes

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7bd&t=c&data=04|01|randy.c.cruz@nasa.gov|3a3cd3c8e89c4b2347d508d934a3644e|7005d45845be48ae8140d43da96dd17b|0|0|637598698643459990|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ik1haWwiLCJXVCi6Mn0=|1000&sdata=ew6x0/G3bi3pgeX0MtUmDd+fMAaTq6q2TvhUdHyKAW8=&reserved=0> (6/20, Porterfield) “Space enthusiasts across the world watched as two astronauts installed a new solar array onto the International Space Station, as part of a project to upgrade the station’s ability to harness the sun’s energy to provide electricity for the astronauts working and living on the station. Starting early Sunday morning, French European Space Agency astronaut Thomas Pesquet and American NASA astronaut Shane Kimbrough set up a new roll-out solar array, or an arrangement of multiple solar panels that run on a system, designed specially for the ISS in a space walk that was streamed live online.”

#### Spacewalkers Unfurl First Of Six New Space Station Solar Arrays

Spaceflight Now

<[https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021062102nasa&r=email-dece&l=00e-](https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021062102nasa&r=email-dece&l=00e-9e2&t=c&data=04|01|randy.c.cruz@nasa.gov|3a3cd3c8e89c4b2347d508d934a3644e|7005d45845be48ae8140d43da96dd17b|0|0|637598698643469949|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ik1haWwiLCJXVCi6Mn0=|1000&sdata=d12fP5y+E/KCKO8zc1bB/KOPUm+ROZpvphqO8MsMqmo=&reserved=0)

9e2&t=c&data=04|01|randy.c.cruz@nasa.gov|3a3cd3c8e89c4b2347d508d934a3644e|7005d45845be48ae8140d43da96dd17b|0|0|637598698643469949|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ik1haWwiLCJXVCi6Mn0=|1000&sdata=d12fP5y+E/KCKO8zc1bB/KOPUm+ROZpvphqO8MsMqmo=&reserved=0> (6/20, Clark) “Astronauts Thomas Pesquet and Shane Kimbrough floated outside the International Space Station Sunday to deploy and unroll a new solar array blanket after encountering spacesuit glitches and an interference issue during a previous excursion Wednesday. Pesquet and Kimbrough switched their spacesuits to battery power at 7:42 a.m. EDT (1142 GMT) Sunday to begin a planned six-and-a-half hour spacewalk.”

#### ESA/NASA Complete ISS Spacewalk To Install First New Solar Array

NASA Space Flight

<[https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021062102nasa&r=email-dece&l=00f-](https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021062102nasa&r=email-dece&l=00f-eb5&t=c&data=04|01|randy.c.cruz@nasa.gov|3a3cd3c8e89c4b2347d508d934a3644e|7005d45845be48ae8140d43da96dd17b|0|0|637598698643469949|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ik1haWwiLCJXVCi6Mn0=|1000&sdata=xBC+zcxpjU50hLizzMfj1x3L/6VYNL8VfKUNM6ZBJPI=&reserved=0)

eb5&t=c&data=04|01|randy.c.cruz@nasa.gov|3a3cd3c8e89c4b2347d508d934a3644e|7005d45845be48ae8140d43da96dd17b|0|0|637598698643469949|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ik1haWwiLCJXVCi6Mn0=|1000&sdata=xBC+zcxpjU50hLizzMfj1x3L/6VYNL8VfKUNM6ZBJPI=&reserved=0> (6/20, Harding) “Two astronauts went outside the International Space Station (ISS) to complete installation of the first of six new Boeing-built solar arrays — part of a program to increase the station’s electrical power generation capacity as its science and research demands increase and future expansion plans continue. The Extravehicular Activity (EVA) – officially known as US EVA-75 – began at 11:42 UTC / 07:42 EDT when Thomas Pesquet from the European Space Agency (ESA) and Shane Kimbrough from NASA took their spacesuits to battery power before exiting the Quest Airlock to begin their work.”

#### Astronauts Install New Solar Panels In 6-hour Spacewalk On International Space Station

CNN

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021062102nasa&r=email-dece&l=011-573&t=c&data=04|01|randy.c.cruz@nasa.gov|3a3cd3c8e89c4b2347d508d934a3644e|7005d45845be48ae8140d43da96dd17b|0|0|637598698643469949|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6IkhhaWwiLCJXVCi6Mn0=|1000&sdata=lgHOPvqLZaDYlvfsFqi4Mwm1HdxE/mCEdWPrFLZwJ8M=&reserved=0>> (6/20, Strickland) "NASA astronaut Shane Kimbrough and European Space Agency astronaut Thomas Pesquet conducted a spacewalk Sunday – their second in the past week – to install new solar arrays that will provide a power boost to the space station. The spacewalk came days after facing "technical delays" during a spacewalk on Wednesday. The astronauts carried over some of Wednesday's work that was left unfinished due to the issues."

#### Astronauts On Spacewalk Deploy First Roll-Out Solar Array To Boost Power For Station

SPACE

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#### In Second Attempt, Spacewalkers Successfully Deploy Balky Solar Array

CBS News

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021062102nasa&r=email-dece&l=012-cc6&t=c&data=04|01|randy.c.cruz@nasa.gov|3a3cd3c8e89c4b2347d508d934a3644e|7005d45845be48ae8140d43da96dd17b|0|0|637598698643479905|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6IkhhaWwiLCJXVCi6Mn0=|1000&sdata=sPmDYeyRIQ6Z6+XSQJVXdtOSIJKMm/DT+JEQL0+HukA=&reserved=0>> (6/20, Harwood) "Spacewalkers Thomas Pesquet and Shane Kimbrough successfully deployed a balky roll-out solar blanket on the International Space Station Sunday after problems derailed an attempt last week. 'Beautiful,' Pesquet, a European Space Agency astronaut, marveled after releasing a final bolt, watching as the 15-foot-wide array began unfurling on the far left end of the station's solar power truss."

#### Rocket Report: China Launches Crew Mission, SpaceX Runs Into Road Troubles

Ars Technica

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021062102nasa&r=email-dece&l=013-80c&t=c&data=04|01|randy.c.cruz@nasa.gov|3a3cd3c8e89c4b2347d508d934a3644e|7005d45845be48ae8140d43da96dd17b|0|0|637598698643489862|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6IkhhaWwiLCJXVCi6Mn0=|1000&sdata=N/jMtSWRQ5B3hFi88ImfYaQ+6QJpAN62wsfHZpGHqkA=&reserved=0>> (6/18, Berger) "Welcome to Edition 4.03 of the Rocket Report! This week saw two significant launches back-to-back. On Wednesday evening, US time, China launched its first crewed mission to its new space station, which was also the country's first human spaceflight in nearly five years. And then, less than a day later, the US Space Force joined the

ranks of reusable launch customers.”

Will Jeff Bezos Be An Astronaut When He Travels Into Space On A Blue Origin Flight? It's Complicated, Because Experts Say There's Still A Debate About Where Space Begins.

Insider

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021062102nasa&r=email-dece&l=014-1a5&t=c&data=04|01|randy.c.cruz@nasa.gov|3a3cd3c8e89c4b2347d508d934a3644e|7005d45845be48ae8140d43da96dd17b|0|0|637598698643489862|Unknown|TWFpbGZsb3d8eyJWIjojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikl1haWwiLCJXVCi6Mn0=|1000&sdata=Nhb2gHTXuyouaGZtYjX10qHZOoY8Yomi3NIKB8PqAYE=&reserved=0>> (6/18)  
“Blue Origin said founder Jeff Bezos will earn his ‘astronaut wings’ in July. He’ll cross the Kármán Line, the imaginary boundary into space. But academics and other experts said there isn’t yet a true consensus on where space begins.”

NASA ‘Keeping Eye’ On Jeff Bezos And Other Space Astronaut Billionaires

Fox Business

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“With Billionaire Jeff Bezos weeks away from lifting off in his own Blue Origin rocket, along with his brother Mark and a mystery passenger who paid \$28 million to be onboard, NASA has a message: Space is not going to be the wild-west for billionaires or anyone else looking to blast off. ‘I’m keeping my eye on it, but they’re going to have to meet the same rigorous physical and psychological examination for any other professional astronaut,’ NASA Administrator Bill Nelson told FOX Business exclusively.”

NASA Is Keeping A Watchful Eye On Jeff Bezos And Other Billionaires Competing In The Space Race, According To The Agency's Chief

Insider

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021062102nasa&r=email-dece&l=016-d14&t=c&data=04|01|randy.c.cruz@nasa.gov|3a3cd3c8e89c4b2347d508d934a3644e|7005d45845be48ae8140d43da96dd17b|0|0|637598698643499821|Unknown|TWFpbGZsb3d8eyJWIjojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikl1haWwiLCJXVCi6Mn0=|1000&sdata=cp3nfaX6Fs3/C7POB+7U9EH2IJMmbZqVavf/1/xnm3A=&reserved=0>> (6/20, Tayeb)  
“It’s only weeks until Amazon CEO Jeff Bezos blasts off into space with his brother, Mark, and an unidentified passenger who paid \$28 million for a seat on Blue Origin’s, New Shepherd spacecraft. But in an interview with Fox Business, NASA said it had a message for the billionaires competing in a race to space: it’s not going to be the Wild West for those looking to travel there.”

Boeing Starliner Is On Track For Its July Test Flight

SlashGear

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“NASA and Boeing are currently preparing the Starliner capsule for Orbital Flight Test-2 (OFT-2). The flight



test is a critical portion of the testing regime to clear Starliner to carry astronauts to and from the ISS in the future. Recently, teams at the Starliner production facility at the NASA Kennedy Space Center in Florida began to fuel the Starliner crew module and service module in preparation for the OFT-2 launch on Friday, July 30.”

#### Tens Of Thousands Sign Petition To Stop Jeff Bezos From Returning To Earth

NPR

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021062102nasa&r=email-dece&l=018-e8e&t=c&data=04|01|randy.c.cruz@nasa.gov|3a3cd3c8e89c4b2347d508d934a3644e|7005d45845be48ae8140d43da96dd17b|0|0|637598698643509773|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQljojV2luMzliLCJBTiI6I6k1haWwiLCJXVCi6Mn0=|1000&sdata=3D8pyL139EDPjPJmJOxRFUuCB++GrkBg1rtVLACZxs=&reserved=0>> (6/20, Jones) “On July 20, Amazon’s founder and billionaire magnate Jeff Bezos and his brother Mark will board the New Shepard suborbital rocket system. The Bezos brothers, one auction winner with \$28 million to spare, and a fourth person will become the first crew aboard the reusable rocket for its 11-minute voyage to space.”

#### ISS Spacewalk

Spectrum News 13 (FL)

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#### ISS Spacewalk

KABC-TV Los Angeles

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021062102nasa&r=email-dece&l=01a-6e4&t=c&data=04|01|randy.c.cruz@nasa.gov|3a3cd3c8e89c4b2347d508d934a3644e|7005d45845be48ae8140d43da96dd17b|0|0|637598698643519730|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQljojV2luMzliLCJBTiI6I6k1haWwiLCJXVCi6Mn0=|1000&sdata=5+vTuRhI/jYWZvojDQWu+wF5C7l68XppmNxJEp0jzsc=&reserved=0>> (6/20) “It is a busy morning at the International Space Station. Here are live pictures of a spacewalk happening now.”

#### Moon to Mars

#### Funding For Bezos Space Company Fails To Launch In House

Wall Street Journal

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021062102nasa&r=email-dece&l=01b-ae7&t=c&data=04|01|randy.c.cruz@nasa.gov|3a3cd3c8e89c4b2347d508d934a3644e|7005d45845be48ae8140d43da96dd17b|0|0|637598698643519730|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQljojV2luMzliLCJBTiI6I6k1haWwiLCJXVCi6Mn0=|1000&sdata=nZcxVt9rfXWjxjgoaMSG3pjihP+6u9k0DA5WdbMU+gU=&reserved=0>> (6/18, Rubin) “HOUSE THROWS UP ROADBLOCKS to funding for Jeff Bezos’s Blue Origin space exploration company that was approved as part of the Senate’s bipartisan China competition legislation last week. Members from both parties made clear the \$10 billion authorization, pushed by Washington Democratic Sen. Maria Cantwell, for a second moon

lander contract ( Elon Musk's SpaceX won the first contract earlier this year, while Blue Origin was one of two runners-up) was a nonstarter for the House's version of science and innovation legislation.”

#### Space Agencies Are Learning How To Make Food On Mars And The Moon

CNBC

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021062102nasa&r=email-dece&l=01c-87b&t=c&data=04|01|randy.c.cruz@nasa.gov|3a3cd3c8e89c4b2347d508d934a3644e|7005d45845be48ae8140d43da96dd17b|0|0|637598698643519730|Unknown|TWFpbGZsb3d8eyJWIjojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikl1haWwiLCJXVCi6Mn0=|1000&sdata=z9HJMMWiL4LQpJsqx1ki5gLtx3EiUifPBDkr8SQwMrc=&reserved=0>> (6/20, Wood) “Whether from continent to continent or coast to coast, people have always made their big moves together with plants. Traveling away from Earth would be no different. Our success on other worlds will rest, in part, on the supply stems of plants. ... Space agencies from various countries have spent decades developing the technologies necessary to bring farming indoors, and now the German space agency and NASA are pushing the state-of-the-art of soil-free gardening to its limits with a greenhouse in Antarctica and laying the groundwork for their next act: farming systems where the farmers are optional.”

#### Turkey Aims To Send Rocket To Moon In Three Years, Land Lunar Rover By 2030

SPACE

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021062102nasa&r=email-dece&l=01d-379&t=c&data=04|01|randy.c.cruz@nasa.gov|3a3cd3c8e89c4b2347d508d934a3644e|7005d45845be48ae8140d43da96dd17b|0|0|637598698643529686|Unknown|TWFpbGZsb3d8eyJWIjojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikl1haWwiLCJXVCi6Mn0=|1000&sdata=8pVDs5fxE6WrCTmlv186/Boi7uxdhe06OxgWeCunc2Y=&reserved=0>> (6/18, Pultarova) “Turkey plans to send a rover to the moon by the end of the decade using a domestically built rocket engine that will first fly to the moon in a test mission in 2023. Speaking at the Global Space Exploration Conference (GLEX) 2021 in St. Petersburg, Russia, on Tuesday (June 16), Serdar Hüseyin Yildirim, president of the Turkish Space Agency (TUA), discussed details of the country's space program, which was officially unveiled by Turkey's President Recep Tayyip Erdogan in February this year.”

#### NASA Will Send A Mannequin On A Space Mission. Here's How You Can Help Name It.

Florida Today

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021062102nasa&r=email-dece&l=01e-cd2&t=c&data=04|01|randy.c.cruz@nasa.gov|3a3cd3c8e89c4b2347d508d934a3644e|7005d45845be48ae8140d43da96dd17b|0|0|637598698643529686|Unknown|TWFpbGZsb3d8eyJWIjojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikl1haWwiLCJXVCi6Mn0=|1000&sdata=vOlstZF7f6JacmMLH9mA+x6qj65nBbiV1x3bmJh7/Cg=&reserved=0>> (6/18, Miranda) “NASA will send a mannequin around the moon, and you can help name it. Slated to launch in November, a mannequin will be on board an uncrewed flight test of the Space Launch System and the Orion spacecraft, NASA said in a news release. Its mission? Collect data to help astronauts on trips, such as the Artemis II spaceflight scheduled for 2023. The mannequin is designed to resemble the human body and is used in training for emergency rescues, medical education and research.”

#### NASA Needs Your Help Naming The Dummy It's Sending To The Moon

CNET News

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021062102nasa&r=email-dece&l=01f->

081&t=c&data=04|01|randy.c.cruz@nasa.gov|3a3cd3c8e89c4b2347d508d934a3644e|7005d45845be48ae8140d43da96dd17b|0|0|637598698643539641|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQljojV2luMzliLCJBTiI6Ikl1haWwiLCJXVCi6Mn0=|1000&sdata=RSE7TJJT0Tp+ykzeEA99crjh6kWyOOdHMvGRgN5p0Gw=&reserved=0> (6/18, Kooser) "NASA's Artemis I mission to send an Orion spacecraft around the moon is getting more real by the moment. First, NASA assembled its massive SLS rocket. Now the mission's non-human passenger, or 'moonikin,' needs a name. The space agency announced a Name the Artemis Moonikin Challenge to decide what the man-shaped manikin will be called. The uncrewed flight test is targeting takeoff for later this year. The manikin will allow NASA to collect data on how the journey might impact a real human body."

## Solar System and Beyond

### NASA's Sudden Interest In Venus Is All About Climate Change

#### The Hill

<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021062102nasa&r=email-dece&l=020-

9ba&t=c&data=04|01|randy.c.cruz@nasa.gov|3a3cd3c8e89c4b2347d508d934a3644e|7005d45845be48ae8140d43da96dd17b|0|0|637598698643539641|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQljojV2luMzliLCJBTiI6Ikl1haWwiLCJXVCi6Mn0=|1000&sdata=3A+x1Bd78HpVQSA57CtXEo9tiomGcgfa9Y1NTrBLFE=&reserved=0> (6/20, Whittington) "Recently, NASA Administrator Bill Nelson announced that the space agency will send not one but two robotic probes to Venus under the Discovery program. The probes are DAVINCI+ and VERITAS. The two probes, which are due to be launched by the end of the 2020s, will be the first dedicated NASA missions to the second planet from the sun in decades. Why Venus and why now?"

### Europa Volcanism & Interior Heating Modeled In Detail, Offers Research Targets For Upcoming Missions

#### NASA Space Flight

<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021062102nasa&r=email-dece&l=021-

023&t=c&data=04|01|randy.c.cruz@nasa.gov|3a3cd3c8e89c4b2347d508d934a3644e|7005d45845be48ae8140d43da96dd17b|0|0|637598698643539641|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQljojV2luMzliLCJBTiI6Ikl1haWwiLCJXVCi6Mn0=|1000&sdata=A+PB5MWwpeVj91PFK5hYb3DXmLdQISaKclxIUBh3nic=&reserved=0> (6/18, Warren) "Europa, an icy Jovian moon that likely possesses an ocean beneath its icy crust, may have an interior that is hot enough to produce volcanic activity on its seafloor. New research provides evidence that this seafloor volcanism likely occurred in the moon's past and maybe ongoing at present as well. The team of researchers, led by Dr. Marie Bhounková of Charles University in the Czech Republic, developed their own 3D models of Europa's interior and heating transfer properties to investigate the possibility of volcanism on Europa's ocean floor given other volcanism seen in the Jovian system."

### NASA Struggles To Fix A Hubble Space Telescope Computer Glitch

#### Engadget

<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021062102nasa&r=email-dece&l=022-

e41&t=c&data=04|01|randy.c.cruz@nasa.gov|3a3cd3c8e89c4b2347d508d934a3644e|7005d45845be48ae8140d43da96dd17b|0|0|637598698643549601|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQljojV2luMzliLCJBTiI6Ikl1haWwiLCJXVCi6Mn0=|1000&sdata=Uc+xJY20PkxtFWHzqZWBSQsMm+7M8zDA2uBZ2G9I8nw=&reserved=0> (6/19, Fingas) "The Hubble Space Telescope has been showing its age for a while, but a new problem is proving to be especially frustrating. As the AP reports, NASA has spent nearly a week (as of this writing) trying to fix a glitch in Hubble's payload computer. The system broke down on June 13th, and the operations team had no success either restarting the computer on the 14th or switching to a backup memory module. The agency also failed in repeated

attempts with both modules on the evening of June 17th.”

## NASA Is Working To Restore Hubble Space Telescope Operations

SlashGear

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021062102nasa&r=email-dece&l=023-4a9&t=c&data=04|01|randy.c.cruz@nasa.gov|3a3cd3c8e89c4b2347d508d934a3644e|7005d45845be48ae8140d43da96dd17b|0|0|637598698643549601|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6IkhWwWwLjCjXVCi6Mn0=|1000&sdata=roX5mEFBajihfZRIHzz4O+Ym0K9D2E+PD0jne1tQsS=&reserved=0>> (6/19, McGlaun) “The Hubble Space Telescope has been having significant troubles in orbit recently as the telescope went into safe mode after the failure of an onboard computer. NASA has confirmed that operations are underway to restore the payload computer on the Hubble telescope. Operations teams are running tests and collecting more information on the system to isolate the problem further.”

## Computer Problem Takes Hubble Offline

Space News

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021062102nasa&r=email-dece&l=024-76f&t=c&data=04|01|randy.c.cruz@nasa.gov|3a3cd3c8e89c4b2347d508d934a3644e|7005d45845be48ae8140d43da96dd17b|0|0|637598698643559558|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6IkhWwWwLjCjXVCi6Mn0=|1000&sdata=TECbyW+sJR0WC4hLBPymbhm4ihDKwenhVngHw+8p00E=&reserved=0>> (6/19, Foust) “Spacecraft controllers are continuing to work on a faulty computer memory system on NASA’s Hubble Space Telescope that has stopped telescope operations for nearly a week. A payload computer on Hubble stopped working June 13, the agency said in a June 16 statement. Engineers speculated that the computer, used to manage operations of Hubble’s science instruments, malfunctioned because of a degrading memory module, putting the instruments into a safe mode.”

## Computer Glitch Sends Aging NASA Hubble Space Telescope Into Safe Mode

CNET News

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021062102nasa&r=email-dece&l=025-e32&t=c&data=04|01|randy.c.cruz@nasa.gov|3a3cd3c8e89c4b2347d508d934a3644e|7005d45845be48ae8140d43da96dd17b|0|0|637598698643559558|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6IkhWwWwLjCjXVCi6Mn0=|1000&sdata=V7Ca+c52FjA+Uv5G5onPgA/8EXLendw7NCpcs/pbs3g=&reserved=0>> (6/18, Kooser) “The Hubble Space Telescope has spent over three decades bringing us glorious images and data from our universe. But the spacecraft is showing its age. The Hubble team is now troubleshooting a problem with the telescope’s payload computer – a piece of hardware built in the 1980s – that controls its science instruments.”

## Intelligent Life Probably Exists On Distant Planets — Even If We Can’t Make Contact, Astrophysicist Says

Washington Post

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021062102nasa&r=email-dece&l=026-363&t=c&data=04|01|randy.c.cruz@nasa.gov|3a3cd3c8e89c4b2347d508d934a3644e|7005d45845be48ae8140d43da96dd17b|0|0|637598698643559558|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6IkhWwWwLjCjXVCi6Mn0=|1000&sdata=GaXlUVSgy2/AE8TXgGEc95RcWAd31r1wWU4leSXEqMc=&reserved=0>> (6/18) “Recently released Navy videos of what the U.S. government now classifies as ‘unidentified aerial phenomena’ have set off another round of speculative musings on the possibility of aliens visiting our planet. Like other astrophysicists

who have weighed in on these sightings, ... Beginning in the early 1960s, scientists have tried to calculate the odds of advanced extraterrestrial life. In 1961, researchers at the NASA-funded search for extraterrestrial intelligence (SETI) developed the 'Drake Equation' to estimate how many civilizations in the Milky Way might evolve to develop the technology to emit detectable radio waves."

Space Tech

No content.

Various

'The Burning Blue' Is A Compact, Suspenseful Chronicle Of The Challenger Disaster

Washington Post

<[https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021062102nasa&r=email-dece&l=027-](https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021062102nasa&r=email-dece&l=027-1d5&t=c&data=04|01|randy.c.cruz@nasa.gov|3a3cd3c8e89c4b2347d508d934a3644e|7005d45845be48ae8140d43da96dd17b|0|0|637598698643569512|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ik1haWwiLCJXVCi6Mn0=|1000&sdata=YwBTzbXGeT4Mud+KI/IqAUyrGC0HPcxZ/Y38+RELHs0=&reserved=0)

1d5&t=c&data=04|01|randy.c.cruz@nasa.gov|3a3cd3c8e89c4b2347d508d934a3644e|7005d45845be48ae8140d43da96dd17b|0|0|637598698643569512|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ik1haWwiLCJXVCi6Mn0=|1000&sdata=YwBTzbXGeT4Mud+KI/IqAUyrGC0HPcxZ/Y38+RELHs0=&reserved=0> (6/18)

"In the months leading up to Jan. 28, 1986, the day the space shuttle Challenger crashed, killing everyone onboard, there were ominous portents. As journalist Kevin Cook recounts in his solid, gripping new book, 'The Burning Blue: The Untold Story of Christa McAuliffe and NASA's Challenger Disaster,' the bad signs piled up: A teenage gunman had entered the New Hampshire high school where McAuliffe taught social studies and was killed by police after taking hostages. When McAuliffe and other astronaut hopefuls took a trip to an amusement park, a young employee, trying to impress them, got tangled in the machinery of a ride and died."

NASA Shuttle Crew Likely Survived First Seconds After Explosion, Book Claims

Daily Mirror (UK)

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ec4&t=c&data=04|01|randy.c.cruz@nasa.gov|3a3cd3c8e89c4b2347d508d934a3644e|7005d45845be48ae8140d43da96dd17b|0|0|637598698643569512|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ik1haWwiLCJXVCi6Mn0=|1000&sdata=kxt5PUAx5uOSaaNCzvKXPq8ZtuyWFaEwwc88EKDzkJI=&reserved=0> (6/19,

Merrifield) "The tragic crew of NASA's Challenger space shuttle likely survived the devastating explosion before the capsule crashed into the Atlantic, a new book claims. Crew members Michael Smith, Francis 'Dick' Scobee, Ronald McNair, Ellison Onizuka, Judith Resnik, Gregory Jarvis and Christa McAuliffe were ejected into the fireball 73 seconds after the launch in Florida in 1986."

NASA Launches Mission Equity Initiative To Include Underserved Populations

SlashGear

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61f&t=c&data=04|01|randy.c.cruz@nasa.gov|3a3cd3c8e89c4b2347d508d934a3644e|7005d45845be48ae8140d43da96dd17b|0|0|637598698643579469|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ik1haWwiLCJXVCi6Mn0=|1000&sdata=8b2klRc5TZqwnrQJXD2bgXrWLObIGmU3y1MmxNABb5o=&reserved=0> (6/20,

McGlaun) "NASA announced recently that it was launching Mission Equity which is described as a comprehensive effort to assess expansion and modification of agency programs, procurements, grants, and policies. The goal is to examine what potential barriers and challenges exist for communities historically underrepresented and underserved. NASA administrator Bill Nelson says the agency is a 21st century agency with 22nd century goals."

## Rep. Waltz Reacts To Latest 'Woke' NASA Ad

Fox News

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"MICHAEL WALTZ: More diversity in space than our astronauts, great. What we need to be focused on is getting more Americans into space because right now the Chinese are passing us. They are kicking our butts up there, and it's a real problem. Brian, more launches, more Chinese launches in space last year than the rest of the world combined, including the United States. As you said, just put their own astronauts in their own space station, which is brand new and being built, ours is 30 years old and decrepit."

## 'Reach Those We've Never Reached Before': NASA Joins The Woke Train With 'Mission Equity'

Daily Caller

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"The National Aeronautics and Space Administration is launching a new mission on Friday to analyze what parts of its agency have potential barriers for historically 'underrepresented and underserved' communities. Mission Equity is an endeavor to look at the agency's programs, procurements, grants and policies to examine what challenges exist for minorities who want to join the National Aeronautics and Space Administration (NASA)."

## NASA Launches Mission For 'Equity'

Fox News

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"NASA announced the launch of a new diversity initiative this week called 'Mission Equity.' It's a move the agency said would aid in the effort to assess expansion and modification of its programs, grants, procurements and policies in addition to scrutinizing potential barriers and challenges for communities that are 'historically underrepresented and underserved.'"

## If You Care About The US, Root For China To Score A Win In Space

The Hill

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"It can be argued that members of Congress and presidents sometimes appear to put their personal re-elections before all else — occasionally, this happens even at the expense of the long-term welfare of America. For

politicians who view their lives and personal advancement in increments of two-, four- and six-year windows, tangible, immediate vote-influencing issues tend to dominate their policy decisions. ... The Biden administration and many members of Congress appear to have placed American preeminence in space back on the rear burner, or they've knocked it off the stove entirely. They're seeking to allocate more of NASA's space budget to climate change and other issues."

#### NASA, USPS Team Up To Create Stunning Sun Stamps

Fox News

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#### NASA's Images Of The Sun Find A Place On Postage Stamps

SlashGear

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#### US Postal Service Releases 'Sun Science' Stamps With NASA Imagery

SPACE

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#### Ex-Astronaut Melroy Confirmed As Deputy NASA Administrator

Aviation Week

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haWwiLCJXVCi6Mn0=|1000&sdata=BE/lpIKrEC8sGjxPj3muhzWStWM2UedwPNBEdkqQrWU=&reserved=0> (6/18)  
"Former space shuttle commander and retired U.S. Air Force Col. Pamela Melroy was confirmed by the U.S. Senate to become the deputy administrator of NASA, serving alongside NASA chief Bill Nelson."

#### Ex-NASA Scientist Imprisoned For 'Long-Running Deception' Working In China

FedScoop

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Nyczepir) "U.S. District Judge P. Kevin Castel sentenced a former NASA nanotechnologist, suspected of giving Chinese nationals access to its facilities, to 30 days in prison Wednesday for lying to federal agents about working at a Chinese research university. Meyya Meyyappan, 66, served as chief scientist for exploration technology at the Center for Nanotechnology at NASA's Ames Research Center, until he was caught lying to the FBI and NASA Office of Inspector General about being a visiting professor at Soochow University for an estimated \$1.4 million over five years."

#### NASA Commemorates Juneteenth With Historic View From Space

SPACE

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Gohd) "NASA is commemorating Juneteenth on Saturday (June 19) with a historic view from space. Saturday, June 19 marks Juneteenth, officially Juneteenth National Independence day and also known as Jubilee Day, Emancipation Day and Black Independence Day, which celebrates the end of slavery in the U.S."

#### NASA, USPS Release Stamp Set

KTLA-TV Los Angeles

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"NASA is teaming up with the US postal service to release a new set of stamps. The new stamps celebrate NASA's decade long observation of the sun."

Other

#### Russia And China Outline Joint Lunar Station Road Map

Aviation Week

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haWwiLCJXVCI6Mn0=|1000&sdata=9VOP23LJlcQb5iNiKtex8Pa8Q4VJiFWWT/qZVbfbBE=&reserved=0> (6/21)  
“Russia and China are deepening their cooperation in aerospace, making plans to develop a lunar base by 2035 that also will be open for international cooperation. The International Lunar Research Station (ILRS) being developed by Russia’s Roscosmos space agency and the China National Space...”

#### SpaceX Successfully Launched GPS III Space Vehicle 05

SlashGear

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#### Space Tourism Startup Flies Test Balloon 20 Miles High Over Florida

UPI

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#### Space Force Launches Fifth GPS III Satellite For More Secure Positioning

Federal Times

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## [EXTERNAL] NASA Morning Briefing for Monday, June 28, 2021

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Editor's Note

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### Astronauts Complete Solar Panel Work In 3rd Spacewalk

AP

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successfully installed the second in a series of powerful solar wings that should keep the space station running the rest of this decade, as space tourism ramps up with visitors beginning in the fall.”

#### Virgin Galactic Gets FAA Approval To Take Customers To Space

Washington Post

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72d&t=c&data=04|01|randy.c.cruz@nasa.gov|711e910bc481435fe1db08d93a23a25a|7005d45845be48ae8140d43da96dd17b|0|0|637604747000611443|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6IkhhaWwiLCJXVCi6Mn0=|1000&sdata=mpsN51PrI8UE5zB266qIIARxzk/v+/H1hqWCSnyVjPw=&reserved=0> (6/25)

“Virgin Galactic says it has Federal Aviation Administration approval to fly customers into space, making it the first spaceline to cross that hurdle, the company announced Friday. The milestone comes at a key moment in the space race: On the anniversary of the Apollo 11 moon landing, July 20, Jeff Bezos plans to be onboard when one of his Blue Origin rockets makes its first crewed spaceflight. The FAA is expected to grant Blue Origin a commercial license soon, according to people familiar with the process.”

#### “Space Is For Everyone”: Europe’s Space Agency To Hire First Disabled Astronaut

Reuters

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317&t=c&data=04|01|randy.c.cruz@nasa.gov|711e910bc481435fe1db08d93a23a25a|7005d45845be48ae8140d43da96dd17b|0|0|637604747000611443|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6IkhhaWwiLCJXVCi6Mn0=|1000&sdata=LI1Vv0a6V3t6AfXok3/CW/atSjRPIR0W5pZPceWimW4=&reserved=0> (6/25,

Escritt) “The European Space Agency hopes to hire and launch the world’s first physically disabled astronaut and several hundred would-be para-astronauts have already applied for the role, ESA head Josef Aschbacher told Reuters on Friday. The 22-member space programme has just closed its latest decennial recruitment call for astronauts and received 22,000 applicants, Aschbacher said.”

#### The Chinese-Russian Lunar Axis Adopts A Plan From The Late Paul Spudis

The Hill

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4d3&t=c&data=04|01|randy.c.cruz@nasa.gov|711e910bc481435fe1db08d93a23a25a|7005d45845be48ae8140d43da96dd17b|0|0|637604747000621398|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6IkhhaWwiLCJXVCi6Mn0=|1000&sdata=mtL8MEyDrE6WI3jZS9TYaFD63/OF2TOts8SqSBxqpoQ=&reserved=0> (6/27,

Whittington) “Recently, a group of Russian and Chinese space officials revealed plans for what they call an ‘International Lunar Research Station’ during a conference in St. Petersburg, Russia. The plan for the facility’s development seemed remarkably similar to one proposed by Paul Spudis, the late lunar geologist and return-to-the-moon advocate, and Tony Lavoie, at the time employed by NASA.”

#### Nelson’s First NASA Challenge: The Space Race With China

Orlando (FL) Sentinel

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f37&t=c&data=04|01|randy.c.cruz@nasa.gov|711e910bc481435fe1db08d93a23a25a|7005d45845be48ae8140d43da96dd17b|0|0|637604747000621398|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6IkhhaWwiLCJXVCi6Mn0=|1000&sdata=pQd+B7RXOyyq1P+IGJhdEGglwEkFmPRalhSSbGtuBKI=&reserved=0> (6/27,

Weiner, Paras) "While NASA focuses on Venus, China's space program, the China National Space Administration (CNSA), is aimed at landing people on the moon, something NASA hasn't done since Apollo 17 in 1972. It's astounding that 52 years since the U.S. landed, we have done nothing with human beings for decades but send commuter shuttles to a space station 200 miles away."

Flight

How NASA Intends To Make The Next Narrowbody Airliners 25% More Efficient

FlightGlobal

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Earth

Researchers Harness A NASA Satellite To Track Microplastics In The Atlantic

SlashGear

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Humans in Space

Astronauts Complete Solar Panel Work In 3rd Spacewalk

AP

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## Spacewalking Astronauts Deploy Second New Solar Array For Space Station

SPACE

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## Astronauts Unfurl 60-Foot-Long Space Station Solar Array

UPI

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## Spacewalking Astronauts Install Second Upgraded Solar Array

Spaceflight Now

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021062802nasa&r=email-13fc&l=00d-8e1&t=c&data=04|01|randy.c.cruz@nasa.gov|711e910bc481435fe1db08d93a23a25a|7005d45845be48ae8140d43da96dd17b|0|0|637604747000651265|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikl1haWwiLCJXVCi6Mn0=|1000&sdata=C2UeQZ3fVJMjD5LhAhjszSEW8A33XQaCr1TVeyaZv/c=&reserved=0>> (6/25, Harwood) “French astronaut Thomas Pesquet and NASA crewmate Shane Kimbrough floated back outside the International Space Station Friday and deployed a 60-foot-long roll-out solar array, the second of six new blankets being installed to upgrade the lab’s power system and offset age-related degradation. ‘It looks like the deployment is complete,’ Pesquet radioed, watching the array unroll itself six hours after the spacewalk began.”

## Pesquet & Kimbrough Complete New Solar Array Installation On ISS

NASA Space Flight

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outside the International Space Station (ISS), this time to install the second of six new Boeing-built ISS Roll Out Solar Arrays (IROSAs) to the outpost — part of a program to increase the station’s electrical power capability as its science and research demands increase and future expansion plans continue.”

#### Virgin Galactic Gets FAA Approval To Take Customers To Space

Washington Post

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“Virgin Galactic says it has Federal Aviation Administration approval to fly customers into space, making it the first spaceline to cross that hurdle, the company announced Friday. The milestone comes at a key moment in the space race: On the anniversary of the Apollo 11 moon landing, July 20, Jeff Bezos plans to be onboard when one of his Blue Origin rockets makes its first crewed spaceflight. The FAA is expected to grant Blue Origin a commercial license soon, according to people familiar with the process.”

#### Virgin Galactic Gets Official Clearance To Start Flying Paying Customers To Space

Gizmodo

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021062802nasa&r=email-13fc&l=010-5c0&t=c&data=04|01|randy.c.cruz@nasa.gov|711e910bc481435fe1db08d93a23a25a|7005d45845be48ae8140d43da96dd17b|0|0|637604747000661221|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6I1k1haWwiLCJXVCi6Mn0=|1000&sdata=0RFDzShmoNAh2RpVBE3/UEzCZ6uHb1VpDz9wlQx6CYs=&reserved=0>> (6/25, Dvorsky) “An upgraded FAA operators license now allows Virgin Galactic to include paying customers on its space flights, in what is a major milestone for the company and also the nascent space tourism sector. The space tourism industry is starting to heat up. Blue Origin will attempt its first crewed launch of the New Shepard rocket in July, with Amazon CEO Jeff Bezos and the winner of a \$28 million auction on board for the ride. Bezos is poised to beat his rivals in the emerging cold war of billionaires trying to get to space before the other guy, but today’s news—that Virgin Galactic has secured an upgraded license to fly paying customers to space—means Richard Branson might actually be the first among them to see the curvature of Earth from suborbital space.”

#### Virgin Galactic Earns FAA Approval To Fly Humans To Space

ABC News

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#### FAA Gives Green Light To Virgin Galactic’s Space Tourism

The Hill

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021062802nasa&r=email-13fc&l=012-f52&t=c&data=04|01|randy.c.cruz@nasa.gov|711e910bc481435fe1db08d93a23a25a|7005d45845be48ae8140d43da96dd17b|0|0|637604747000671179|Unknown|TWFpbGZsb3d8eyJWljoic4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikh1aWwiLCJXVCi6Mn0=|1000&sdata=5tjJ9Y1HqqcKfrTvA62VolqA5aBHin6QYFmiLK6vQlo=&reserved=0>> (6/25, Kelley) “Virgin Galactic, one of the aerospace companies working to pioneer space tourism, received approval from the Federal Aviation Administration (FAA) to take passengers to space. This follows a May 22 test flight of the company’s VMS Eve and VSS Unity. It was Virgin Galactic’s third space flight and the first launch from Spaceport America, located in New Mexico.”

#### Virgin Galactic Receives FAA Approval To Take Passengers Into Space

Engadget

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#### Virgin Galactic Gets FAA Approval To Fly Customers To Space

Wall Street Journal

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021062802nasa&r=email-13fc&l=014-5de&t=c&data=04|01|randy.c.cruz@nasa.gov|711e910bc481435fe1db08d93a23a25a|7005d45845be48ae8140d43da96dd17b|0|0|637604747000681137|Unknown|TWFpbGZsb3d8eyJWljoic4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikh1aWwiLCJXVCi6Mn0=|1000&sdata=52R7olAXZH12vhgHLcrimiJADA1d80MVsvIlayaQyeyQ=&reserved=0>> (6/25, Grossman) “Richard Branson’s Virgin Galactic Holdings Inc. came a step closer to sending customers to the edge of space Friday as federal regulators expanded the company’s operator license.”

#### Virgin Galactic Cleared By FAA To Fly Customers Into Space

Bloomberg

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021062802nasa&r=email-13fc&l=015-092&t=c&data=04|01|randy.c.cruz@nasa.gov|711e910bc481435fe1db08d93a23a25a|7005d45845be48ae8140d43da96dd17b|0|0|637604747000681137|Unknown|TWFpbGZsb3d8eyJWljoic4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikh1aWwiLCJXVCi6Mn0=|1000&sdata=G3mezxcTfuo1Zk5aB+CW5vW/vO9lkwOyxPNoeWf4ors=&reserved=0>> (6/25, Palazzo) “Virgin Galactic Holdings Inc. received regulatory approval to fly customers into space, moving the budding industry founded by billionaires one step closer to reality. The shares surged almost 40% – the biggest one-day jump ever. The Federal Aviation Administration upgraded the company’s existing license to cover customer flights, Virgin Galactic said Friday in a statement, saying the approval was the first of its kind. The company also confirmed that a May 22 test flight performed well against objectives.”

#### Virgin Galactic Cleared To Fly Customers On SpaceShipTwo

Space News

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## Branson’s Virgin Galactic Cleared For Takeoff As Space Tourism Race Heats Up

Reuters

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021062802nasa&r=email-13fc&l=017-9f3&t=c&data=04|01|randy.c.cruz@nasa.gov|711e910bc481435fe1db08d93a23a25a|7005d45845be48ae8140d43da96dd17b|0|0|637604747000691095|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikh1aWwiLCJXVCi6Mn0=|1000&sdata=S7E0P+XmpQ/dBWK9In5I9tKD7p19ah1Mo/T6Y8Gin4=&reserved=0>> (6/25) “Billionaire Richard Branson’s spaceship company Virgin Galactic (SPCE.N) said on Friday it received approval from the U.S. aviation safety regulator to fly people to space, turning up the pressure on rivals in the nascent and expensive space tourism sector. The company’s shares surged as much as 40% to \$56.40, their highest since February, after more than doubling in value this year.”

## Virgin Galactic Gets FAA’s OK To Launch Customers To Space

AP

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021062802nasa&r=email-13fc&l=018-735&t=c&data=04|01|randy.c.cruz@nasa.gov|711e910bc481435fe1db08d93a23a25a|7005d45845be48ae8140d43da96dd17b|0|0|637604747000691095|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikh1aWwiLCJXVCi6Mn0=|1000&sdata=rT1ZmZdMT4eSO5UN+HI5j1mo5Aa4Knea/Nj69w68JvQ=&reserved=0>> (6/25, Dunn) “Virgin Galactic finally has the federal government’s approval to start launching customers into space from New Mexico. Richard Branson’s rocketship company announced the Federal Aviation Administration’s updated license on Friday. It’s the final hurdle in Virgin Galactic’s yearslong effort to send paying passengers on short space hops.”

## These Tiny Indestructible Tardigrades Will Reveal How To Survive In Extremes Of Space

SPACE

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021062802nasa&r=email-13fc&l=019-cf5&t=c&data=04|01|randy.c.cruz@nasa.gov|711e910bc481435fe1db08d93a23a25a|7005d45845be48ae8140d43da96dd17b|0|0|637604747000701049|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikh1aWwiLCJXVCi6Mn0=|1000&sdata=uVNLNyeHFFrf2JLiM6r9Rg72mff1oPXUdUpuNOAASkU=&reserved=0>> (6/25, Howell) “Tiny water-dwelling creatures called tardigrades known for their ability to survive in the most extreme environments will be subject to a series of experiments at the International Space Station to reveal the secrets of their superpowers. The 0.02-inch (0.5 mm) eight-legged creatures, also known as water bears, were sent to the space station as part of the Cell Science-04 experiment aboard the SpaceX Dragon 22nd resupply mission on June 3.”

## Chinese Space Station A Looming Threat To US, Experts Say

## Washington Free Beacon

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021062802nasa&r=email-13fc&l=01a-f65&t=c&data=04|01|randy.c.cruz@nasa.gov|711e910bc481435fe1db08d93a23a25a|7005d45845be48ae8140d43da96dd17b|0|0|637604747000701049|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikh1aWwiLCJXVCi6Mn0=|1000&sdata=ZI06MnvNHZKNwXYPnceKoRqiAzpTgESk+GukWpdUaKk=&reserved=0>> (6/26, Beyrer) “China will use its space station to advance its military technology and strengthen its influence in foreign countries, experts and lawmakers warn the Washington Free Beacon. Three Chinese astronauts reached the Tiangong space station on June 17. The project ushers in an expansion of China’s capabilities in space and a boost to its international prestige.”

## Report Backs NASA Proposal To Change Astronaut Radiation Exposure Limits

### Space News

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021062802nasa&r=email-13fc&l=01b-7f5&t=c&data=04|01|randy.c.cruz@nasa.gov|711e910bc481435fe1db08d93a23a25a|7005d45845be48ae8140d43da96dd17b|0|0|637604747000701049|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikh1aWwiLCJXVCi6Mn0=|1000&sdata=PGm1M8URDnuLId3u/WfWYX0Xek+oO155sOzQDuXHhCU=&reserved=0>> (6/25, Foust) “A National Academies committee has endorsed a NASA proposal to change the radiation exposure limits the agency sets for its astronauts but cautioned that the revised limit is still insufficient for human Mars missions. The June 24 report by a committee established by the National Academies and sponsored by NASA backs the agency’s proposal to set a single lifetime radiation exposure limit for astronauts, rather than different limits based on age and gender.”

## ULA, Boeing, And NASA Prepare For Uncrewed And Crewed Starliner Flight Tests

### NASA Space Flight

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021062802nasa&r=email-13fc&l=01c-053&t=c&data=04|01|randy.c.cruz@nasa.gov|711e910bc481435fe1db08d93a23a25a|7005d45845be48ae8140d43da96dd17b|0|0|637604747000711006|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikh1aWwiLCJXVCi6Mn0=|1000&sdata=nUji2z7/C4ghRMlfe/Clq/XwMgMFV7C3+yNqibcxp4E=&reserved=0>> (6/26, Navin, Kanayama) “United Launch Alliance (ULA), Boeing, and NASA have all started their final preparations for the second Orbital Flight Test (OFT-2) for the CST-100 Starliner spacecraft. OFT-2 will demonstrate all of the changes made to the Starliner spacecraft following the partial failure on the first OFT mission in December 2019. Preparations are also underway for the Starliner Crew Flight Test (CFT), including the delivery of the Atlas V rocket to Cape Canaveral, Florida.”

## Boeing And NASA Will Launch Rosie, A Dummy, Into Space Next Month

### SlashGear

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021062802nasa&r=email-13fc&l=01d-cc6&t=c&data=04|01|randy.c.cruz@nasa.gov|711e910bc481435fe1db08d93a23a25a|7005d45845be48ae8140d43da96dd17b|0|0|637604747000711006|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikh1aWwiLCJXVCi6Mn0=|1000&sdata=SiAtmPeUijpUX9hYUprEnEl6enh9Hji9u5xhp0W1+c=&reserved=0>> (6/25, Roston) “NASA and Boeing are gearing up to launch a literal dummy into space next month as part of the Commercial Crew Program. The dummy is named Rosie; she belongs to Boeing, which previously used her to collect data during its first (uncrewed) Orbital Flight Test, the OFT-1. This time around, Rosie will be sent into space to help collect data about Starliner’s design.”

## “Space Is For Everyone”: Europe’s Space Agency To Hire First Disabled Astronaut

Reuters

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021062802nasa&r=email-13fc&l=01e-338&t=c&data=04|01|randy.c.cruz@nasa.gov|711e910bc481435fe1db08d93a23a25a|7005d45845be48ae8140d43da96dd17b|0|0|637604747000720960|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6IkhWwiLCJXVCi6Mn0=|1000&sdata=FvJeWMIkUJySEO8ZdxXcMnWqk8YGUShipq6fq2FOsw=&reserved=0>> (6/25, Escritt) “The European Space Agency hopes to hire and launch the world’s first physically disabled astronaut and several hundred would-be para-astronauts have already applied for the role, ESA head Josef Aschbacher told Reuters on Friday. The 22-member space programme has just closed its latest decennial recruitment call for astronauts and received 22,000 applicants, Aschbacher said.”

## A Final Word Before Mr. Bezos Blasts Off

New York Times

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021062802nasa&r=email-13fc&l=01f-6dd&t=c&data=04|01|randy.c.cruz@nasa.gov|711e910bc481435fe1db08d93a23a25a|7005d45845be48ae8140d43da96dd17b|0|0|637604747000720960|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6IkhWwiLCJXVCi6Mn0=|1000&sdata=v/FQub4wiwqwFIQjBAdfCbaLdZS3t+5fYyZc8BvuJt0=&reserved=0>> (6/27, Bensinger) “In over a decade in which I’ve covered Amazon, one conversation stands out as neatly summarizing the ethos of the e-commerce giant under Jeff Bezos, who will step aside as chief executive next month. An Amazon executive was confronting his new role as a buyer of large appliances, like dishwashers, after several years as a book buyer. ... So while Mr. Bezos floats weightlessly in the cosmos, the question remains whether lawmakers can ultimately bring Amazon back down to earth.”

Jeff Bezos Is Heading To Space, But He’s Not The Only Mogul Obsessed With Extreme Experiences. Here Are The Wildest Ways The World’s Elite Spend Their Free Time.

Insider

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021062802nasa&r=email-13fc&l=020-bdf&t=c&data=04|01|randy.c.cruz@nasa.gov|711e910bc481435fe1db08d93a23a25a|7005d45845be48ae8140d43da96dd17b|0|0|637604747000720960|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6IkhWwiLCJXVCi6Mn0=|1000&sdata=5pTv9s3nHV20EjUCdPXUX1Fz0A9Px6ahEzdR6JiPIKc=&reserved=0>> (6/26, Hartmans) “In just a few short weeks, Jeff Bezos will take the riskiest flight of his life, one that takes him 62 miles above Earth, right to the edge of space. The soon-to-be-ex-Amazon CEO is something of an adventurer, what with his trips out to sea or to the bottom of caves. But that doesn’t exactly make him unique among his peers — in fact, a passion for extreme experiences seems to be a common trait among the world’s billionaires.”

## A Petition To Make Jeff Bezos Stay In Space Has More Than 120,000 Signatures

CNBC

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more than a few people here on Earth are making it known they'd prefer it if the wealthiest man on the planet takes a one-way trip and remains in orbit. A petition on Change.org entitled 'Do not allow Jeff Bezos to return to Earth' launched in early June, after Bezos announced his plans to fly on next month's first passenger spaceflight of his company Blue Origin, and the petition already has more than 122,000 signatures as of Friday afternoon. Bezos has said he's dreamed of going to space since he was 5 years old."

#### Here Is How Richard Branson May Try To Beat Jeff Bezos To Space

CNBC

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021062802nasa&r=email-13fc&l=022-667&t=c&data=04|01|randy.c.cruz@nasa.gov|711e910bc481435fe1db08d93a23a25a|7005d45845be48ae8140d43da96dd17b|0|0|637604747000730917|Unknown|TWFPbGZsb3d8eyJWljoimc4wLjAwMDAiLCJQljoiv2luMzliLCJBTiI6Ik1haWwiLCJXVCI6Mn0=|1000&sdata=b6Xywf0tKhmsbsrZZu1eLI/DFTG+/LSjUYwAEKupLuk=&reserved=0>> (6/25, Sheetz) "Jeff Bezos plans to launch himself to the edge of space on July 20, but fellow billionaire Sir Richard Branson might still try to fly with Virgin Galactic first. Virgin Galactic leadership previously stated the company would conduct three more spaceflights to complete development testing of spacecraft VSS Unity. The company is working to begin flying paying passengers in early 2022, having completed a successful mission last month with just two pilots."

#### ISS Spacewalk

KHOU-TV Houston

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#### Moon to Mars

#### The Chinese-Russian Lunar Axis Adopts A Plan From The Late Paul Spudis

The Hill

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#### Nelson's First NASA Challenge: The Space Race With China

Orlando (FL) Sentinel

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96dd17b|0|0|637604747000740871|Unknown|TWFpbGZsb3d8eyJWljoimC4wLjAwMDAiLCJQljoiv2luMzliLCJBTil6lk1haWwiLCJXVCi6Mn0=|1000&sdata=4P9A9/d/fEsyTuy1TuTox4K3WzfNA7ojWnW0MWhc+cs=&reserved=0> (6/27, Weiner, Paras) “While NASA focuses on Venus, China’s space program, the China National Space Administration (CNSA), is aimed at landing people on the moon, something NASA hasn’t done since Apollo 17 in 1972. It’s astounding that 52 years since the U.S. landed, we have done nothing with human beings for decades but send commuter shuttles to a space station 200 miles away.”

#### Mars May Have More Water Than Scientists Thought

SlashGear

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#### NASA’s Perseverance Rover Shot 62 Images For Its Iconic Selfie With Ingenuity

Engadget

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#### ‘Like A Flute’: NASA Shares Sounds Of Mars Rover Snapping Epic Selfie

CNET News

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#### Mars Helicopter Takes It To The Limit With More Groundbreaking Flights

CNN

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28a&t=c&data=04|01|randy.c.cruz@nasa.gov|711e910bc481435fe1db08d93a23a25a|7005d45845be48ae8140d43da96dd17b|0|0|637604747000760788|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQljojV2luMzliLCJBTiI6Ikh1haWwiLCJXVCi6Mn0=|1000&sdata=jRaEkZek+NswPkKXN7lqR8BSLL+kEIIQa7QzuucPv7c=&reserved=0> (6/25, Strickland) “Where are you now, Mars Ingenuity helicopter? While it seems like the little chopper has been quiet, it turns out that Ingenuity has aced more of its flights – and even got a software update to fix an annoying issue that impacted some of its previous outings. The 4-pound helicopter has successfully flown eight times on Mars as of June 21, according to an update from Teddy Tzanetos, the helicopter operations lead at NASA’s Jet Propulsion Laboratory in Pasadena, California.”

## China Wants To Build ‘Sky Ladder’ To Mars To Beam Up Humans And Cargo

The Hill

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021062802nasa&r=email-13fc&l=02a-c1f&t=c&data=04|01|randy.c.cruz@nasa.gov|711e910bc481435fe1db08d93a23a25a|7005d45845be48ae8140d43da96dd17b|0|0|637604747000770742|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQljojV2luMzliLCJBTiI6Ikh1haWwiLCJXVCi6Mn0=|1000&sdata=hg5P9S1aSg3WOZq/FWji7ZE9PM0+6fTOnDCDIHoKbVs=&reserved=0>> (6/25, Romaine) “China wants to build a ‘Sky Ladder’ to Mars as part of the country’s plans for future Mars expeditions, according to China’s state-owned media the Global Times. The country’s top rocket manufacturer, Wang Xiaojun, announced this week that China is aiming to put people on Mars by 2033, and a part of its plan includes what it is calling the ‘Sky Ladder.’”

## NASA Outline A Larger Helicopter For Future Mars Missions

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## NASA’s InSight Mars Lander Might Die By April If It Doesn’t Get A Significant Energy Boost

Insider

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## NASA Scientists Find More Subsurface Lakes On Mars

## Gizmodo

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## NASA Tells Lawmakers That It Wants To See Moon Landings Occur Annually For 12 Straight Years

### Insider

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## Solar System and Beyond

## NASA Completes Tests To Identify Problem With Hubble Space Telescope Computer

### Fox News

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## There's A Problem With Hubble, And NASA Hasn't Been Able To Fix It Yet

### Universe Today

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reaching the end of its lifespan. In recent weeks, NASA identified a problem with the telescope's payload computer which suddenly stopped working."

## Even The Hubble Space Telescope's Backup Computer Is Glitching Now – Raising New Questions About What's Gone Wrong

Insider

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## NASA Is Pulling Out All The Stops To Fix The Hubble Space Telescope

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## Weird Neptune-like Exoplanet May Have Water Clouds

SPACE

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## The 7 Weirdest Things About Venus, Hell Planet

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62802nasa&r=email-13fc&l=034-

ba7&t=c&data=04|01|randy.c.cruz@nasa.gov|711e910bc481435fe1db08d93a23a25a|7005d45845be48ae8140d43da96dd17b|0|0|637604747000810566|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikl1haWwiLCJXVCi6Mn0=|1000&sdata=fEZbAahS0H6mXIX4G8RI6nYQQCspnyr1uY4XkO6jkWc=&reserved=0> (6/25, Schultz) "It's been nearly 30 years since a NASA spacecraft went to Venus, a yellowish planet 67 million miles from the Sun and 141 million miles from us. Venus is often thought of as a sibling planet to Earth, both being rocky worlds close enough to the Sun to bask in its heat. And yet, at some point in their histories, the two worlds diverged in an extreme way."

#### Scientists Find 29 Planets Where Aliens Could Be Watching Us

The Hill

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a6b&t=c&data=04|01|randy.c.cruz@nasa.gov|711e910bc481435fe1db08d93a23a25a|7005d45845be48ae8140d43da96dd17b|0|0|637604747000810566|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikl1haWwiLCJXVCi6Mn0=|1000&sdata=6i9IxO/1tlygixjDExX2PDenu0LzybK9FZVPGoMDu4=&reserved=0> (6/25, Spencer) "Scientists have identified 1,715 star systems where aliens could have discovered Earth by observing our planet's transit — and within that, 29 planets could be habitable and are uniquely positioned to watch us and pick up on our broadcast transmissions, The Guardian reports. ... Kaltenecker and Faherty, an astrophysicist at the American Museum of Natural History, used the Gaia catalogue from the European Space Agency to position stars and motions to figure out which stars are in the Earth's transit zone, according to The Guardian."

#### Volunteers And Amateurs Named Credited In NASA's Latest Discoveries

NPR

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d61&t=c&data=04|01|randy.c.cruz@nasa.gov|711e910bc481435fe1db08d93a23a25a|7005d45845be48ae8140d43da96dd17b|0|0|637604747000810566|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikl1haWwiLCJXVCi6Mn0=|1000&sdata=+Sdvqlrr4qSjm9jpfZdUinS5f8Oyb18foi1TSh2xRfw=&reserved=0> (6/26) "NASA is crediting volunteers and amateurs with advancing our knowledge of the universe through online data investigations, helping the agency identify two new planets far beyond our solar system. This month, NASA announced the discovery of two new planets far beyond our solar system, exotic worlds orbiting a star that's similar to our own sun but bigger and brighter and about 352 light years away. The find is published online in the Royal Astronomical Society, where the names of volunteers and amateurs are credited as co-authors. Cesar Rubio is a machinist in Pomona, Calif."

Space Tech

#### James Webb Space Telescope Will Study Quasars To Learn About The Early Universe

SlashGear

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1cd&t=c&data=04|01|randy.c.cruz@nasa.gov|711e910bc481435fe1db08d93a23a25a|7005d45845be48ae8140d43da96dd17b|0|0|637604747000820522|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikl1haWwiLCJXVCi6Mn0=|1000&sdata=txKGcRNCVNRN357YP5W7gfn35Z7frBAA+VyLbH+WNtc=&reserved=0> (6/25, Then) "NASA is looking forward to the launch of the James Webb Space Telescope later this year. The telescope will observe all manner of space phenomena but will particularly focus on studying quasars. A quasar is a very bright and distant, active supermassive black hole that is millions to billions of times the sun's mass. Quasars are typically located at the centers of galaxies and feed on material from an accretion disk surrounding it, and unleashes torrents of

radiation.”

Watch NASA Launch A Small Rocket With Dozens Of Student Experiments Today!

SPACE

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Watch NASA Rocket Launch Today Live From Wallops Island

Newsweek

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Various

NASA Team To Study New Roles For The Agency In Addressing Orbital Debris

Space News

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NASA Will Dismantle Two Test Sites At Toxic Santa Susana Field Lab Area

Los Angeles Daily News

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96dd17b|0|0|637604747000840438|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQljojV2luMzliLCJBTiI6lk1haWwiLCJXVCi6Mn0=|1000&sdata=Say4y7A/OeZglu1xxVJN4i52WCbopd9koVejvNJufwM=&reserved=0> (6/25, Grigoryants) “NASA said it will move forward with plans to demolish the Bravo and Coca vertical test stands at the Santa Susana Field Lab, contaminated when the area was used to test rocket engines and other activities for decades. Built in the 1950s, the Alpha, Bravo, Coca and Delta test stands were home to rocket testing for NASA’s Space Shuttle program and for U.S. Air Force missiles. Later the sites would play a major role in buoying the Apollo program, which launched the first American astronauts to the moon.”

#### U.S. Has No Explanation For Unidentified Objects And Stops Short Of Ruling Out Aliens

New York Times

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#### Pentagon UFO Report

KRIV-TV Houston

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#### Former NASA Administrator On The Possibility Of U.S.-China Cooperation In Space

CNBC

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Other

#### Elon Musk’s Starship Could Attempt Orbital Test Next Month

The Hill

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62802nasa&r=email-13fc&l=03f-

a04&t=c&data=04|01|randy.c.cruz@nasa.gov|711e910bc481435fe1db08d93a23a25a|7005d45845be48ae8140d43da96dd17b|0|0|637604747000850396|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikl1haWwiLCJXVCi6Mn0=|1000&sdata=L5eb+s4seTBp8Tp+IOdbVz6WfyrAdYIVKwe2WkQxO6U=&reserved=0> (6/25, Guzman) "Elon Musk's SpaceX is aiming to launch its Starship spacecraft into Earth's orbit for the first time next month, according to CNBC. The outlet reports SpaceX president Gwynne Shotwell said during the National Space Society's virtual International Space Development conference that the company is 'shooting for July.'"

#### SpaceX's New Rocket Factory Is Making Its Texas Neighbors Mad

NPR

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61e&t=c&data=04|01|randy.c.cruz@nasa.gov|711e910bc481435fe1db08d93a23a25a|7005d45845be48ae8140d43da96dd17b|0|0|637604747000860350|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikl1haWwiLCJXVCi6Mn0=|1000&sdata=+OEv9VLlmbVCwZbd4+EBrAAQcdCgfHgd+vmknF9fh8=&reserved=0> (6/26)

"What Elon Musk has built on the remote mudflats at the southern tip of Texas is astonishing: gantries, fuel storage tanks, an Airstream trailer village, and a silver rocket straight out of Buck Rogers—all fronted by neon letters that spell out 'Starbase.' But can SpaceX coexist with the original feathered inhabitants on the lower Gulf coast?

Environmentalists from Brownsville to Washington D.C. are protesting his ambitious vision to build, test and launch next-generation rockets in this fragile ecosystem."

#### SpaceX President Gwynne Shotwell Says She Is Hoping For A Starship Orbital Launch In July

Insider

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dcb&t=c&data=04|01|randy.c.cruz@nasa.gov|711e910bc481435fe1db08d93a23a25a|7005d45845be48ae8140d43da96dd17b|0|0|637604747000860350|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikl1haWwiLCJXVCi6Mn0=|1000&sdata=Pjf/602bGU/1BcR0YCbJvGidZQmoJjTAHZ7mR6qZVc=&reserved=0> (6/27,

Tayeb) "SpaceX's president, Gwynne Shotwell, said the company is "shooting for July" for its first Starship rocket orbit launch, SpaceNews reported. Speaking at the National Space Society's International Space Development Conference on Friday, Shotwell said: 'I'm hoping we make it, but we all know that this is difficult.'"

#### SpaceX Aiming For July For Starship Orbital Launch Despite Regulatory Reviews

Space News

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fd6&t=c&data=04|01|randy.c.cruz@nasa.gov|711e910bc481435fe1db08d93a23a25a|7005d45845be48ae8140d43da96dd17b|0|0|637604747000860350|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikl1haWwiLCJXVCi6Mn0=|1000&sdata=WYUBRq9qnoOpwn8fCMKDMP7WE4ljQxoXzkNQ/znAfkA=&reserved=0> (6/26,

Foust) "SpaceX President Gwynne Shotwell says the company is 'shooting for July' for the first orbital launch of the company's Starship vehicle despite lacking the regulatory approvals needed for such a launch. Speaking at the National Space Society's International Space Development Conference (ISDC) June 25, Shotwell said the company was pressing ahead with plans for an orbital flight involving the Super Heavy booster and Starship upper stage from the company's Boca Chica, Texas, test site."

#### SpaceX Plans To Launch Its First Orbital Starship Test Flight In July

Engadget

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#### SpaceX Aims To Launch First Orbital Starship Flight In July, Company President Says

CNBC

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#### SpaceX Delays Rare-trajectory Cape Canaveral Launch To Next Week

Florida Today

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#### Russia's Soyuz Launches Pion-NKS Naval Intelligence Satellite

NASA Space Flight

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including embedded Tweets are also subject to Twitter for Website's information and privacy policies

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NASA Morning Briefing is published five days a week by Bulletin Intelligence, which creates custom briefings for government and corporate leaders. We can be found on the Web at [BulletinIntelligence.com](http://BulletinIntelligence.com), or called at (703) 483-6100.

## **[EXTERNAL] NASA Morning Briefing for Monday, March 1, 2021**

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Monday, March 1, 2021 7:00 AM EST

Editor's Note

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#### Top Stories

NASA Names Headquarters Building After Engineer Mary W. Jackson

ABC World News Tonight

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NASA Officials Discuss Work Of Women On "Perseverance" Mars Mission

The CBS Weekend News

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#### Spacewalking Astronauts Prep Station For New Solar Wings

AP

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021030102nasa&r=email-ceb8&l=005-b6f&t=c&data=04|01|randy.c.cruz@nasa.gov|e113a752484741b2541708d8dca9c680|7005d45845be48ae8140d43da96dd17b|0|0|637501970314482485|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikl1haWwiLCJXVCi6Mn0=|1000&sdata=JXqDg4nY7RAm2tzv0cTTCTzhxDqaQZw+mWyewfAtvZM=&reserved=0>> (2/28, Dunn) "Spacewalking astronauts ventured out Sunday to install support frames for new, high-efficiency solar panels arriving at the International Space Station later this year. NASA's Kate Rubins and Victor Glover put the first set of mounting brackets and struts together, then bolted them into place next to the station's oldest and most degraded solar wings. But the work took longer than expected, and they barely got started on the second set before calling it quits."

#### Vice President Kamala Harris Calls NASA Astronaut On International Space Station

SPACE

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#### SpaceX Forced To Scrub Starlink Launch, Setting Stage For 24-hour Turnaround

Florida Today

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021030102nasa&r=email-ceb8&l=007-79d&t=c&data=04|01|randy.c.cruz@nasa.gov|e113a752484741b2541708d8dca9c680|7005d45845be48ae8140d43da96dd17b|0|0|637501970314492444|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikl1haWwiLCJXVCi6Mn0=|1000&sdata=hrIWnxvJXOBcCKBTIcBgOqVfPhJ3VCiCj7xBMPJ+OU=&reserved=0>> (2/28) "Unspecified technical issues forced SpaceX to scrub a Falcon 9 rocket launch Sunday evening, setting up teams for a 24-hour turnaround at Kennedy Space Center. With just over a minute left in the countdown, launch engineers reported an abort sequence had begun ahead of the 8:37 p.m. liftoff with 60 Starlink internet satellites. Starlink missions include instantaneous windows, meaning the rocket must launch on time or delay to another day."

Flight

## NASA's All-electric X-57 Maxwell Aircraft Is Ready For Some Power

SlashGear

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## NASA Set To Begin High-voltage Functional Ground Testing Of X-57 Maxwell

Aerospace Technology

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Earth

## Odd Stripes Spotted By NASA Satellite In Russia Baffle Scientist

SlashGear

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## Mysterious Stripes Spotted Over Russia In Satellite Images

SPACE

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Observatory website.”

#### NASA Grants Astra A Satellite Launch Contract Worth \$7.95 Million

SlashGear

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“When it comes to satellite launches, we typically think of SpaceX. It’s not the only company putting satellites into space for NASA and other agencies and companies. A satellite launch company called Astra based in Alameda has announced that it secured a contract to delivered six cube satellites into orbit for NASA.”

#### NASA Awards Launch Service Contract For TROPICS Mission To Study Storm Processes

Space Daily

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“NASA has selected Astra Space Inc. to provide a launch service for the agency’s Time-Resolved Observations of Precipitation Structure and Storm Intensity with a Constellation of SmallSats (TROPICS) mission. The TROPICS mission consists of a constellation of six CubeSats and will increase the scientific community’s understanding of storm processes.”

#### Antarctic Iceberg Larger Than New York City Breaks Off Ice Shelf

ABC News

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“An iceberg larger than New York City has broken off an ice shelf in Antarctica, scientists say. ... The BAS monitors the ice shelf daily using an automated network of high-precision GPS instruments surrounding the station, which measure how the ice shelf is deforming and moving. Satellite images from the European Space Agency, NASA and German satellite TerraSAR-X are also used, Francis said.”

#### Iceberg Size Of Los Angeles Breaks Off From Antarctica

UPI

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Hughes) “An iceberg the size of Los Angeles broke off the Brunt Ice Shelf in Antarctica on Friday, but chances of it moving a significant distance or running aground are still unknown, according to the British Antarctic Survey. ... The team also used satellite images from the European Space Agency and NASA along with the German satellite

TerraSAR-X.”

## Giant Crack Frees A Massive Iceberg In Antarctica

SPACE

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“A giant iceberg, more than 20 times the size of Manhattan, just split off from Antarctica’s Brunt Ice Shelf. ... The researchers also use satellite images from the European Space Agency, NASA and the German satellite TerraSAR-X to monitor the ice.”

## Massive Iceberg-- Larger Than New York City-- Breaks Off In Antarctica

Fox News

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“A massive iceberg, larger than New York City, has broken off from an ice shelf in Antarctica, according to researchers on Friday. ... The BAS monitors the ice shelf daily using an automated network of high-precision GPS instruments surrounding Halley Research Station, which measures how the ice shelf is deforming and moving, Francis said. The teams also use satellite images from ESA, NASA, and the German satellite TerraSAR-X.”

Humans in Space

## Spacewalking Astronauts Prep Station For New Solar Wings

AP

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“Spacewalking astronauts ventured out Sunday to install support frames for new, high-efficiency solar panels arriving at the International Space Station later this year. NASA’s Kate Rubins and Victor Glover put the first set of mounting brackets and struts together, then bolted them into place next to the station’s oldest and most degraded solar wings. But the work took longer than expected, and they barely got started on the second set before calling it quits.”

## Astronauts Kate Rubins And Victor Glover Conducted A Sunday Spacewalk

CNN

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(2/28, Strickland) "It was a nice day for a spacewalk. Astronauts Kate Rubins and Victor Glover Jr. began their spacewalk outside of the International Space Station at 6:12 a.m. ET and ended at 1:16 p.m. on Sunday."

#### Two NASA Astronauts Perform 7-hour Spacewalk

UPI

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021030102nasa&r=email-ceb8&l=014-592&t=c&data=04|01|randy.c.cruz@nasa.gov|e113a752484741b2541708d8dca9c680|7005d45845be48ae8140d43da96dd17b|0|0|637501970314532269|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQljojV2luMzliLCJBTiI6Ik1haWwiLCJXVCi6Mn0=|1000&sdata=2teftUiQTIOi46vnQBe9dgi9P9YVXHtexL4LF77GtjQ=&reserved=0>> (2/27, Brinkmann, Cone) "Astronauts Kate Rubins and Victor Glover Jr. participated in a 7-hour space walk outside the International Space Station on Sunday. About 250 miles above the Earth, the spacewalk began at 6:12 a.m. ET and ended at 1:16 p.m. They took the first steps toward a major addition to the International Space Station's solar panels. NASA plans to deliver six panels in a SpaceX cargo capsule starting in June."

#### NASA Spacewalk Kicks Off Space Station Solar Power Upgrade

Aviation Week

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021030102nasa&r=email-ceb8&l=015-a60&t=c&data=04|01|randy.c.cruz@nasa.gov|e113a752484741b2541708d8dca9c680|7005d45845be48ae8140d43da96dd17b|0|0|637501970314532269|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQljojV2luMzliLCJBTiI6Ik1haWwiLCJXVCi6Mn0=|1000&sdata=eiLU79vCvhimGDuGP06r3fvcQTgvc0/YIEtQjBUBuZc=&reserved=0>> (2/28) "NASA astronauts Kate Rubins and Victor Glover on Feb. 28 kicked off a year-plus effort to upgrade the power generating solar arrays that reach out from the International Space Station's (ISS) long support structure in eight pairs with a challenging, hand intensive spacewalk that exceeded..."

#### Watch Key Moments From NASA Spacewalk As Kate Rubins, Vic Glover Update Solar Panels

Newsweek

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021030102nasa&r=email-ceb8&l=016-592&t=c&data=04|01|randy.c.cruz@nasa.gov|e113a752484741b2541708d8dca9c680|7005d45845be48ae8140d43da96dd17b|0|0|637501970314542226|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQljojV2luMzliLCJBTiI6Ik1haWwiLCJXVCi6Mn0=|1000&sdata=rNnTmUHrEAbWoCiWnyu5iv8/jt6prKN8Czec6kCwSiM=&reserved=0>> (3/1) "NASA has shared several clips on Twitter from Sunday's spacewalk at the International Space Station (ISS), which show astronauts Kate Rubins and Victor Glover venturing outside to upgrade the station's solar arrays. The entire spacewalk, referred to as an Extra Vehicular Activity (EVA), is available to watch online, but NASA also split the walk into various key moments, such as the astronauts' trip from the airlock to the worksite, and when they secured frames and struts to the outside of the station using power tools."

#### Spacewalk Successfully Begins Process Of Increasing Space Station's Power Capacity

NASA Space Flight

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021030102nasa&r=email-ceb8&l=017-968&t=c&data=04|01|randy.c.cruz@nasa.gov|e113a752484741b2541708d8dca9c680|7005d45845be48ae8140d43da96dd17b|0|0|637501970314542226|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQljojV2luMzliLCJBTiI6Ik1haWwiLCJXVCi6Mn0=|1000&sdata=WbHwc/Y5rvPWs3URNRInAgcEq1wy0cYcHDEsQmeL7Ik=&reserved=0>> (2/28) "Two astronauts aboard the International Space Station (ISS) conducted a spacewalk to begin the process of

increasing the station's electrical power generation output. The spacewalk, US EVA-71, was conducted by NASA astronauts Kate Rubins and Victor Glover, who officially began the sojourn at 06:12 EST/11:12 UTC and completed it 7 hours 04 minutes later at 13:16 EST/18:16. UTC”

#### Vice President Kamala Harris Calls NASA Astronaut On International Space Station

SPACE

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“U.S. Vice President Kamala Harris made a cosmic call to the International Space Station last week to celebrate the milestone spaceflight of NASA astronaut Victor Glover in orbit. The call, which NASA and the White House released on YouTube Saturday (Feb. 27), came amid Black History Month, as Glover is midway through a six-month flight to the space station. He is the first Black astronaut to fly a long-duration mission to the station.”

#### Clear Creek High Students Proud To Make Items For Use On Space Station

Houston Chronicle

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“The HUNCH program at Clear Creek High School that allows students to produce items for the International Space Station may not be anything new, but that doesn’t make it any less cool. HUNCH, which stands for ‘High School Students United with NASA to Create Hardware,’ has for 18 years given students opportunities to create items like stowage lockers, tape dispensers and hand railings used on the ISS after traveling the 254-mile journey from Earth. Just this year, the Clear Creek High School program has delivered over 100 lockers to NASA.”

#### Moon to Mars

#### NASA Officials Discuss Work Of Women On “Perseverance” Mars Mission

The CBS Weekend News

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story 12, 2:43, Diaz) reported, “We end tonight with this incredible panorama of Mars captured by NASA’s newest robotic explorer the ‘Perseverance Rover.’ But what also caught our eye wasn’t on Mars, it was inside mission control. It was the voice heard ‘round the world. NASA’s Swati Mohan wasn’t just a commentator; she leads the space control team.”

#### Indiana-Made Alloy Helped Mars Rover Nail Red Planet Landing

AP

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021030102nasa&r=email-ceb8&l=01b->

8ee&t=c&data=04|01|randy.c.cruz@nasa.gov|e113a752484741b2541708d8dca9c680|7005d45845be48ae8140d43da96dd17b|0|0|637501970314671655|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQljoiv2luMzliLCJBTiI6lk1haWwiLCJXVCi6Mn0=|1000&sdata=Ci/aIAYLtZDSBbFS4BvIR1/cIT6f0oxuGT68S88hw+A=&reserved=0> (2/27) “For at least the next few centuries, a little piece of Kokomo will be laying quietly on the red surface of Mars, located about 128 million miles from the city. That’s because a special alloy made at Haynes International was used on the Sky Crane thrusters that lowered NASA’s Perseverance rover onto the planet last Thursday to search for ancient signs of life.”

#### Astrophysicist Discusses How Mars Rover Can Lead To Human Exploration

The Hill

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021030102nasa&r=email-ceb8&l=01c-ec6&t=c&data=04|01|randy.c.cruz@nasa.gov|e113a752484741b2541708d8dca9c680|7005d45845be48ae8140d43da96dd17b|0|0|637501970314671655|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQljoiv2luMzliLCJBTiI6lk1haWwiLCJXVCi6Mn0=|1000&sdata=qkHUt1IXE0+QjK6y6GAIGJcF46xX0LxWr7w75Fq//5A=&reserved=0>> (2/26) “National Science Foundation astrophysicist Joe Pesce told Hill. TV that the launching of the new rover Perseverance to explore Mars is a necessary step to eventual human exploration. ‘Mars has a very thin atmosphere – it requires quite extensive technology just to come in and land,’ he said. ‘The technology that we saw demonstrated on Perseverance will be used in the future.’”

#### NASA’s Perseverance Rover May Unlock Mysteries Behind Weather On Mars

SFGate (CA)

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021030102nasa&r=email-ceb8&l=01d-0eb&t=c&data=04|01|randy.c.cruz@nasa.gov|e113a752484741b2541708d8dca9c680|7005d45845be48ae8140d43da96dd17b|0|0|637501970314681611|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQljoiv2luMzliLCJBTiI6lk1haWwiLCJXVCi6Mn0=|1000&sdata=kNQIDuk0/uWuKannGJ6x0ga3gDd3IH2iL0IHGg8e1WU=&reserved=0>> (2/26, Cappucci) “NASA’s Perseverance rover made history Thursday when it touched down on the Red Planet, the culmination of decades of research and a half-year journey through space. Perseverance was launched July 30, the latest undertaking in an effort to learn whether life was ever possible on Mars. Space scientists far and wide are thrilled at what Perseverance may teach us. The rover is equipped with the latest technology to revolutionize our understanding of the Red Planet.”

#### NASA’s Perseverance Rover Sends Back First HD Mars Panorama

Fox News

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021030102nasa&r=email-ceb8&l=01e-366&t=c&data=04|01|randy.c.cruz@nasa.gov|e113a752484741b2541708d8dca9c680|7005d45845be48ae8140d43da96dd17b|0|0|637501970314681611|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQljoiv2luMzliLCJBTiI6lk1haWwiLCJXVCi6Mn0=|1000&sdata=itRBfOUiPFR/aBo/PPs/nm3k7+AICNcP3S1u71YvZc0=&reserved=0>> (2/26, Musto) “NASA’s Mars 2020 Perseverance rover has sent back its first high-definition panorama, giving a 360-degree look from the planet’s surface using its rotating Mastcam-Z instrument. The picture is the rover’s second panorama since Perseverance landed on the planet on Feb. 18. The rover’s Navigation Cameras – also on the mast – captured another panorama on Feb. 20.”

#### NASA’s Perseverance Has A Little ‘Family Portrait’ Easter Egg

Mashable

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#### Perseverance's Most Intriguing Images Captured From Mars So Far

Gizmodo

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021030102nasa&r=email-ceb8&l=020-672&t=c&data=04|01|randy.c.cruz@nasa.gov|e113a752484741b2541708d8dca9c680|7005d45845be48ae8140d43da96dd17b|0|0|637501970314691568|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikl1haWwiLCJXVCi6Mn0=|1000&sdata=GYCchf2VhdX5s6itxXtfl6YatOKRbvDqYuMXRqg4XC8=&reserved=0>> (2/26) "NASA's Perseverance rover has been on Mars for a full week, and the images are starting to pour in. Here are our favorites so far. The six-wheeled rover landed in Jezero crater on Feb.18, and the Mars 2020 team is busily preparing Perseverance for the science stage of the mission."

#### Perseverance's Eyes See A Different Mars

Ars Technica

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021030102nasa&r=email-ceb8&l=021-28c&t=c&data=04|01|randy.c.cruz@nasa.gov|e113a752484741b2541708d8dca9c680|7005d45845be48ae8140d43da96dd17b|0|0|637501970314691568|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikl1haWwiLCJXVCi6Mn0=|1000&sdata=m6sqf6JcBmfYi4PQ1tSqDuKik1S/4Fqf38gO64BLefY=&reserved=0>> (2/27) "The seven minutes of terror are over. The parachute deployed; the skycrane rockets fired. Robot truck goes ping! "

She Came To The U.S. With Only \$300 And Worked Housekeeping Jobs To Pay For School. Now She's A Flight Director For NASA's Mars Perseverance.

CBS News

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021030102nasa&r=email-ceb8&l=022-d06&t=c&data=04|01|randy.c.cruz@nasa.gov|e113a752484741b2541708d8dca9c680|7005d45845be48ae8140d43da96dd17b|0|0|637501970314701526|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikl1haWwiLCJXVCi6Mn0=|1000&sdata=nJiKWSXbgzoQdOUcc+CSwARoTVvrhY2qeGlyHkWx/N0=&reserved=0>> (2/28) "When NASA's Perseverance rover successfully landed on Mars last week, aerospace engineer Diana Trujillo, who is a flight director on the mission, said in an interview with CBS News that it took her some time to process that it had arrived on the red planet. 'I was very much on the mindset of "What's happening?"' she said. Then as pictures and videos from Perseverance started to beam back, it became real."

#### Editorial: In Awe Of Perseverance Landing

San Antonio Express-News

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021030102nasa&r=email-ceb8&l=023-90a&t=c&data=04|01|randy.c.cruz@nasa.gov|e113a752484741b2541708d8dca9c680|7005d45845be48ae8140d43da>

96dd17b|0|0|637501970314701526|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQljojV2luMzliLCJBTiI6Ikl1haWwiLCJXVCi6Mn0=|1000&sdata=fbziJgHrILNc7mUcb+Y4BIPPKWyqglTjZailRKUYLxM=&reserved=0> (2/28, Board) “Pity our science fiction authors. It must be getting harder for their imaginations to soar above reality, to create worlds different from our own. Look around you.”

‘Dare Mighty Things’: The Man Behind The Secret Message In The Mars Rover’s Parachute

CNN

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Opinion: The Perseverance Rover Landing On Mars Is A Giant Leap Toward Human Colonization Of Space

San Diego Union-Tribune

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Opinion: After Years Working On Cameras For The Mars Rover, I Breathlessly Watched The Landing From San Diego

San Diego Union-Tribune

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Opinion: Like That Mars Landing? Here’s How UC San Diego Scientists Are Involved In Exoplanet Exploration

San Diego Union-Tribune

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haWwiLCJXVCi6Mn0=|1000&sdata=wuNEQyfRxAC+A4pGAkz6iL2HWZSp0uiybcugapTowds=&reserved=0> (2/26)  
“There is something fascinating about science. One gets such wholesale returns of conjecture out of such a trifling investment of fact.’ ... The successful landing of the Perseverance rover on Mars was a stunning technological achievement for NASA, this country and the world.”

Opinion: How A Generation Of 1930s Rocketeers Led Us To Unlock The Secrets Of Mars

Washington Post

<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021030102nasa&r=email-ceb8&l=028-977&t=c&data=04|01|randy.c.cruz@nasa.gov|e113a752484741b2541708d8dca9c680|7005d45845be48ae8140d43da96dd17b|0|0|637501970314721436|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQljojV2luMzliLCJBTiI6k1haWwiLCJXVCi6Mn0=|1000&sdata=T+KYyg9+AsWbe7dzkcYo6CXLcmKvXBF6IV6et+Mv7mQ=&reserved=0> (2/26)  
“On the campus of the California Institute of Technology, circa 1936, a little group of scientists and hobbyists began to get serious about building rockets. This was crackpot science at the time, and back then, crackpots weren’t generally encouraged. Today we give them IPOs and make them billionaires.”

Opinion: An SDSU Grad Helped Make NASA’s Mars Landing Possible. Here’s What Her Training Was Like.

San Diego Union-Tribune

<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021030102nasa&r=email-ceb8&l=029-317&t=c&data=04|01|randy.c.cruz@nasa.gov|e113a752484741b2541708d8dca9c680|7005d45845be48ae8140d43da96dd17b|0|0|637501970314721436|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQljojV2luMzliLCJBTiI6k1haWwiLCJXVCi6Mn0=|1000&sdata=XS7ZD4wsEIQLajshjk/f3OTXyr+EifWC59VdOTxfMQ=&reserved=0> (2/26) “As the world watched the Perseverance rover land successfully on Mars on Feb. 18, one of our own was with the NASA team: San Diego State University alumna and Jet Propulsion Laboratory system engineer Anachristina Morino. On the night before the landing, Morino, a 2017 graduate of my department at SDSU, was on console making sure that the spacecraft was healthy and ready to handover to the Entry, Descent, and Landing (EDL) Team.”

The American Dream Is Alive On Mars

Wall Street Journal

<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021030102nasa&r=email-ceb8&l=02a-fe1&t=c&data=04|01|randy.c.cruz@nasa.gov|e113a752484741b2541708d8dca9c680|7005d45845be48ae8140d43da96dd17b|0|0|637501970314721436|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQljojV2luMzliLCJBTiI6k1haWwiLCJXVCi6Mn0=|1000&sdata=w9HB06+wELtLon0GdEIS6lQhBQpUe0ig3Hbjk3m13iw=&reserved=0> (2/26, Varadarajan) Tunku Varadarajan writes about interviewing Vandii Verma, the Chief Engineer of Robotic Operations for NASA’s Perseverance rover.

‘Harbor Seal Rock’ On Mars And Other New Sights Intrigue Perseverance Rover Scientists

SPACE

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“NASA’s Perseverance rover has landed in a rich scientific hunting ground, if its first good look around is any guide. The car-sized Perseverance landed on the floor of Jezero Crater on Feb. 18, kicking off an ambitious surface mission



that will hunt for signs of ancient Mars life and collect samples for future return to Earth, among other tasks.”

## Future Mars Trips Will Require Huge Shifts In Spacecraft Propulsion, With NASA And Startups Working On A Fix

Business Insider

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“The future of human space exploration, such as visiting our moon or even Mars, could be essential for upcoming generations. ... According to NASA, a round-trip Mars mission involving humans would take an estimated three years. That includes a six-month journey to the Martian planet, 18 months on the surface awaiting Earth to line up correctly for the shortest trip possible, and another 6-month journey back home.”

## Why Was The Latest NASA Rocket Test In Mississippi Delayed? Blame A Faulty Valve

New Orleans Times-Picayune

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“Citing the failure of a valve that feeds liquid oxygen into one of four rocket engines, NASA this week announced the postponement of its planned eight-minute test fire of the Space Launch System core stage, the foundation of the agency’s long-hoped for and frequently delayed mission to Mars. The test, scheduled to take place Thursday at Stennis Space Center’s B-2 test stand near Bay St. Louis, was the second so called ‘green run hot fire’ test of the core stage at the sprawling installation near the Louisiana-Mississippi state line.”

## Second Prevalve Issue Delays Completion Of SLS Core Stage Green Run Campaign

NASA Space Flight

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“A problem with another one of the eight prevalves in the Artemis 1 Core Stage for NASA’s Space Launch System (SLS) has postponed a second test-firing to wrap up the Green Run campaign. The SLS Program’s first flight article has been installed in the B-2 Test Stand at the Stennis Space Center in southern Mississippi since January 2020.”

## Solar System and Beyond

### This New Photo Of Venus Surprised NASA Scientists

Houston Chronicle

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haWwiLCJXVCI6Mn0=|1000&sdata=1QCXDSL YBP8gZHeGH51c/pe0weNVkbNuP66Q1tuM9p0=&reserved=0> (2/27)  
“There are many things that freak me out about space. ... The space organization shared a new photo that NASA’s Parker Solar Probe captured of Venus while the probe was using the planet’s gravity to whip itself toward its final destination: The Sun.”

#### Glowing Venus: Stunning Image Of Planet Released By NASA With Astonishing New Detail

Tech Times

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#### Parker Solar Probe Captured Images Of Venus On Its Way To The Sun

Universe Today

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#### Hunting For A Giant Black Hole, Astronomers Found A Nest Of Darkness

New York Times

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#### Galileo’s Sunspot Sketches Get AI-enhanced Makeover

Astronomy News

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447&t=c&data=04|01|randy.c.cruz@nasa.gov|e113a752484741b2541708d8dca9c680|7005d45845be48ae8140d43da96dd17b|0|0|637501970314751305|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQljojV2luMzliLCJBTiI6Ikl1haWwiLCJXVCi6Mn0=|1000&sdata=WajBkbUCSpqaYethGf5fi7Xx+2EiNsEF+k+7qZnRZHk=&reserved=0> (2/26) “In the summer of 1612, Galileo Galilei turned his telescope to our closest star, the Sun, projecting its image safely onto a screen. To his surprise, he found its surface was blotted by small dark spots that moved across its face. ... The algorithm would then spit out the kind of images that NASA’s Solar Dynamics Observatory (SDO) satellite would capture of such sketches in various bands of ultraviolet light, where active sunspot regions glow brilliantly.”

#### Comet-like Centaur Spotted By Hubble Near Jupiter’s Trojans

SlashGear

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“The NASA Hubble Space Telescope has spied a comet-like object known as a Centaur that has settled near a group of captured ancient asteroids called Trojans orbiting alongside Jupiter. NASA says this is the first time a comet-like object has been spotted near the ancient Trojan population. The Centaur name classifies icy bodies in the space between Jupiter and Neptune that become active for the first time when heated as they approach the sun.”

#### NASA Has Never Seen A Comet Here Before

BGR

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#### Astronomers Finally Find Neutron Star In Famous Supernova Remnant

Sci-News

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“Supernova 1987A (SN 1987A) was first observed on February 23, 1987 in a nearby dwarf galaxy, the Large Magellanic Cloud, some 164,000 light-years away. For decades, astronomers have searched for a neutron star that should have been left behind by the explosion. A new analysis of X-ray data from NASA’s Chandra and NuSTAR space observatories shows that a pulsar wind nebula created by such a neutron star may be present in the remnant of SN 1987A.”

#### Astronomers Think They’ve Found The Neutron Star Remnant Left Behind From Supernova 1987A

Universe Today

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Space Tech

No content.

Various

NASA Names Headquarters Building After Engineer Mary W. Jackson

ABC World News Tonight

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NASA Celebrates Renaming Headquarters After Engineer Mary W. Jackson

NBC News

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NASA Hosts Ceremony Renaming Headquarters Building For ‘Hidden Figure’ Mary Jackson

SPACE

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021030102nasa&r=email-ceb8&l=03a-ada&t=c&data=04|01|randy.c.cruz@nasa.gov|e113a752484741b2541708d8dca9c680|7005d45845be48ae8140d43da96dd17b|0|0|637501970314781173|Unknown|TWFpbGZsb3d8eyJWljoimc4wLjAwMDAiLCJQljoiv2luMzliLCJBTiI6IkhWwiLCJXVCi6Mn0=|1000&sdata=ak/ykKNjL5ziOVYnce9SInJtNsS1XEVIKdTeVCHgGhc=&reserved=0>> (2/26) “NASA commemorated Mary Jackson, one of the agency’s ‘Hidden Figures,’ today (Feb. 26) during a ceremony renaming the agency’s headquarters after her. During the ceremony, agency leaders acknowledged the historical barriers that African-Americans and Blacks have faced at NASA and elsewhere, as well as the systemic inequalities

that persist today for BIPOC (Black, Indigenous and people of color) communities.”

### NASA Honors ‘Hidden Figure’ Mary Jackson During Washington Headquarters Naming Ceremony

Fox News

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### NASA Names Headquarters Building After Agency’s First Black Female Engineer

The Hill

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### ‘A Hidden Figure No Longer’: NASA Officially Names DC Headquarters After Mary W. Jackson

ABC News

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### NASA’s DC Headquarters Is Being Renamed For ‘Hidden Figures’ Scientist Mary Jackson

CNN

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inspirations for the book 'Hidden Figures,' will officially adorn the space agency's Washington, DC, headquarters Friday. NASA announced its decision last year to name the building in Jackson's honor. Members of her family, including granddaughter Wanda Jackson, are expected to be at Friday's renaming ceremony along with Acting NASA Administrator Steve Jurczyk, the agency announced."

#### Announcing The 2021 Federal 100 Award Winners

Federal Computer Week

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#### The SolarWinds Body Count Now Includes NASA And The FAA

Wired

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021030102nasa&r=email-ceb8&l=040-eb2&t=c&data=04|01|randy.c.cruz@nasa.gov|e113a752484741b2541708d8dca9c680|7005d45845be48ae8140d43da96dd17b|0|0|637501970314801089|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikh1haWwiLCJXVCi6Mn0=|1000&sdata=HNVeZ+BldNfWwfx2zU7XzucvleNJsJpsGpANrA6hev4=&reserved=0>> (2/27, Hay Newman) "Some blasts from the past surfaced this week, including revelations that a Russia-linked hacking group has repeatedly targeted the US electrical grid, along with oil and gas utilities and other industrial firms. ... In addition to infiltrating the unclassified networks of seven other US government agencies, the suspected Russian hackers who compromised the IT services firm SolarWinds as a jumping off point also penetrated NASA and the Federal Aviation Administration."

#### NASA Astronaut Supports The Rescue Mission Of Cold-stunned Sea Turtles

Florida Today

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021030102nasa&r=email-ceb8&l=041-aeb&t=c&data=04|01|randy.c.cruz@nasa.gov|e113a752484741b2541708d8dca9c680|7005d45845be48ae8140d43da96dd17b|0|0|637501970314801089|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikh1haWwiLCJXVCi6Mn0=|1000&sdata=yCGSOXzTpt1NUYOC5w/tU8ykCmugLOQ5zF+InfBxP/8=&reserved=0>> (2/26) "38 sea turtles, suffering from cold stunning in New England, were rehabilitated and flown to Kennedy Space Center on Friday. ... When Stott learned of the sea turtles plight she coordinated with NASA to bring them to Kennedy Space Center so they could return to the Atlantic in the protected waters off Canaveral National Seashore."

Other

#### SpaceX Forced To Scrub Starlink Launch, Setting Stage For 24-hour Turnaround

Florida Today

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haWwiLCJXVCi6Mn0=|1000&sdata=Ob5N+EKcMUtaiaG6C78vGlpECmOlfWDyrmQc4Qvu220=&reserved=0> (2/28)  
“Unspecified technical issues forced SpaceX to scrub a Falcon 9 rocket launch Sunday evening, setting up teams for a 24-hour turnaround at Kennedy Space Center. With just over a minute left in the countdown, launch engineers reported an abort sequence had begun ahead of the 8:37 p.m. liftoff with 60 Starlink internet satellites. Starlink missions include instantaneous windows, meaning the rocket must launch on time or delay to another day.”

SpaceX Starlink Launch Aborted, Next Window Opens Monday:

CNET News

<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021030102nasa&r=email-ceb8&l=043-101&t=c&data=04|01|randy.c.cruz@nasa.gov|e113a752484741b2541708d8dca9c680|7005d45845be48ae8140d43da96dd17b|0|0|637501970314811044|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikl1haWwiLCJXVCi6Mn0=|1000&sdata=YvZMFCyoQOVy7Oyx+8DcK0spPFI7XKJrD69ta4tT+IE=&reserved=0> (2/28, Mack) “Sunday night’s Starlink launch has been aborted. A backup launch window opens tomorrow, Monday March 1 at 5:15 p.m. PT.”

SpaceX Scrubs Launch Of Long-delayed Starlink Mission

NASA Space Flight

<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021030102nasa&r=email-ceb8&l=044-33d&t=c&data=04|01|randy.c.cruz@nasa.gov|e113a752484741b2541708d8dca9c680|7005d45845be48ae8140d43da96dd17b|0|0|637501970314811044|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikl1haWwiLCJXVCi6Mn0=|1000&sdata=4PHjNNhvpwQXvTvUlfjdgvhAmkEL1DmICGEHCqEcsM=&reserved=0> (2/28)  
“SpaceX was targeting Sunday, February 28 for the launch of the Starlink v1.0 L17 mission. Another batch of Starlink satellites was to launch from historic LC-39A at the Kennedy Space Center aboard a flight proven Falcon 9 booster; however, a scrub was called at T-1 minutes 24 seconds.”

SpaceX Scrubs 20th Starlink Communications Satellite Launch

UPI

<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021030102nasa&r=email-ceb8&l=045-2ba&t=c&data=04|01|randy.c.cruz@nasa.gov|e113a752484741b2541708d8dca9c680|7005d45845be48ae8140d43da96dd17b|0|0|637501970314820999|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikl1haWwiLCJXVCi6Mn0=|1000&sdata=HcrJiVkvVWA6HHbJSCMPY+thpMt49xCuqKEGt6vAuBmo=&reserved=0> (2/28, Staff) “SpaceX failed to launch a cluster of Starlink communications satellites Sunday night when the countdown halted 1 minute, 24 seconds before the planned liftoff from Kennedy Space Center in Florida. No immediate explanation was given for the scrubbed launch. Elon Musk’s rocket company said its next opportunity to get the Falcon 9 rocket off the ground and send 60 satellites into orbit could come as early as Monday, with a launch window that begins at 8:15 p.m. EST.”

SpaceX Aborts Launch Of Falcon 9 Rocket Carrying Starlink Satellites

SPACE

<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021030102nasa&r=email-ceb8&l=046-04c&t=c&data=04|01|randy.c.cruz@nasa.gov|e113a752484741b2541708d8dca9c680|7005d45845be48ae8140d43da96dd17b|0|0|637501970314820999|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikl1haWwiLCJXVCi6Mn0=|1000&sdata=X6nLIIRUupHNIe2WIMhLE7rGMfNg7BZlWsjxeSGPVSo=&reserved=0> (2/28)

“A veteran SpaceX rocket suffered a launch abort just minutes before liftoff Sunday night (Feb. 28) while attempting to launch a new fleet of the company’s Starlink internet satellites. The Falcon 9 rocket was less than 90 seconds away from launching 60 Starlink satellites into orbit from Pad 39A of NASA’s Kennedy Space Center in Cape Canaveral, Florida when it experienced the automatic abort, SpaceX said.”

#### New SpaceX Starship Prototype SN10 Rocket Could Fly As Soon As Monday

CNET News

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“Just a few weeks after its predecessor SN9 flew high and then crash-landed on Texas’ Gulf Coast, SN10 will try to improve on that performance, and it might happen as soon as Monday. SN10 and SN9 are the latest iterations of SpaceX and Elon Musk’s Starship prototypes that the company has been developing in full view at its facility in Boca Chica, Texas. Musk has promised that the next-generation rocket will be capable of revolutionary point-to-point travel around the globe, as well as to the moon, Mars and beyond.”

#### Virgin Galactic Delays Spaceflight Test To May

AP

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“Spaceflight company Virgin Galactic has postponed its next mission to space from New Mexico until at least May after a December test flight was aborted due to computer malfunction. An investigation by the company found that electromagnetic interference caused the spaceship’s onboard computer to reboot during the December flight, the Albuquerque Journal reported Thursday.”

#### As A Child, She Beat Bone Cancer. Now She’s Headed Into Space.

Reuters

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“Bone cancer survivor Hayley Arceneaux is thrilled to be going into space. As a crew member on SpaceX’s Inspiration4, the world’s first all-commercial astronaut mission to Earth’s orbit, Arceneaux hopes that as the first person to go into space with a prosthesis, she can inspire others.”

#### Private Companies Such As SpaceX Are Driving Costs Down For Everyone In The Space Race, Says Man Behind UFO ETF

CNBC

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021030102nasa&r=email-ceb8&l=04a-901&t=c&data=04|01|randy.c.cruz@nasa.gov|e113a752484741b2541708d8dca9c680|7005d45845be48ae8140d43da>>



96dd17b|0|0|637501970314840917|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQljojV2luMzliLCJBTiI6I6k1haWwiLCJXVCi6Mn0=|1000&sdata=/KT+MyWQj25fILGPKPLeJNfKiQDxX1h1bd6G6RIFHn0=&reserved=0> (2/27, Gurdus) "Private space companies are paving the industry's path to profits, says the man behind the Procure Space ETF (UFO). By taking part in the rapidly developing 'space race,' billionaire-backed entities such as Elon Musk's SpaceX and Jeff Bezos's Blue Origin are lowering costs across the board, ProcureAM CEO Andrew Chanin told CNBC's 'ETF Edge' this week."

#### Jeff Bezos' Blue Origin Won't Launch Its 1st New Glenn Rocket Until Late 2022

SPACE

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"We'll have to wait another year to see Blue Origin's giant orbital rocket get off the ground. Blue Origin, which is run by Amazon.com founder Jeff Bezos, announced today (Feb. 25) that it's pushing the target date for the debut launch of its heavy-lift New Glenn rocket from late 2021 to the fourth quarter of 2022."

#### Industry Wants To Make Space More Accessible To Grow Australia's Talent Pool

ZDNet

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021030102nasa&r=email-ceb8&l=04c-a7d&t=c&data=04|01|randy.c.cruz@nasa.gov|e113a752484741b2541708d8dca9c680|7005d45845be48ae8140d43da96dd17b|0|0|637501970314840917|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQljojV2luMzliLCJBTiI6I6k1haWwiLCJXVCi6Mn0=|1000&sdata=kY/qbVBSyOgSY9jI1BznAlouLvftD8UNCfW/th4f+7o=&reserved=0>> (3/1, Chanthadavong) "Both local and international space companies have stressed the importance of Australia building its own talent pool to ensure the country's space industry will succeed. 'I think space is seen as cool. It's something to be involved in but I think the problem is that people don't necessarily know how to get into it,' Airbus told the Standing Committee of Industry, Innovation, Science and Resources, as part of its inquiry into developing Australia's space industry."

#### New Rocket, Firefly's Alpha, May Be Ready To Launch By April

UPI

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#### Kentucky Firm Plans Orbital Mini Space Station In Two Years

UPI

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96dd17b|0|0|637501970314850870|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikl1haWwiLCJXVCi6Mn0=|1000&sdata=FgXdjrEGZS7QKiThVR4YMOHrKo0ryutnb6THLDcKRyM=&reserved=0> (3/1, Brinkmann) “A Kentucky space firm that conducts science experiments on the International Space Station has plans to launch its own miniature, automated orbital research platform in about two years. Lexington-based Space Tango already has small research containers, or CubeLabs, on the space station. Bustling business and growing need for such experiments in microgravity led the company to plan its own space station, founder and CEO Twyman Clements said.”

#### Rocket Lab Nears Deal to Merge With Vector SPAC

Wall Street Journal

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#### Report Broadens Conversation On Space Militarization And Space Force Satellite Defense

Federal Times

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021030102nasa&r=email-ceb8&l=050-9c2&t=c&data=04|01|randy.c.cruz@nasa.gov|e113a752484741b2541708d8dca9c680|7005d45845be48ae8140d43da96dd17b|0|0|637501970314860827|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikl1haWwiLCJXVCi6Mn0=|1000&sdata=3RXz0pSj/BPueqFIKxGIlxfrvd7sDx3zfPd4nlzzmSl=&reserved=0>> (2/26, Strout) “Now more than ever, American war fighters depend on space-based capabilities for their missions. In response, adversaries have developed counter space weapons meant to degrade or deny those capabilities.”

#### ESA Is Working On A Mission To Explore Caves On The Moon

Universe Today

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021030102nasa&r=email-ceb8&l=051-581&t=c&data=04|01|randy.c.cruz@nasa.gov|e113a752484741b2541708d8dca9c680|7005d45845be48ae8140d43da96dd17b|0|0|637501970314860827|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikl1haWwiLCJXVCi6Mn0=|1000&sdata=lkhfZFDLwNUzMntEUlp+odf2ozpJrrPEkHjpSAhpUDM=&reserved=0>> (2/28) “Infrastructure is going to be one of the biggest components of any permanent human settlement on the moon. NASA Artemis missions are focused directly on building up the facilities and processes necessary to support a moon base. ESA is also contributing both material and knowledge.”

#### Russia Launches Satellite To Monitor Climate In Arctic

CNN

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warmed more than twice as fast as the global average over the last three decades and Moscow is seeking to develop the energy-rich region, investing in the Northern Sea Route for shipping across its long northern flank as ice melts.”

#### Russia Launches Arctic Weather Satellite

Spaceflight Now

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#### Russia Launches Satellite To Monitor Climate In Arctic

Reuters

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021030102nasa&r=email-ceb8&l=054-ecf&t=c&data=04|01|randy.c.cruz@nasa.gov|e113a752484741b2541708d8dca9c680|7005d45845be48ae8140d43da96dd17b|0|0|637501970314870783|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikh1aWwiLCJXVCi6Mn0=|1000&sdata=VtJK3B75FXxPuoOey8RJXvcKiFThBuRt+uUZ/hUxX8A=&reserved=0>> (2/28, Staff) “Russia launched its space satellite Arktika-M on Sunday on a mission to monitor the climate and environment in the Arctic amid a push by the Kremlin to expand the country’s activities in the region. The Arctic has warmed more than twice as fast as the global average over the last three decades and Moscow is seeking to develop the energy-rich region, investing in the Northern Sea Route for shipping across its long northern flank as ice melts.”

#### Russia Launches Its First Arctic Monitoring Satellite

Space Daily

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#### Indian Rocket Launches Brazilian Satellite To Track Amazon Deforestation

Spaceflight Now

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mission monitoring deforestation in the Amazon rainforest, then released 18 smaller spacecraft at a lower altitude, marking a successful start to India's 2021 launch schedule that could see as many as seven orbital-class rocket missions. The 144-foot-tall (44.4-meter) launch vehicle lifted off from the First Launch Pad at the Satish Dhawan Space Center at 11:54 p.m. EST Saturday (0454 GMT; 10:24 a.m. local time Sunday) and headed southeast from the spaceport on India's east coast."

#### Long March 6A Maiden Flight Due This Year, Report Says

Space Daily

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f63&t=c&data=04|01|randy.c.cruz@nasa.gov|e113a752484741b2541708d8dca9c680|7005d45845be48ae8140d43da96dd17b|0|0|637501970314880739|Unknown|TWFpbGZsb3d8eyJWljoimc4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikl1haWwiLCJXVCi6Mn0=|1000&sdata=nJHIZ519Xguru72QSqzncmZeWXmh3tjIV6Bhj1DGxI=&reserved=0> (2/26)

"China Aerospace Science and Technology Corp, the nation's leading space contractor, announced on Wednesday that it plans to conduct the maiden flight of the Long March 6A carrier rocket before the end of this year. The State-owned conglomerate said in an annual report on its space activities that the medium-lift Long March 6A will consist of a 50-meter, liquid-propelled core booster and four solid-fuel side boosters. It will be tasked with transporting satellites to multiple types of orbit such as sun-synchronous, low-Earth or intermediate circular orbit."

#### Solving The Climate And Energy Crises: Mine The Moon's Helium-3?

The Hill

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8dc&t=c&data=04|01|randy.c.cruz@nasa.gov|e113a752484741b2541708d8dca9c680|7005d45845be48ae8140d43da96dd17b|0|0|637501970314880739|Unknown|TWFpbGZsb3d8eyJWljoimc4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikl1haWwiLCJXVCi6Mn0=|1000&sdata=Phw2o3J3iO38UkPhx26EvnFcf4hz/zMVwoHB9L0H4ss=&reserved=0> (2/28)

"Recently, U.S. Nuclear Corp. and Solar System Resources Corporation signed a letter of intent that will either change the history of the world or be just a footnote in humanity's quest to develop clean, abundant sources of energy. Solar System Resources has agreed to provide 500 kilograms of helium-3 mined from the Moon to U.S. Nuclear Corp. in the 2028-2032 timeframe."

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160&t=c&data=04|01|randy.c.cruz@nasa.gov|e113a752484741b2541708d8dca9c680|7005d45845be48ae8140d43da96dd17b|0|0|637501970314890696|Unknown|TWFpbGZsb3d8eyJWljoimc4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikl1haWwiLCJXVCi6Mn0=|1000&sdata=9kb1zinUf/6RryYNxG4a680Jj+Bbxz0sR50MB1b2Kdl=&reserved=0>. The NASA

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## **[EXTERNAL] NASA Morning Briefing for Monday, October 21, 2019**

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### U.S. Astronauts Embark On The First All-Female Spacewalk

Reuters <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D004-2D996-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml\\_6\\_873ekEEvDPSM4qdpSmlDn\\_tMGVPof8Ubwl&s=3gH1pRT1jEfelh90ZYOUkZ4Q8ftGvvoLYGzV\\_fGJCGo&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D004-2D996-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml_6_873ekEEvDPSM4qdpSmlDn_tMGVPof8Ubwl&s=3gH1pRT1jEfelh90ZYOUkZ4Q8ftGvvoLYGzV_fGJCGo&e=>) (10/18, Roulette) "Two NASA astronauts made space history on Friday, completing the first spacewalk by an all-woman team when they stepped outside the International Space Station. Christina Koch and Jessica Meir accomplished the much-anticipated milestone for NASA during a relatively routine mission to swap faulty batteries on the station's exterior."

### Despite All-Female Spacewalk, NASA Has Long Way To Gender Equity

Houston Chronicle <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D005-2Dde6-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml\\_6\\_873ekEEvDPSM4qdpSmlDn\\_tMGVPof8Ubwl&s=9fgmKYnFVnQieIDHUcv6XL6vbw3JB7eqdJgHCT0r3JE&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D005-2Dde6-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml_6_873ekEEvDPSM4qdpSmlDn_tMGVPof8Ubwl&s=9fgmKYnFVnQieIDHUcv6XL6vbw3JB7eqdJgHCT0r3JE&e=>) (10/18, Stuckey) "For the first time in history, the only astronauts who emerged from the hatch on the International Space Station and floated out into space were women. American astronauts Christina Koch and Jessica Meir conducted the first all-female spacewalk Friday, spending more than seven hours replacing a battery unit that failed last week."

### Trump Speaks With NASA Astronauts On All-Female Spacewalk

The Hill <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D006-2Dd28-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D006-2Dd28-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD)>

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DqOlzrxkFIWBgm0bM&e=> (10/18, Chalfant) "President Trump on Friday spoke to two female astronauts  
participating in the first all-female spacewalk, cheering them as "very brave, brilliant women" and praising their work on  
a call at the White House. "Station, this is President Donald Trump, do you hear me?" Trump said as he phoned NASA  
astronauts Christina Koch and Jessica Meir from the Roosevelt Room."

#### Trump Has Live Chat With All-Female Spacewalk Team

Washington Times <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D007-2Ddbe-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml\\_6\\_873ekEEvDPSM4qdpSmlDn\\_tMGVPof8Ubwl&s=OhL5n8Y0FazRZHOcfu9xv-Osub\\_CAMjng\\_9Ej7U-9AQ&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D007-2Ddbe-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml_6_873ekEEvDPSM4qdpSmlDn_tMGVPof8Ubwl&s=OhL5n8Y0FazRZHOcfu9xv-Osub_CAMjng_9Ej7U-9AQ&e=>) (10/18, Howell) "President Trump on Friday conducted a live call with a pair of NASA  
astronauts conducting the first all-woman spacewalk, underscoring his push to reinvigorate the U.S. space program  
and send Americans to Mars. Astronauts Christina Koch and Jessica Meir credited astronauts who've come before  
them."

#### Political Headwinds Put Moon Plan At Risk, Former Astronaut Warns

Politico <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D008-2D40a-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml\\_6\\_873ekEEvDPSM4qdpSmlDn\\_tMGVPof8Ubwl&s=\\_nz2BL3wjRjpNsEn8vY11-OqTbKNdAl3aJ5Q-dvvuKA&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D008-2D40a-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml_6_873ekEEvDPSM4qdpSmlDn_tMGVPof8Ubwl&s=_nz2BL3wjRjpNsEn8vY11-OqTbKNdAl3aJ5Q-dvvuKA&e=>) (10/18, Feldscher) "The United States risks losing the space race if the political  
leadership in Washington keeps changing exploration goals every time a new Congress or administration takes over,  
warns a former NASA astronaut who has taken a leadership role in the space industry. "I worry about our ability to  
stick to a plan," Sandra Magnus, co-chair of the D.C. organizing committee for the International Astronautical  
Congress, which begins Monday in Washington."

#### Congress Shouldn't Rush To Tax And Regulate Space Exploration

The Hill <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D009-2D1d2-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml\\_6\\_873ekEEvDPSM4qdpSmlDn\\_tMGVPof8Ubwl&s=LqsTxKHqbnrDRRsKNqRB3mgA7XAjAkA4v2VfTtKdVYw&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D009-2D1d2-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml_6_873ekEEvDPSM4qdpSmlDn_tMGVPof8Ubwl&s=LqsTxKHqbnrDRRsKNqRB3mgA7XAjAkA4v2VfTtKdVYw&e=>) (10/19, Faith) "Next week, thousands of space professionals from around the globe will  
converge on Washington, D.C., for the 70th International Astronautical Conference. These professionals and students  
will present and discuss an array of solutions, concepts and ideas for all things space. But when it comes to  
formulating new governance structures, rules and regulations, we must remember the vast gap between aspiration  
and execution in space."

Flight

No content.

Earth

No content.

## Humans in Space

### NASA's All-Female Spacewalk Makes History: 'One Giant Leap For WOMANkind!'

Washington Post <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D00a-2D3f6-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml\\_6\\_873ekEEvDPSM4qdpSmlDn\\_tMGVPof8Ubwl&s=uvijW-tWIKtmFsVbP1HJdcRE7cFTWTHeiYZD3Z9OCWQ&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D00a-2D3f6-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml_6_873ekEEvDPSM4qdpSmlDn_tMGVPof8Ubwl&s=uvijW-tWIKtmFsVbP1HJdcRE7cFTWTHeiYZD3Z9OCWQ&e=>) (10/18, Davenport, Beachum) "NASA made history Friday morning when astronauts Christina Koch and Jessica Meir stepped outside the International Space Station to replace a faulty battery charger. The all-female spacewalk – the first of its kind "in human history," the agency said – began at 7:38 a.m. Eastern time as the two American astronauts set their suits to battery power mode."

### U.S. Astronauts Embark On The First All-Female Spacewalk

Reuters <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D00b-2D9c4-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml\\_6\\_873ekEEvDPSM4qdpSmlDn\\_tMGVPof8Ubwl&s=XsXQxrQ3ldlwsyu8rDSoTXxWobzCp-NN5LelaS0rjGM&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D00b-2D9c4-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml_6_873ekEEvDPSM4qdpSmlDn_tMGVPof8Ubwl&s=XsXQxrQ3ldlwsyu8rDSoTXxWobzCp-NN5LelaS0rjGM&e=>) (10/18, Roulette) "Two NASA astronauts made space history on Friday, completing the first spacewalk by an all-woman team when they stepped outside the International Space Station. Christina Koch and Jessica Meir accomplished the much-anticipated milestone for NASA during a relatively routine mission to swap faulty batteries on the station's exterior."

### First All-Female Spacewalking Team Makes History

Associated Press <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D00c-2Dc78-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml\\_6\\_873ekEEvDPSM4qdpSmlDn\\_tMGVPof8Ubwl&s=l9YE96oXN371iU4gHHpzchUf09Pvz4iMNUqmONYIP8M&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D00c-2Dc78-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml_6_873ekEEvDPSM4qdpSmlDn_tMGVPof8Ubwl&s=l9YE96oXN371iU4gHHpzchUf09Pvz4iMNUqmONYIP8M&e=>) (10/18, Dunn) "The world's first all-female spacewalking team made history high above Earth on Friday, replacing a broken part of the International Space Station's power grid. As NASA astronauts Christina Koch and Jessica Meir successfully completed the job with wrenches, screwdrivers and power-grip tools, it marked the first time in a half-century of spacewalking that men weren't part of the action."

### Despite All-Female Spacewalk, NASA Has Long Way To Gender Equity

Houston Chronicle <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D00d-2D05d-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml\\_6\\_873ekEEvDPSM4qdpSmlDn\\_tMGVPof8Ubwl&s=StgeN9HDVlB8jg-vSzpvFJS72jzKG7-U0lqf\\_4MbSVs&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D00d-2D05d-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml_6_873ekEEvDPSM4qdpSmlDn_tMGVPof8Ubwl&s=StgeN9HDVlB8jg-vSzpvFJS72jzKG7-U0lqf_4MbSVs&e=>) (10/18, Stuckey) "For the first time in history, the only astronauts who emerged from the hatch on the International Space Station and floated out into space were women. American astronauts Christina Koch and Jessica Meir conducted the first all-female spacewalk Friday, spending more than seven hours replacing a battery unit that failed last week."

## A Hitch At NASA Headquarters

Government Executive <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D00e-2Db5f-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml\\_6\\_873ekEEvDPSM4qdpSmlDn\\_tMGVPof8Ubwl&s=vCArA58tAMTKRKusOpVnNjrwFNTapgLHvGvpUjUjbe&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D00e-2Db5f-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml_6_873ekEEvDPSM4qdpSmlDn_tMGVPof8Ubwl&s=vCArA58tAMTKRKusOpVnNjrwFNTapgLHvGvpUjUjbe&e=>) (10/18, Koren) "Two astronauts spent their workday floating in outer space, their spacesuits tethered to the International Space Station so they didn't drift away. And for the first time in history, they were both women. Christina Koch and Jessica Meir began a five-and-a-half-hour spacewalk this morning to replace a battery component on the station's exterior. The device, which is used to charge the solar-powered batteries that power the station, failed last weekend."

## NASA Makes Historic All-Female Spacewalk

The Hill <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D00f-2D176-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml\\_6\\_873ekEEvDPSM4qdpSmlDn\\_tMGVPof8Ubwl&s=0PO6wrjH1m\\_ZW5KCbuHSz0jnWj\\_6DCX7GHG5Sv8SQcU&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D00f-2D176-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml_6_873ekEEvDPSM4qdpSmlDn_tMGVPof8Ubwl&s=0PO6wrjH1m_ZW5KCbuHSz0jnWj_6DCX7GHG5Sv8SQcU&e=>) (10/18, Johnson) "History was made in space Friday morning when NASA astronauts Christina Koch and Jessica Meir ventured outside the International Space Station to replace a faulty battery charger. According to The Washington Post, the all-female spacewalk, the first-ever in the history of space travel, kicked off at 7:38 a.m. EDT."

## Photos: NASA's All-Female Spacewalk Makes History

Washington Post <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D010-2Dacf-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml\\_6\\_873ekEEvDPSM4qdpSmlDn\\_tMGVPof8Ubwl&s=1s\\_e07ykOnYWuhB2O-w38NB6QExeWRGgDyXjhXzYBew&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D010-2Dacf-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml_6_873ekEEvDPSM4qdpSmlDn_tMGVPof8Ubwl&s=1s_e07ykOnYWuhB2O-w38NB6QExeWRGgDyXjhXzYBew&e=>) (10/18) "American astronauts Andrew Morgan, Christina Koch and Jessica Meir prepare for a spacewalk at the International Space Station. The world's first female spacewalking team made history high above Earth on Friday, floating out of the space station to fix a broken part of the power network. It marked the first time in a half-century of spacewalking that a woman floated out without a male crewmate."

## Watch Live: NASA Conducts Historic First All-Female Spacewalk

Washington Post <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D011-2De7f-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml\\_6\\_873ekEEvDPSM4qdpSmlDn\\_tMGVPof8Ubwl&s=sB4FUx8TRWrFv8mV5cGO4aYMD-7cOva7EUMXwlhFi1g&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D011-2De7f-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml_6_873ekEEvDPSM4qdpSmlDn_tMGVPof8Ubwl&s=sB4FUx8TRWrFv8mV5cGO4aYMD-7cOva7EUMXwlhFi1g&e=>) (10/18) "NASA astronauts Christina Koch and Jessica Meir walk outside the International Space Station to replace a damaged battery unit just months after NASA had to cancel an all-female spacewalk because of a spacesuit-sizing problem. President Trump called the astronauts as they were performing the spacewalk."

## First All-Female Spacewalk Makes History

Washington Post <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D012-2Dafe-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml\\_6\\_873ekEEvDPSM4qdpSmlDn\\_tMGVPof8Ubwl&s=NIZnwhu9tPJHsOi-WCW1al5NTsuw\\_LYKgUdpv3G6iYk&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D012-2Dafe-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml_6_873ekEEvDPSM4qdpSmlDn_tMGVPof8Ubwl&s=NIZnwhu9tPJHsOi-WCW1al5NTsuw_LYKgUdpv3G6iYk&e=>)> (10/19) "NASA astronauts Christina Koch and Jessica Meir made history on Oct. 18 with the first all-female spacewalk on the International Space Station."

## NASA Astronauts Make History With First All-Female Spacewalk

CNET News <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D013-2Da65-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml\\_6\\_873ekEEvDPSM4qdpSmlDn\\_tMGVPof8Ubwl&s=gOh5xCxO1reiPsEyZoHwHilJE OxImT\\_Oq-opEE4VnSw&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D013-2Da65-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml_6_873ekEEvDPSM4qdpSmlDn_tMGVPof8Ubwl&s=gOh5xCxO1reiPsEyZoHwHilJE OxImT_Oq-opEE4VnSw&e=>)> (10/18, Kooser) "Astronauts Christina Koch and Jessica Meir stepped outside the International Space Station on Friday for the first ever all-woman spacewalk. Their work officially started at 4:38 a.m. PT. and concluded around 11:50 a.m. PT. NASA streamed it live."

## Two Female Astronauts Made History In NASA's First All-Female Spacewalk

USA Today <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D014-2Db0d-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml\\_6\\_873ekEEvDPSM4qdpSmlDn\\_tMGVPof8Ubwl&s=y1EXYVpUkSheZvuKml22uZkrnFCvUlixAg6gZmSnhUo&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D014-2Db0d-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml_6_873ekEEvDPSM4qdpSmlDn_tMGVPof8Ubwl&s=y1EXYVpUkSheZvuKml22uZkrnFCvUlixAg6gZmSnhUo&e=>)> (10/18, Rodriguez, Jaramillo) "Men have floated out the hatch on all 420 spacewalks conducted over the past half-century. That changed Friday with spacewalk No. 421. NASA astronauts Christina Koch and Jessica Meir ventured outside the International Space Station before 8 a.m. ET Friday and repaired a broken battery charger, or BCDU, at 11:06 a.m. ET."

## Meir, Koch Complete First All-Female Spacewalk

UPI <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D015-2D5bf-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml\\_6\\_873ekEEvDPSM4qdpSmlDn\\_tMGVPof8Ubwl&s=u91soRdsMKhrj-zQJsenAUc1G7MPa2hqwFO3S4babLI&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D015-2D5bf-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml_6_873ekEEvDPSM4qdpSmlDn_tMGVPof8Ubwl&s=u91soRdsMKhrj-zQJsenAUc1G7MPa2hqwFO3S4babLI&e=>)> (10/18, Hays) "NASA astronauts Christina Koch and Jessica Meir are back inside the space station having completed a historic spacewalk – the first featuring two women. The mission was originally supposed to last rough 5.5 hours, but the duo ended up spending 7 hours and 17 minutes outside the space station. After completing their main mission, replacing a broken power controller, Koch and Meir extended their time in space in order to complete some "get ahead" work, NASA announced on Twitter."

## NASA Conducts First All-Female Spacewalk Outside International Space Station

Fox News <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D016-2Dcb7-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml\\_6\\_873ekEEvDPSM4qdpSmlDn\\_tMGVPof8Ubwl&s=u91soRdsMKhrj-zQJsenAUc1G7MPa2hqwFO3S4babLI&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D016-2Dcb7-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml_6_873ekEEvDPSM4qdpSmlDn_tMGVPof8Ubwl&s=u91soRdsMKhrj-zQJsenAUc1G7MPa2hqwFO3S4babLI&e=>)>

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mHkTTiYCEf5ROyus&m=bZe2ml\_6\_873ekEEvDPSM4qdpSmlDn\_tMGVPof8Ubwl&s=Nf1Dk46KLM\_8MdLOTDbwQY  
G9\_2244TnfhT1--cjcoLk&e=> (10/18) "NASA astronauts Christina Koch and Jessica Meir make history 250 miles  
above Earth; Phil Keating reports."

#### NASA Astronauts Make History With First All-Female Spacewalk

Fox News <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D017-2D3f3-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D017-2D3f3-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-)>  
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mHkTTiYCEf5ROyus&m=bZe2ml\_6\_873ekEEvDPSM4qdpSmlDn\_tMGVPof8Ubwl&s=gKb3SQYsQtIN8bCAz4ekU\_Zi  
EEFkThqzvgtlBdAP3M&e=> (10/18, Rogers) "NASA astronauts Christina Koch and Jessica Meir have made history  
with the first all-female spacewalk. The spacewalk, which started early Friday, is Meir's first and Koch's fourth. NASA  
tweeted the spacewalk started at 7:38 AM ET, as Koch and Meir "set their spacesuits to battery power.""

#### First All-Female Spacewalk: Two Stars Shining Bright

CNET News <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D018-2Da80-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D018-2Da80-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-)>  
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mHkTTiYCEf5ROyus&m=bZe2ml\_6\_873ekEEvDPSM4qdpSmlDn\_tMGVPof8Ubwl&s=nf1EkjbUkFiao\_wX2IH\_aqewye  
9TxM9vTWKs2q3m\_Rs&e=> (10/18, Mihalcik) "As astronauts Christina Koch and Jessica Meir made history on Friday  
during the first all-female spacewalk, people on social media got seriously emotional. The hashtag  
#AllFemaleSpacewalk trended on Twitter, and NASA's livestream of the spacewalk trended on YouTube. The pair  
spent more than seven hours outside the International Space Station working to replace a failed power unit, among  
other tasks."

#### NASA Astronauts Complete Repairs On Historic Spacewalk

Space News <faulty battery charger during the agency's first all-female spacewalk Oct. 18, an event that at times appeared to go  
better in orbit than on the ground. NASA astronauts Christina Koch and Jessica Meir spent seven hours and 17  
minutes outside the International Space Station during a spacewalk, carrying out their primary task of replacing a  
battery charge/discharge unit (BCDU) on one end of the station's truss.">

#### The Metaphorical Power Of NASA's First All-Women Spacewalk

Quartz <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D01a-2Deef-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D01a-2Deef-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-)>  
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mHkTTiYCEf5ROyus&m=bZe2ml\_6\_873ekEEvDPSM4qdpSmlDn\_tMGVPof8Ubwl&s=dU6mbEOpsIYecRsGev7oPTq  
9XHhijhZk64bxG-pbEhM&e=> (10/18, Todd) "NASA astronauts Christina Koch and Jessica Meir have made history  
with the world's first-ever all-female spacewalk. Koch and Meir stepped outside the International Space Station at  
7:38am today, and NASA has been live-streaming the spacewalk on YouTube."

#### All-Female Spacewalk

KFOR-TV Oklahoma City <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D01b-2D5e8-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml\\_6\\_873ekEEvDPSM4qdpSmlDn\\_tMGVPof8Ubwl&s=-vR9uBXps2NljgNat62nvZ\\_UJsZA6ejd9bdb43Yff8&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D01b-2D5e8-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml_6_873ekEEvDPSM4qdpSmlDn_tMGVPof8Ubwl&s=-vR9uBXps2NljgNat62nvZ_UJsZA6ejd9bdb43Yff8&e=>) (10/18) "Well a first in space exploration happening hundreds of miles above the earth today. Two American astronauts are making the first all-female spacewalk outside the International Space Station. This spacewalk was supposed to happen back in March."

#### All-Female Spacewalk

KCAL-TV Los Angeles <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D01c-2D488-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml\\_6\\_873ekEEvDPSM4qdpSmlDn\\_tMGVPof8Ubwl&s=6e8eTb84D-ECK81lqUsJIm-TNvOXoXUil\\_-fACIOjso&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D01c-2D488-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml_6_873ekEEvDPSM4qdpSmlDn_tMGVPof8Ubwl&s=6e8eTb84D-ECK81lqUsJIm-TNvOXoXUil_-fACIOjso&e=>) (10/18) "History made today with the first all-female spacewalk. That's right, the astronauts performed repairs outside of the International Space Station."

#### All-Female Spacewalk

WKCF-TV Orlando (FL) <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D01d-2D1c4-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml\\_6\\_873ekEEvDPSM4qdpSmlDn\\_tMGVPof8Ubwl&s=VodxH13AGqyL7oalTiUvp2cqH0Fa9Cn5HLYd98O-McY&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D01d-2D1c4-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml_6_873ekEEvDPSM4qdpSmlDn_tMGVPof8Ubwl&s=VodxH13AGqyL7oalTiUvp2cqH0Fa9Cn5HLYd98O-McY&e=>) (10/18) "History was made high above the earth today, two American astronauts conducted the first ever all-female spacewalk this morning. It was originally supposed to happen in March, but NASA did not have the right size space suit available on the International Space Station. But they did today."

#### All-Female Spacewalk

KTLA-TV Los Angeles <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D01e-2Db26-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml\\_6\\_873ekEEvDPSM4qdpSmlDn\\_tMGVPof8Ubwl&s=Kn5JITrgj0MQLNWtSdiZNDXurUrIXPf7kHoFeOEtOc&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D01e-2Db26-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml_6_873ekEEvDPSM4qdpSmlDn_tMGVPof8Ubwl&s=Kn5JITrgj0MQLNWtSdiZNDXurUrIXPf7kHoFeOEtOc&e=>) (10/18) "A historic first in space today as two astronauts step out of the International Space Station and make one giant leap for womankind. 'You know for us, this is really just us doing our job. It's something we've been training for six years.'"

#### All-Female Spacewalk

WJW-TV Cleveland <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D01f-2D6af-26t-](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D01f-2D6af-26t-)



3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-  
mHkTTiYCEf5ROyus&m=bZe2ml\_6\_873ekEEvDPSM4qdpSmlDn\_tMGVPof8Ubwl&s=YA7oXZXdNoJU27V4jldMfPAJ  
OfMhNLgA89itBJ84aBk&e=> (10/19) "Well a very historic day for NASA. Yesterday was the world's first all-female  
spacewalk."

#### All-Female Spacewalk

Spectrum News 13 (FL) <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D020-2D264-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml\\_6\\_873ekEEvDPSM4qdpSmlDn\\_tMGVPof8Ubwl&s=bc2q2jgQ3Lbfofx7A\\_E\\_fJDgjP2PQ5SarJ2hg0\\_-zc&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D020-2D264-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml_6_873ekEEvDPSM4qdpSmlDn_tMGVPof8Ubwl&s=bc2q2jgQ3Lbfofx7A_E_fJDgjP2PQ5SarJ2hg0_-zc&e=>) (10/19) "Destination space news now. It was an historic moment on Friday morning as the first ever all-female spacewalk got underway. Did you see this? NASA astronauts Christina Koch and Jessica Meir left the International Space Station, the ISS, to replace this battery unit that never came back on after new lithium-ion batteries were installed a week ago."

#### All-Female Spacewalk

WRC-TV Washington <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D021-2D31a-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml\\_6\\_873ekEEvDPSM4qdpSmlDn\\_tMGVPof8Ubwl&s=lq9w3MXPGjDwyCb0AloJft1WvP4OkYGi3YmpyM7x4&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D021-2D31a-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml_6_873ekEEvDPSM4qdpSmlDn_tMGVPof8Ubwl&s=lq9w3MXPGjDwyCb0AloJft1WvP4OkYGi3YmpyM7x4&e=>) (10/19) "I'm pretty sure your Friday was not as cool as this. American astronauts Christina Koch and Jessica Meir are back inside the International Space Station after a historic space walk."

#### NASA Astronauts Make History With First All-Female Spacewalk

NBC News <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D022-2D75b-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml\\_6\\_873ekEEvDPSM4qdpSmlDn\\_tMGVPof8Ubwl&s=0\\_ozkOoNs1HAuiShfW3PSFfN5JFjmwBJ6pjYpBfjsa0&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D022-2D75b-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml_6_873ekEEvDPSM4qdpSmlDn_tMGVPof8Ubwl&s=0_ozkOoNs1HAuiShfW3PSFfN5JFjmwBJ6pjYpBfjsa0&e=>) (10/18, Fieldstadt) "Two astronauts made history Friday morning as the first women to participate in an all-female spacewalk. Christina Koch and Jessica Meir ventured outside the International Space Station at about 7:50 a.m. to make an urgent repair to its power system. They concluded the spacewalk 7 hours and 17 minutes later, just before 3 p.m."

#### All-Female Spacewalk Cause For Cheers

Boston Herald <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D023-2D441-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml\\_6\\_873ekEEvDPSM4qdpSmlDn\\_tMGVPof8Ubwl&s=bAaXhPB7QK-FtnoH6OlfeV74ZdlwRTR9gySVDJAuNg&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D023-2D441-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml_6_873ekEEvDPSM4qdpSmlDn_tMGVPof8Ubwl&s=bAaXhPB7QK-FtnoH6OlfeV74ZdlwRTR9gySVDJAuNg&e=>) (10/18) "Make some room Nellie Bly, Amelia Earhart, Beryl Markham et al. The world's greatest female explorers have two new faces to celebrate today after Friday's historic first all-female spacewalk: NASA astronauts Jessica Meir — a Maine native — and Christina Koch spent hours replacing a broken

part of the International Space Station's power grid. They didn't shatter a glass ceiling – space has no ceiling – but they inspired women and girls across the world with their efforts.”

#### UCSD's Jessica Meir 'Out Of This World' During NASA's First All-Female Spacewalk

San Diego Union-Tribune <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D024-2D88c-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml\\_6\\_873ekEEvDPSM4qdpSmlDn\\_tMGVPof8Ubwl&s=OJfC8AhiBUzJrkG6fr-ATcvLBZ53vCEDwuFsGuNFre4&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D024-2D88c-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml_6_873ekEEvDPSM4qdpSmlDn_tMGVPof8Ubwl&s=OJfC8AhiBUzJrkG6fr-ATcvLBZ53vCEDwuFsGuNFre4&e=>) (10/18, Robbins) “With a tool bag in hand, Jessica Meir floated out of an airlock on the International Space Station on Friday and went to work in an exhilarating moment for NASA and her alma mater, UC San Diego. Meir joined fellow astronaut Christina Koch in performing the first all-female spacewalk, which played out 254 miles above Earth as they repaired a power control unit that recently broke.”

#### Two Women Completed A Seven-Hour Spacewalk On Friday

Ars Technica <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D025-2Dc3e-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml\\_6\\_873ekEEvDPSM4qdpSmlDn\\_tMGVPof8Ubwl&s=cDHuyyQ62pZD\\_hNtYyDfMCMX3CbGYPP7\\_e\\_xegQuvZE&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D025-2Dc3e-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml_6_873ekEEvDPSM4qdpSmlDn_tMGVPof8Ubwl&s=cDHuyyQ62pZD_hNtYyDfMCMX3CbGYPP7_e_xegQuvZE&e=>) (10/18) “Two American astronauts made history on Friday when they performed a spacewalk outside of the International Space Station—it was the first all-woman extravehicular activity (EVA). Astronauts Christina Koch and Jessica Meir spent 7 hours and 17 minutes outside the station.”

#### NASA Astronauts Make History With 1st All-Woman Spacewalk

SPACE <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D026-2D66e-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml\\_6\\_873ekEEvDPSM4qdpSmlDn\\_tMGVPof8Ubwl&s=QeIDWu-WYkdO\\_3Vo2BwLh84fhGrcOocD6BH3Q07boig&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D026-2D66e-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml_6_873ekEEvDPSM4qdpSmlDn_tMGVPof8Ubwl&s=QeIDWu-WYkdO_3Vo2BwLh84fhGrcOocD6BH3Q07boig&e=>) (10/18, Gohd) “One giant leap for womankind! Two NASA astronauts made space history today (Oct. 18) as they completed the first-ever spacewalk by an all-woman team. The historic extravehicular activity (EVA) began at 7:38 EDT (1138 GMT), which was ahead of schedule as the spacewalk was slated to begin at 7:50 EDT (1150 GMT).”

#### NASA Wonder Women Make History With All-Female Spacewalk

Boston Herald <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D027-2D7f0-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml\\_6\\_873ekEEvDPSM4qdpSmlDn\\_tMGVPof8Ubwl&s=2Uv3WKJwn4sy5GAOWS\\_W2FcZINDN3o9uaq1XgzekQhk&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D027-2D7f0-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml_6_873ekEEvDPSM4qdpSmlDn_tMGVPof8Ubwl&s=2Uv3WKJwn4sy5GAOWS_W2FcZINDN3o9uaq1XgzekQhk&e=>) (10/18, Dwinell) “It was one small step for two women, one giant leap for womankind. NASA astronauts Jessica Meir of Maine and Christina Koch of North Carolina made history Friday by making the first all-female spacewalk.”

#### Re-watch The First All-Female Spacewalk Via NASA

SlashGear <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D028-2D7f0-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml\\_6\\_873ekEEvDPSM4qdpSmlDn\\_tMGVPof8Ubwl&s=2Uv3WKJwn4sy5GAOWS\\_W2FcZINDN3o9uaq1XgzekQhk&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D028-2D7f0-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml_6_873ekEEvDPSM4qdpSmlDn_tMGVPof8Ubwl&s=2Uv3WKJwn4sy5GAOWS_W2FcZINDN3o9uaq1XgzekQhk&e=>)

3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D028-2Dcde-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml\_6\_873ekEEvDPSM4qdpSmlDn\_tMGVPof8Ubwl&s=dSoW2KB-XlkRkl6bY6Da\_fS\_iZ6py82S1xiJyg82u-U&e=> (10/18, Burns) "UPDATE: The spacewalk is effectively complete, but we can watch it again and again since NASA's recorded the whole thing, live in effect. Humanity's first all-female spacewalk started at 7:50 a.m. EDT (1150 GMT) on October 18, 2019. Astronauts Christina Koch and Jessica Meir worked outside the International Space Station to repair the station by replacing a power controller."

#### Trump Speaks With NASA Astronauts On All-Female Spacewalk

The Hill <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D029-2D16a-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml\\_6\\_873ekEEvDPSM4qdpSmlDn\\_tMGVPof8Ubwl&s=6zSfLhfYS-g-zYfXU6MRqbwrUed2FXcFYTB-OBQ8w1Q&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D029-2D16a-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml_6_873ekEEvDPSM4qdpSmlDn_tMGVPof8Ubwl&s=6zSfLhfYS-g-zYfXU6MRqbwrUed2FXcFYTB-OBQ8w1Q&e=>) (10/18, Chalfant) "President Trump on Friday spoke to two female astronauts participating in the first all-female spacewalk, cheering them as "very brave, brilliant women" and praising their work on a call at the White House. "Station, this is President Donald Trump, do you hear me?" Trump said as he phoned NASA astronauts Christina Koch and Jessica Meir from the Roosevelt Room."

#### Trump Has Live Chat With All-Female Spacewalk Team

Washington Times <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D02a-2D72a-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml\\_6\\_873ekEEvDPSM4qdpSmlDn\\_tMGVPof8Ubwl&s=bPXsgPBzwCKqsDpuqPY5OyKXlrvKgj4ums-8Ot3aXAU&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D02a-2D72a-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml_6_873ekEEvDPSM4qdpSmlDn_tMGVPof8Ubwl&s=bPXsgPBzwCKqsDpuqPY5OyKXlrvKgj4ums-8Ot3aXAU&e=>) (10/18, Howell) "President Trump on Friday conducted a live call with a pair of NASA astronauts conducting the first all-woman spacewalk, underscoring his push to reinvigorate the U.S. space program and send Americans to Mars. Astronauts Christina Koch and Jessica Meir credited astronauts who've come before them."

#### Trump Calls To Congratulate 'Brilliant' NASA Astronauts During Their Historic All-Female Spacewalk

Fox News <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D02b-2D49e-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml\\_6\\_873ekEEvDPSM4qdpSmlDn\\_tMGVPof8Ubwl&s=9F7bW84Pu4w6xkmmF23jXM4Hy1pU87X6toWZn254ev0&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D02b-2D49e-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml_6_873ekEEvDPSM4qdpSmlDn_tMGVPof8Ubwl&s=9F7bW84Pu4w6xkmmF23jXM4Hy1pU87X6toWZn254ev0&e=>) (10/18, Rogers) "President Donald Trump called NASA astronauts Christina Koch and Jessica Meir during their historic first all-female spacewalk Friday. The astronauts were just under five hours into their spacewalk to replace a battery charger on the International Space Station when they took the call from the White House."

#### Trump Calls NASA Astronauts Jessica Meir And Christina Koch To Congratulate Them On First All-Female Spacewalk

USA Today <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D02c-2D273-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml\\_6\\_873ekEEvDPSM4qdpSmlDn\\_tMGVPof8Ubwl&s=rdkdnzpwiaxClhGoS8DE-s6nn6Vs7j9mCqQv6YPv4uE&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D02c-2D273-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml_6_873ekEEvDPSM4qdpSmlDn_tMGVPof8Ubwl&s=rdkdnzpwiaxClhGoS8DE-s6nn6Vs7j9mCqQv6YPv4uE&e=>) (10/18, Subramanian, Fritze) ""You're right now on television all over the world so

don't get nervous," President Donald Trump told two female NASA astronauts for conducting the first-ever all-female spacewalk Friday in a mission to replace a failed power control unit. Christina Koch and Jessica Meir stepped outside the International Space Station just before 8 a.m. EST Friday and planned to spend more than five hours replacing the regulator, which controls how much energy flows from the station's massive solar panels to battery units."

#### Trump Just Got Fact-Checked From Space, Again

The Verge <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D02d-2De76-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml\\_6\\_873ekEEvDPSM4qdpSmlDn\\_tMGVPof8Ubwl&s=CvSOM3hMYHDZB8aKXyhN4\\_OUeJHXk2VZ34tbZR-AGA&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D02d-2De76-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml_6_873ekEEvDPSM4qdpSmlDn_tMGVPof8Ubwl&s=CvSOM3hMYHDZB8aKXyhN4_OUeJHXk2VZ34tbZR-AGA&e=>) (10/18, Gush) "Today, President Trump took a few moments out of his day to speak with NASA astronauts Christina Koch and Jessica Meir, who are currently conducting the first all-female spacewalk in history on the outside of the International Space Station. While speaking with the pair, Trump mistakenly suggested this was the first female spacewalk ever — a point that the astronauts corrected him on."

#### Classic: Trump Interrupts First All-Women Spacewalk To Get His Facts Wrong

Vice <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D02e-2D97e-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml\\_6\\_873ekEEvDPSM4qdpSmlDn\\_tMGVPof8Ubwl&s=sW3nuXBd1mHqFMo1EIND6t8WwVz9uddFibWTtBmbwg&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D02e-2D97e-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml_6_873ekEEvDPSM4qdpSmlDn_tMGVPof8Ubwl&s=sW3nuXBd1mHqFMo1EIND6t8WwVz9uddFibWTtBmbwg&e=>) (10/18, Ferreira) "As NASA astronauts Jessica Meir and Christina Koch were completing their history-making spacewalk (the first with an all-women crew) on Friday, President Donald Trump decided to butt in. Naturally, it was very confusing. Trump connected with Meir just before 12:30 PM ET on Friday, as she was working on the International Space Station's exterior with Koch. The two women were nearing their fifth hour outside the station."

#### Moon to Mars

##### Political Headwinds Put Moon Plan At Risk, Former Astronaut Warns

Politico <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D02f-2D515-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml\\_6\\_873ekEEvDPSM4qdpSmlDn\\_tMGVPof8Ubwl&s=o6tSnTR3bJlRoMYdMmYM4sK7s-ooSw7gHPYzd0nqQU&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D02f-2D515-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml_6_873ekEEvDPSM4qdpSmlDn_tMGVPof8Ubwl&s=o6tSnTR3bJlRoMYdMmYM4sK7s-ooSw7gHPYzd0nqQU&e=>) (10/18, Feldscher) "The United States risks losing the space race if the political leadership in Washington keeps changing exploration goals every time a new Congress or administration takes over, warns a former NASA astronaut who has taken a leadership role in the space industry. "I worry about our ability to stick to a plan," Sandra Magnus, co-chair of the D.C. organizing committee for the International Astronautical Congress, which begins Monday in Washington."

#### Japan Will Help NASA Build A Space Station Near The Moon

Engadget <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D030-2D2dd-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml\\_6\\_873ekEEvDPSM4qdpSmlDn\\_tMGVPof8Ubwl&s=BQfVKSgd5ons-f-CVIIB-](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D030-2D2dd-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml_6_873ekEEvDPSM4qdpSmlDn_tMGVPof8Ubwl&s=BQfVKSgd5ons-f-CVIIB-)

VgO5S3jvczhZK81Kpi9wMY&e=> (10/18, Moon) "According to The Japan Times, the Asian country will "offer technical cooperation for the construction" of the Lunar Gateway, which will serve as temporary home and office for astronauts in lunar orbit. In particular, Japan will provide life-support system devices, air-conditioning equipment and batteries, among other things. However, the publication says the committee withheld its decision on whether to help NASA with the construction of the gateway itself due to cost concerns. The Lunar Gateway will feature living quarters for astronauts, laboratories and docking ports for spacecraft going to and from the Moon."

#### Japan Joins NASA In Mission To Land Humans On The Moon In 2024

SlashGear <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D031-2D05d-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml\\_6\\_873ekEEvDPSM4qdpSmlDn\\_tMGVPof8Ubwl&s=UWzB9biZZZhV8bsqFXz-nWLA0WM5f7xbrfkgJrleF5M&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D031-2D05d-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml_6_873ekEEvDPSM4qdpSmlDn_tMGVPof8Ubwl&s=UWzB9biZZZhV8bsqFXz-nWLA0WM5f7xbrfkgJrleF5M&e=>) (10/18, Roston) "Japan has announced plans to help NASA in its effort to return humans to the Moon in 2024. The work will take place under NASA's Artemis program, one of multiple efforts that will pave the way for an eventual human trip to Mars. Under its participation, Japan's Cabinet Office revealed that it will help build the orbital outpost intended to serve as a base for astronauts."

#### Japan To Join Artemis Program

Space News <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D032-2D5f9-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml\\_6\\_873ekEEvDPSM4qdpSmlDn\\_tMGVPof8Ubwl&s=oz8l427C9q82TGYUJMjKxOgNzX0CGq4QjY2ng2BX\\_Gg&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D032-2D5f9-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml_6_873ekEEvDPSM4qdpSmlDn_tMGVPof8Ubwl&s=oz8l427C9q82TGYUJMjKxOgNzX0CGq4QjY2ng2BX_Gg&e=>) (10/20, Foust) "The Japanese government plans to join NASA in its Artemis program of lunar exploration, although the details about how it will contribute remain to be worked out. In an Oct. 18 statement posted on Twitter, the office of Japanese Prime Minister Shinz Abe said that his government's Strategic Headquarters for National Space Policy had decided the country would join NASA in its plans to return humans to the moon, one that could lead to Japanese astronauts one day setting foot there."

#### The 1st Human On Mars May Be A Woman, NASA Chief Says

SPACE <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D033-2D4ee-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml\\_6\\_873ekEEvDPSM4qdpSmlDn\\_tMGVPof8Ubwl&s=G3upXssk3zNk\\_7okxXtHjC1MmCoaos4Su-SnFu9OLSE&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D033-2D4ee-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml_6_873ekEEvDPSM4qdpSmlDn_tMGVPof8Ubwl&s=G3upXssk3zNk_7okxXtHjC1MmCoaos4Su-SnFu9OLSE&e=>) (10/19, Weitering) "When NASA sends humans to the moon for the first time in more than half a century, one lucky astronaut will go down in history for becoming the first woman on the moon. Then it won't be long before we see the first woman on Mars, and she just might beat the first man there, according to NASA Administrator Jim Bridenstine."

#### NASA Aims To Fast-Track Crewed Lunar Lander

Aviation Week <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D034-2D84b-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml\\_6\\_873ekEEvDPSM4qdpSmlDn\\_tMGVPof8Ubwl&s=uKhs5jXMCq1oLX6gSa7xMOBmDqelol1Rlv748sgweg4&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D034-2D84b-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml_6_873ekEEvDPSM4qdpSmlDn_tMGVPof8Ubwl&s=uKhs5jXMCq1oLX6gSa7xMOBmDqelol1Rlv748sgweg4&e=>) (10/21, Klotz) "In what may be a quixotic attempt to land astronauts on the Moon in five

years, NASA is temporarily lifting the requirement to stage the mission from the planned lunar-orbiting Gateway, a small outpost intended to serve as an assembly hub and command center for future lunar and deep-space ventures.”

#### Lawmakers Question NASA’s Plan For A 2024 Moon Landing

Spaceflight Now <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D035-2D5e2-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml\\_6\\_873ekEEvDPSM4qdpSmlDn\\_tMGVPof8UbwI&s=4C2k-N3Ri2\\_IBxawmqGT7bjz8H6fpPrTOAI8FTIS\\_DE&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D035-2D5e2-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml_6_873ekEEvDPSM4qdpSmlDn_tMGVPof8UbwI&s=4C2k-N3Ri2_IBxawmqGT7bjz8H6fpPrTOAI8FTIS_DE&e=>) (10/18, Clark) “Amid questions from lawmakers about the cost of the Trump administration’s proposal to accelerate a human return to the moon’s surface to 2024, the chairman of the House subcommittee responsible for helping write NASA’s budget said this week he favors keeping to the space agency’s earlier schedule for a crewed lunar landing by 2028.”

#### NASA Budget Hearing

WFTV-TV Orlando (FL) <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D036-2D951-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml\\_6\\_873ekEEvDPSM4qdpSmlDn\\_tMGVPof8UbwI&s=qz4Q3NmEzWOR44-mXigrWvNNhtl2mAgB2icqPVuQ-Q&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D036-2D951-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml_6_873ekEEvDPSM4qdpSmlDn_tMGVPof8UbwI&s=qz4Q3NmEzWOR44-mXigrWvNNhtl2mAgB2icqPVuQ-Q&e=>) (10/20) “NASA says there is no guarantee it’ll put astronauts back on the moon by 2024. That’s because they are still trying to figure out much money they need to meet the 2024 goal.”

#### NASA Agrees To Order More SLS Core Stages From Boeing For Artemis Moon Missions

Florida Today <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D037-2D83f-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml\\_6\\_873ekEEvDPSM4qdpSmlDn\\_tMGVPof8UbwI&s=\\_8Y5jQNXmzzYhkhNKMhupa1rY3dv8LYwJKYW6x5QFCc&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D037-2D83f-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml_6_873ekEEvDPSM4qdpSmlDn_tMGVPof8UbwI&s=_8Y5jQNXmzzYhkhNKMhupa1rY3dv8LYwJKYW6x5QFCc&e=>) (10/18, Denmark) “NASA is moving forward on purchasing more core stages from Boeing for its upcoming Space Launch System rocket, the vehicle chosen to power deep-space voyages to the moon and beyond. The agency recently provided the aerospace and defense giant with initial funding to produce the third core stage, which will launch Artemis III, the mission to put humans back on the lunar surface by 2024. The newest contract expansion would allow for the purchase of up to 10 more 212-foot-tall SLS core stages and eight more upper stages.”

#### NASA Orders More SLS Megarockets From Boeing For Artemis Moon Missions

SPACE <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D038-2DDecb-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml\\_6\\_873ekEEvDPSM4qdpSmlDn\\_tMGVPof8UbwI&s=DhgcFiZEPOF7LZQaSF1OpMTc86Lcno2UJr2nSj8JMYE&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D038-2DDecb-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml_6_873ekEEvDPSM4qdpSmlDn_tMGVPof8UbwI&s=DhgcFiZEPOF7LZQaSF1OpMTc86Lcno2UJr2nSj8JMYE&e=>) (10/18) “NASA has extended Boeing’s moon rocket assembly authorization in preparation to support as many as 10 moon missions for the agency’s Artemis program, which aims to land astronauts on the moon in 2024. On Wednesday (Oct. 16), NASA announced interim additional funding for Boeing – and an authorization to buy raw materials for rocket-building in bulk – as the company and NASA continue to negotiate a full contract for Artemis.”

## Solar System and Beyond

### It Worked! NASA's Plan To Get Its InSight Tool Digging Again Pays Off

BGR <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D039-2D20b-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml\\_6\\_873ekEEvDPSM4qdpSmlDn\\_tMGVPof8Ubwl&s=YL5evHX2UIO9giKGW9x\\_zy3DxhY0QuMDX8-l6UPbJ\\_w&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D039-2D20b-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml_6_873ekEEvDPSM4qdpSmlDn_tMGVPof8Ubwl&s=YL5evHX2UIO9giKGW9x_zy3DxhY0QuMDX8-l6UPbJ_w&e=>) (10/18, Wehner) "NASA's InSight lander is doing some great work on Mars. It's been listening closely for rumblings from inside the planet and even provides timely weather reports back to Earth. It's great... but it could be even greater. Shortly after deploying its instruments it quickly became clear that one of the tools just wasn't performing as expected. The self-burring "mole" tool, which is designed to dig up to 16 feet into the surface just couldn't get a grip, stalling out and putting one of the mission's objectives in jeopardy. Now, a rather innovative workaround has proven successful, and the mole is digging once more."

### NASA's Mars InSight Is Unstuck And Officially Back To Work

Mashable <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D03a-2D564-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml\\_6\\_873ekEEvDPSM4qdpSmlDn\\_tMGVPof8Ubwl&s=eS5TDbG8GliDjLzjgxX7bncRJ6mPa18jWKH7bqvnWvl&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D03a-2D564-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml_6_873ekEEvDPSM4qdpSmlDn_tMGVPof8Ubwl&s=eS5TDbG8GliDjLzjgxX7bncRJ6mPa18jWKH7bqvnWvl&e=>) (10/20, Rosenberg) "It was looking grim for NASA's Mars InSight mission back at the beginning of October. But now, things seem to have turned around. The InSight lander had originally been sent to the Red Planet with the goal of drilling some 16 feet into the Martian terrain, to measure heat beneath the surface."

### NASA's Mars Orbiter Visited The InSight Lander And Curiosity Rover From Above

BGR <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D03b-2D8ea-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml\\_6\\_873ekEEvDPSM4qdpSmlDn\\_tMGVPof8Ubwl&s=7CpObE12GLRrWY0fC9soSgp aDICAaLmKPS1V1jRDqJY&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D03b-2D8ea-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml_6_873ekEEvDPSM4qdpSmlDn_tMGVPof8Ubwl&s=7CpObE12GLRrWY0fC9soSgp aDICAaLmKPS1V1jRDqJY&e=>) (10/20, Wehner) "It wasn't that long ago that the idea of having a single functioning machine on Mars was little more than a dream for scientists. Today, NASA has a whole bunch of hardware on and around the Red Planet, and sometimes they catch a glimpse of one another as they go about their business."

### NASA's InSight Lander Can Finally Dig A Hole For Its Mars Heat Probe

Engadget <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D03c-2Dff6-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml\\_6\\_873ekEEvDPSM4qdpSmlDn\\_tMGVPof8Ubwl&s=tkiUIlQWc-i8x8LBkDbYv1BXbSkjRKlyj\\_V3OA4I4z0&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D03c-2Dff6-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml_6_873ekEEvDPSM4qdpSmlDn_tMGVPof8Ubwl&s=tkiUIlQWc-i8x8LBkDbYv1BXbSkjRKlyj_V3OA4I4z0&e=>) (10/20) "It's still moving slowly. The mole has dug roughly three quarters of an inch since October 8th, and it could venture as deep as 16 feet. It could be a long, long time before the probe reaches its potential. Nonetheless, it's a huge relief to scientists worried that one of InSight's key instruments might go to waste. So long as there aren't rocks or other hard obstacles underneath, the probe could shed more light on what's happening beneath Mars' surface."

## RIP, Van Allen Probes! NASA Ends 7-Year Mission To Explore Earth's Radiation Belts

SPACE <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D03d-2D740-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml\\_6\\_873ekEEvDPSM4qdpSmlDn\\_tMGVPof8Ubwl&s=O2M6Sb0ZLloLf8ucBDPdac83e78e7NgSmrbkLKxzyE&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D03d-2D740-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml_6_873ekEEvDPSM4qdpSmlDn_tMGVPof8Ubwl&s=O2M6Sb0ZLloLf8ucBDPdac83e78e7NgSmrbkLKxzyE&e=>) (10/18) "Another long-lived NASA mission has come to an end, this one after more than seven years of dancing through the perilous belts of radiation around Earth. Mission scientists sent the final command to the second Van Allen Probe today (Oct. 18) at 12:30 p.m. EDT (1630 GMT)."

## NASA's Resilient Van Allen Probes Shut Down

Spaceflight Now <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D03e-2D936-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml\\_6\\_873ekEEvDPSM4qdpSmlDn\\_tMGVPof8Ubwl&s=bIOgL97rjVfn1UsaU1qIDTEBbo3pFwLNSewlZGXREjw&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D03e-2D936-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml_6_873ekEEvDPSM4qdpSmlDn_tMGVPof8Ubwl&s=bIOgL97rjVfn1UsaU1qIDTEBbo3pFwLNSewlZGXREjw&e=>) (10/20, Clark) "Ground controllers transmitted commands to shut down the second of NASA's Van Allen Probes on Friday, three months after turning off an identical satellite to conclude a seven-year mission that explored the donut-shaped radiation belts surrounding Earth. The Van Allen Probes were running low on fuel after maneuvers earlier this year to lower their orbits, allowing the satellites to naturally fall back into Earth's atmosphere and burn up in about 15 years."

## NASA Scientist Researching Life On Mars

KRIV-TV Houston <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D03f-2D245-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml\\_6\\_873ekEEvDPSM4qdpSmlDn\\_tMGVPof8Ubwl&s=tQ1P7k\\_OAwGy5G0n9sVqSRYmXhdxduLl-87aGhpOTNo&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D03f-2D245-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml_6_873ekEEvDPSM4qdpSmlDn_tMGVPof8Ubwl&s=tQ1P7k_OAwGy5G0n9sVqSRYmXhdxduLl-87aGhpOTNo&e=>) (10/20) "NASA scientists are working on a new project to find out if there was ever life on the planet Mars. 'If you told me 10 years ago I was going to get it, I wouldn't have believed you. '"

## Space Tech

### Mars 2020 Unwrapped And Ready For Testing

Phys (UK) <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D040-2D6ab-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml\\_6\\_873ekEEvDPSM4qdpSmlDn\\_tMGVPof8Ubwl&s=qmSD30zsqvdLiqQB0LZ95iP4Lan182Czlhcl1dnlBkSA&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D040-2D6ab-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml_6_873ekEEvDPSM4qdpSmlDn_tMGVPof8Ubwl&s=qmSD30zsqvdLiqQB0LZ95iP4Lan182Czlhcl1dnlBkSA&e=>) (10/19) "In this time-lapse video, taken on Oct. 4, 2019, at NASA's Jet Propulsion Laboratory in Pasadena, California, bunny-suited engineers remove the inner layer of protective antistatic foil on the Mars 2020 rover after the vehicle was relocated from JPL's Spacecraft Assembly Facility to the Simulator Building for testing. "The Mars 2020 rover will be collecting samples for future return to Earth, so it must meet extraordinary cleanliness measures to avoid the possibility of contaminating Martian samples with terrestrial contaminants," said Paul Boeder, contamination control lead for Mars 2020 at JPL."



## NASA Tests Models For Lunar Gateway Outpost

Fox News <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D041-2Dd45-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml\\_6\\_873ekEEvDPSM4qdpSmlDn\\_tMGVPof8Ubwl&s=0e57kRLjiKaZivDCBYm4sOM73jMhjpwa8fAj7Tm7rfI&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D041-2Dd45-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml_6_873ekEEvDPSM4qdpSmlDn_tMGVPof8Ubwl&s=0e57kRLjiKaZivDCBYm4sOM73jMhjpwa8fAj7Tm7rfI&e=>) (10/18) "Dozens of NASA officials are working to test inflatable space lodges to house astronauts on the surface of the moon."

Various

## NASA Shirts Are Big Sellers For Retailers. Who's Profiting?

Fox Business <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D042-2D75f-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml\\_6\\_873ekEEvDPSM4qdpSmlDn\\_tMGVPof8Ubwl&s=KBE-nba3OgZjBUUpPgjeGctapmNcUF\\_wBCq2dMZpLhC4&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D042-2D75f-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml_6_873ekEEvDPSM4qdpSmlDn_tMGVPof8Ubwl&s=KBE-nba3OgZjBUUpPgjeGctapmNcUF_wBCq2dMZpLhC4&e=>) (10/18, Leggate) "NASA is moving one step closer to another moon mission; Phil Keating reports on the details. Fashion designers can be very protective of their trademarks and it's not unusual for authorities to seize knockoff fashion goods. But one of the hottest brands going right now is letting just about anyone produce merchandise with its logo on it, for free. It's NASA."

## NASA To Provide Coverage Of Key Events At 70th International Astronautical Congress

SpaceRef <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D043-2D95d-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml\\_6\\_873ekEEvDPSM4qdpSmlDn\\_tMGVPof8Ubwl&s=kUSc6job4hsVBN4dSaGTMerqX0kDGAvRLj87FHK5Gh4&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D043-2D95d-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml_6_873ekEEvDPSM4qdpSmlDn_tMGVPof8Ubwl&s=kUSc6job4hsVBN4dSaGTMerqX0kDGAvRLj87FHK5Gh4&e=>) (10/19) "NASA will provide live coverage on NASA Television of key events at the 70th International Astronautical Congress (IAC), which takes place Oct. 21-25 at the Walter E. Washington Convention Center in Washington. In addition, the agency will provide coverage of other events during the week online and via its social media channels."

## Every \$1 NASA Spends Drives Up To \$10 In Growth, And That's Great For The Space Industry, Says Man Behind The UFO ETF

CNBC <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D044-2D900-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml\\_6\\_873ekEEvDPSM4qdpSmlDn\\_tMGVPof8Ubwl&s=YhINi7poKTRwZ2kpS7JowVDVQG7\\_OIEoO9ppjPxCW2E&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D044-2D900-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml_6_873ekEEvDPSM4qdpSmlDn_tMGVPof8Ubwl&s=YhINi7poKTRwZ2kpS7JowVDVQG7_OIEoO9ppjPxCW2E&e=>) (10/19, Gurdus) "Space spending is speeding up. World Space Week, a massive confab that takes place across over 80 countries, just ended, and it has breathed new life into organizations around the world participating in the space race, says one top industry player."

## NASA's Planetary Protection Review Addresses Changing Reality Of Space Exploration

Phys (UK) <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D045-2D900-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml\\_6\\_873ekEEvDPSM4qdpSmlDn\\_tMGVPof8Ubwl&s=YhINi7poKTRwZ2kpS7JowVDVQG7\\_OIEoO9ppjPxCW2E&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D045-2D900-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml_6_873ekEEvDPSM4qdpSmlDn_tMGVPof8Ubwl&s=YhINi7poKTRwZ2kpS7JowVDVQG7_OIEoO9ppjPxCW2E&e=>)

3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D045-2D71d-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml\_6\_873ekEEvDPSM4qdpSmlDn\_tMGVPof8Ubwl&s=qSSr6kLSAlektQFFIVe-E2jzfxutqZYahIOVK7cZd9g&e=> (10/19, NASA) "NASA released a report Friday with recommendations from the Planetary Protection Independent Review Board (PPIRB) the agency established in response to a recent National Academies of Sciences, Engineering, and Medicine report and a recommendation from the NASA Advisory Council. With NASA, international, and commercial entities planning bold missions to explore our solar system and return samples to Earth, the context for planetary protection is rapidly changing. NASA established the PPIRB to conduct a thorough review of the agency's policies."

#### A Powerful Concept Used By NASA Can Help You Get Your Ideas Off The Ground

Detroit Free Press <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D046-2D8e8-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml\\_6\\_873ekEEvDPSM4qdpSmlDn\\_tMGVPof8Ubwl&s=tJXzwwbRJOnEwN5VETn9PVBHiLYby0irulHqRSjTULY&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D046-2D8e8-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml_6_873ekEEvDPSM4qdpSmlDn_tMGVPof8Ubwl&s=tJXzwwbRJOnEwN5VETn9PVBHiLYby0irulHqRSjTULY&e=>) (10/19, Linkner) "When the space shuttle blasts off, two-thirds of its fuel is consumed in the first 20 minutes of flight. The remaining amount powers the shuttle for up to two weeks, including re-entry and landing. The phenomenon at play: escape velocity. Scientists describe the concept as the amount of force required to break free from the gravitational pull of the current state."

#### Future Space Explorers Look To Leverage ISS, Apollo

Aviation Week <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D047-2De90-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml\\_6\\_873ekEEvDPSM4qdpSmlDn\\_tMGVPof8Ubwl&s=F95BKvNBUMeYNFBYwrFUjBwuoHvAfWmVoJ1YSBvCieM&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D047-2De90-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml_6_873ekEEvDPSM4qdpSmlDn_tMGVPof8Ubwl&s=F95BKvNBUMeYNFBYwrFUjBwuoHvAfWmVoJ1YSBvCieM&e=>) (10/18, Carreau) "This year has seen the 50th anniversary of the first human Moon landing and will witness another milestone in the annals of space exploration on Nov. 2—19 years of a continuous human presence aboard the International Space Station (ISS). Now NASA is plotting a return to the Moon with astronauts and a sustained human lunar presence, one that will one day unite government space efforts with the private sector to spring humanity on to Mars and deeper into the Solar System."

#### Other

#### Congress Shouldn't Rush To Tax And Regulate Space Exploration

The Hill <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D048-2D810-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml\\_6\\_873ekEEvDPSM4qdpSmlDn\\_tMGVPof8Ubwl&s=Z\\_YzAeR4ykYSBoYpwwFY4r-XYMU76FY4W80eH9Qp-oA&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D048-2D810-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml_6_873ekEEvDPSM4qdpSmlDn_tMGVPof8Ubwl&s=Z_YzAeR4ykYSBoYpwwFY4r-XYMU76FY4W80eH9Qp-oA&e=>) (10/19, Faith) "Next week, thousands of space professionals from around the globe will converge on Washington, D.C., for the 70th International Astronautical Conference. These professionals and students will present and discuss an array of solutions, concepts and ideas for all things space. But when it comes to formulating new governance structures, rules and regulations, we must remember the vast gap between aspiration and execution in space."

## Japan's 1st Moon Rover To Touch Down In 2021

SPACE <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D049-2D30d-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml\\_6\\_873ekEEvDPSM4qdpSmlDn\\_tMGVPof8UbwI&s=1zxmonKP0NaBxzFbimJ5szJKAXRc0KzujJQ7zq42oao&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D049-2D30d-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml_6_873ekEEvDPSM4qdpSmlDn_tMGVPof8UbwI&s=1zxmonKP0NaBxzFbimJ5szJKAXRc0KzujJQ7zq42oao&e=>) (10/18) “The firsts keep rolling in for a 2021 moon mission. The Pittsburgh-based company Astrobotic plans to send its robotic Peregrine lander to the lunar surface in July 2021, on a mission sponsored by NASA’s Commercial Lunar Payload Services (CLPS) program.”

## How SpaceX Just Turbocharged The Space Race (Again)

Forbes <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D04a-2Dd86-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml\\_6\\_873ekEEvDPSM4qdpSmlDn\\_tMGVPof8UbwI&s=59qjKO739Z7mGM5xl3eVUTIs6gChvhbgZYJ5ndZav3w&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D04a-2Dd86-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml_6_873ekEEvDPSM4qdpSmlDn_tMGVPof8UbwI&s=59qjKO739Z7mGM5xl3eVUTIs6gChvhbgZYJ5ndZav3w&e=>) (10/18, Beames) “In early 2004, an Air Force officer had the opportunity to visit a small rocket company—or, perhaps more accurately, a rented garage in El Segundo, California with a few engineers aspiring to become one. Greeting him on the steps was one of its newest employees and vice president, Gwynne Shotwell, who was brought straight out of the venerable Aerospace Corporation, the technical backbone of the government’s unmanned space launch program for the last fifty years. At the request of a few key senators, he was there to meet and take measure of a young entrepreneur named Elon Musk.”

## Elon Musk’s SpaceX Has A Plan To Deploy Up To 30,000 New Satellites – And Morgan Stanley Says It Could Cost As Much As \$60 Billion

Business Insider <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D04b-2D9a3-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml\\_6\\_873ekEEvDPSM4qdpSmlDn\\_tMGVPof8UbwI&s=vCVzpEIL23cl2bH-sOzGxsBayuU-yO7FhddNo-CuSPg&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D04b-2D9a3-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml_6_873ekEEvDPSM4qdpSmlDn_tMGVPof8UbwI&s=vCVzpEIL23cl2bH-sOzGxsBayuU-yO7FhddNo-CuSPg&e=>) (10/18, Strauss) “Elon Musk’s SpaceX reportedly has plans to launch 30,000 more Starlink internet satellites – and Morgan Stanley says the initiative could cost as much as \$60 billion. The bank’s analysis assumes a cost of \$1 million to build each satellite and about \$50 million for every 60 satellites launched.”

## ESA Member States To Discuss \$14B Proposal

Aviation Week <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D04c-2De93-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml\\_6\\_873ekEEvDPSM4qdpSmlDn\\_tMGVPof8UbwI&s=eicOY6O8Q3taq8IE873eRuHEI0qaXg8k0zgUrq89mFg&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019102102nasa-26r-3Demail-2D98ed-26l-3D04c-2De93-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=bZe2ml_6_873ekEEvDPSM4qdpSmlDn_tMGVPof8UbwI&s=eicOY6O8Q3taq8IE873eRuHEI0qaXg8k0zgUrq89mFg&e=>) (10/18, Dubois) “The European Space Agency (ESA) is gearing up for its Space19+ ministerial council, to be held Nov. 27-28 in Seville, Spain, where the 22 member states will discuss Director General Jan Woerner’s €12.5 billion (\$14 billion) budget proposal. The amount corresponds to the level of resources needed for mandatory programs in the four pillars of ESA’s activities over three years, Woerner says.”

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## **[EXTERNAL] NASA Morning Briefing for Thursday, July 1, 2021**

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Editor's Note

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### Visitors On Mars Send New Views To Earth

#### New York Times

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### Meet The Gender-inclusive Crew Of Dummies Heading To The Moon

#### Mashable



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“Before any humans head back to the moon in the near future, three dummies are testing it out in NASA’s Artemis 1 mission. One is a full male-bodied manikin; the other two are female-bodied torsos. The varied manikin bodies — made with materials that simulate the stuff that makes up humans, like our skin, bones, and organs — will provide scientists important, inclusive data about radiation for future Artemis astronauts in 2023 and beyond.”

#### NASA’s Hubble Telescope Has A Mystery Computer Problem. Here’s How They Are Trying To Fix It

ZDNet

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“NASA’s engineers are currently trying to diagnose and fix a computer failure; but this is not an easy thing to do when the problem is on a bus-sized telescope currently orbiting in space, 547 kilometers above our heads, at a speed of about 27,000 kilometers per hour. A couple of weeks ago, NASA’s beloved Hubble Space Telescope, which over the course of its 31-year career has provided us with many enchanting pictures of distant stars and galaxies, started showing some worrying symptoms.”

#### NASA’s Most Important Mission, Long Delayed, Is Finally On Track

Air & Space Smithsonian Magazine

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“Happy Asteroid Day! Unless one of them hits Earth, of course. In that case, not happy at all. ... In 2005 Congress ordered NASA to identify 90 percent of the 140-meter-and-up, region-destroying rocks, on top of the 1,000 or so kilometer-size objects already found. The deadline was supposed to be 2020. The job is only about 40 percent finished, however, and the pace of discovery is slowing. At the current rate it will take more than 30 years to reach that 90 percent goal.”

#### NASA Announces New Director For Johnson Space Center

Houston Chronicle

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“Vanessa Wyche was named director of Johnson Space Center Wednesday by NASA Administrator Bill Nelson. ‘I’m humbled and honored to be chosen to lead the more than 10,000 employees at Johnson Space Center,’ said Wyche. ‘I look forward to working with everyone as we push forward to the moon and inspire a new generation of explorers to reach for the stars.’”

## Branson's Virgin Orbit Launches 7 Satellites From 747 Plane

AP

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"Richard Branson's Virgin Orbit delivered satellites from three countries into space Wednesday, its second successful rocket launch from a plane. The company's modified 747 jet dubbed Cosmic Girl jet took off from California's Mojave Desert, carrying the 70-foot (21-meter) rocket beneath its left wing. Once the plane was over the Pacific near the Channel Islands, the LauncherOne rocket peeled away, then fired its engine to head to space. The drop occurred at an altitude of about 37,000 feet (11,000 meters)."

## SpaceX Launches Second Dedicated Rideshare Mission

Space News

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"SpaceX launched 88 satellites on a Falcon 9 June 30 on the company's second dedicated smallsat rideshare mission. The Falcon 9 lifted off from Space Launch Complex 40 at Cape Canaveral Space Force Station at 3:31 p.m. Eastern, more than halfway into a nearly hourlong launch window because of weather. A launch attempt the day before was scrubbed when a private helicopter entered restricted airspace minutes before the scheduled liftoff."

Flight

No content.

Earth

## Climate Change Is Shrinking Our Atmosphere With Unexpected Consequences

SlashGear

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"Climate change isn't just causing heatwaves right now, but could eventually lead to a pile-up of space trash in low Earth orbit, NASA warns, with almost three decades of data suggesting a vital layer of our atmosphere is shrinking because of greenhouse gas emissions. An increase in carbon dioxide has led to the upper atmosphere gradually contracting, with a new study putting a number on that change for the first time."

Humans in Space

## 50 Years Later: Remembering The Mission, Sacrifice Of The Soyuz 11 Crew

NASA Space Flight

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#### God Speed, Jeff Bezos, On Your Historic Space Flight July 20

Forbes

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#### Branson Mum On When He'll Launch To Space On Virgin Galactic

AP

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#### As The Titanic Decays, Expedition Will Monitor Deterioration

AP

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021070102nasa&r=email-ea8f&l=00e-e73&t=c&data=04|01|randy.c.cruz@nasa.gov|15f03f4482584daa02a208d93c7f61f0|7005d45845be48ae8140d43da96dd17b|0|0|637607340143974499|Unknown|TWFpbGZsb3d8eyJWljoimC4wLjAwMDAiLCJQljoiv2luMzliLCJBTil6lk1haWwiLCJXVCi6Mn0=|1000&sdata=YQyLio/bhV8xW7EMnvMoCi/8y2x3Ocl3XURMEugw5xY=&reserved=0>> (6/30) "The Titanic is disappearing. The iconic ocean liner that was sunk by an iceberg is now slowly succumbing to metal-eating bacteria: holes pervade the wreckage, the crow's nest is already gone and the railing of the ship's iconic bow could collapse at any time. ... 'Somebody paid \$28 million to go with Blue Origin to space, not even the moon,' said Renata Rojas, 53, of Hoboken, New Jersey. 'This is cheap in comparison.'"

## Astronauts Cook On ISS

WKMG-TV Orlando (FL)

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021070102nasa&r=email-ea8f&l=00f-a2c&t=c&data=04|01|randy.c.cruz@nasa.gov|15f03f4482584daa02a208d93c7f61f0|7005d45845be48ae8140d43da96dd17b|0|0|637607340143984456|Unknown|TWfPbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQljojV2luMzliLCJBTil6lk1haWwiLCJXVCI6Mn0=|1000&sdata=eUniqA84eBy5TwEe/HBKvNkl8x4YnAlte/ksYqzifQ=&reserved=0>> (6/30) “Well, as you can imagine, the astronauts are pretty busy up on the International Space Station, but they still have to make time to eat. That you do. So a French astronaut from the European Space Agency showing off his cooking skills.”

## Moon to Mars

### Visitors On Mars Send New Views To Earth

New York Times

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### Meet The Gender-inclusive Crew Of Dummies Heading To The Moon

Mashable

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021070102nasa&r=email-ea8f&l=011-91e&t=c&data=04|01|randy.c.cruz@nasa.gov|15f03f4482584daa02a208d93c7f61f0|7005d45845be48ae8140d43da96dd17b|0|0|637607340143994408|Unknown|TWfPbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQljojV2luMzliLCJBTil6lk1haWwiLCJXVCI6Mn0=|1000&sdata=OeNpLHhe78br5sZ/A7yiw2HO1xrUkJBYwAJEUlwhcA=&reserved=0>> (6/30, Beck) “Before any humans head back to the moon in the near future, three dummies are testing it out in NASA’s Artemis 1 mission. One is a full male-bodied manikin; the other two are female-bodied torsos. The varied manikin bodies — made with materials that simulate the stuff that makes up humans, like our skin, bones, and organs — will provide scientists important, inclusive data about radiation for future Artemis astronauts in 2023 and beyond.”

### NASA Dummy Headed To Moon For Artemis 1 Mission Gets Crowdsourced Name

CNET News

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021070102nasa&r=email-ea8f&l=012-4ca&t=c&data=04|01|randy.c.cruz@nasa.gov|15f03f4482584daa02a208d93c7f61f0|7005d45845be48ae8140d43da96dd17b|0|0|637607340143994408|Unknown|TWfPbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQljojV2luMzliLCJBTil6lk1haWwiLCJXVCI6Mn0=|1000&sdata=lf1AA3acSBSco+TJ1TCGOg+Vssy7VbfayF5MMB7bi6w=&reserved=0>> (6/30, Katz) “A manikin headed to the moon as part of NASA’s Artemis 1 mission later this year has a new name. Say hello to ‘Commander Moonikin Campos.’ The name, chosen via public vote, honors Arturo Campos, an electrical engineer who helped bring Apollo 13 safely back to Earth after a service module oxygen tank aboard the spacecraft ruptured, putting astronauts Jim Lovell, Jack Swigert and Fred Haise in peril.”

## 'Moonikin' Flying On NASA's Artemis 1 Named For Apollo 13 Engineer

### SPACE

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## Mars Has Auroras And A U.A.E. Spacecraft Captured New Pictures Of Them

### New York Times

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021070102nasa&r=email-ea8f&l=014-f17&t=c&data=04|01|randy.c.cruz@nasa.gov|15f03f4482584daa02a208d93c7f61f0|7005d45845be48ae8140d43da96dd17b|0|0|637607340144004378|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQljojV2luMzliLCJBTil6lk1haWwiLCJXVCI6Mn0=|1000&sdata=jwn8ebUQ66GO8KIENzh/qDKk+uCQmVZiWp8c2sxO8l8=&reserved=0>> (6/30, Chang) "When barrages of charged protons and electrons erupted from the sun head our way, Earth's magnetic field deftly deflects them around the planet. This buffeting generates shimmering, glowing curtains of color known as the aurora borealis in northern hemisphere's polar regions, and aurora australis in the south. ... NASA's MAVEN spacecraft can also take similar pictures of the Martian auroras when its elliptical orbit takes it farther from the planet, and it can also directly measure and identify the solar particles creating the light show when it is passing close by. But it cannot make both measurements simultaneously."

## NASA's Curiosity Is Likely Detecting Methane From Mars' Deep Subsurface After All

### Forbes

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021070102nasa&r=email-ea8f&l=015-1ed&t=c&data=04|01|randy.c.cruz@nasa.gov|15f03f4482584daa02a208d93c7f61f0|7005d45845be48ae8140d43da96dd17b|0|0|637607340144014325|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQljojV2luMzliLCJBTil6lk1haWwiLCJXVCI6Mn0=|1000&sdata=gltoUfqMGQyirIMBG3npK+TpO5qb+w/PwwwAL74K9w=&reserved=0>> (6/30, Dorminey) "For the past two decades, planetary scientists have been trying to solve the mystery surrounding measurements of atmospheric methane on Mars. This includes repeated detections of this potential biosignature right above the surface of Mars' Gale Crater by NASA's Curiosity rover."

## Methane Keeps Showing Up On Mars. NASA Just Got Closer To Solving The Mystery

### ScienceAlert (AUS)

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organisms, most notoriously by farting cows. Its detection on Mars, on the other hand, has been a weird mystery for planetary scientists. In recent years, NASA's Curiosity rover has picked up tiny traces of methane numerous times on the red planet. While these emissions might be coming from some geological process, it was possible they could indicate the presence of some sort of life form on Mars (unlikely to be cows, of course)."

#### NASA Is Hard At Work On The Martian Methane Mystery

SlashGear

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021070102nasa&r=email-ea8f&l=017-3ae&t=c&data=04|01|randy.c.cruz@nasa.gov|15f03f4482584daa02a208d93c7f61f0|7005d45845be48ae8140d43da96dd17b|0|0|637607340144024283|Unknown|TWfPbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQljojV2luMzliLCJBTil6lk1haWwiLCJXVCI6Mn0=|1000&sdata=EH446yB9uB/WmCNLKDikMjopNkH1T66macDjqM/ttaY=&reserved=0>> (6/30, McGlaun) "There are numerous mysteries on Mars that scientists from around the world are working to solve. One of the most tantalizing of those mysteries is reports of methane detection on the Red Planet. Here on Earth, significant amounts of methane is produced by microbes helping livestock digest plants. The digestion process ends with livestock exhaling gas into the air. ... However, there have also been spikes up to 20 parts per billion in volume. Both the ESA and NASA's instruments are so precise; scientists are struggling to figure out the discrepancy between the two instruments."

#### NASA Scientists May Have Solved A Vanishing Methane Mystery On Mars

New Atlas

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#### SpaceX Launch Delay; Moonikin Named

KHOU-TV Houston

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#### Solar System and Beyond

#### No Hope For Life In Venus Clouds

LiveScience

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021070102nasa&r=email-ea8f&l=01a->

fb8&t=c&data=04|01|randy.c.cruz@nasa.gov|15f03f4482584daa02a208d93c7f61f0|7005d45845be48ae8140d43da96dd17b|0|0|637607340144044193|Unknown|TWfPbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiv2luMzliLCJBTil6lk1haWwiLCJXVCI6Mn0=|1000&sdata=zB9iPq6Z6b5gKD6WalhmQmli34sp5NcBDADkfmt/nJ0=&reserved=0> (6/30, Pultarova) “The amount of water in the atmosphere of Venus is so low that even the most drought-tolerant of Earth’s microbes wouldn’t be able to survive there, a new study has found. The findings seem to wipe out the hope stirred by last year’s discovery of molecules potentially created by living organisms in the scorched planet’s atmosphere that were seen as an indication of the possible presence of life. ... NASA Ames astrobiologist Chris McKay, one of the co-authors of the paper, said in the news conference that the findings of the study were conclusive and the new fleet of space missions currently being prepared for Venus will not change anything about the hope for life on Earth’s closest neighbor.”

#### NASA In Search For Alien Life

Cosmos Magazine (AUS)

<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021070102nasa&r=email-ea8f&l=01b-2e5&t=c&data=04|01|randy.c.cruz@nasa.gov|15f03f4482584daa02a208d93c7f61f0|7005d45845be48ae8140d43da96dd17b|0|0|637607340144044193|Unknown|TWfPbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiv2luMzliLCJBTil6lk1haWwiLCJXVCI6Mn0=|1000&sdata=pJpqfawax/UoG5rbsHk+qLyPz3qlwQrkoufz8sS0ZFg=&reserved=0> (6/30, Shepherd) “The much-anticipated UFO report released last Friday did not confirm or deny the existence of extraterrestrial intelligent beings, but NASA Administrator Bill Nelson says he thinks they’re out there somewhere. And the biggest, most powerful telescope ever built could be the key to finding them.”

#### 30 Years Of Stunning Photos Show Why NASA Is Fighting To Save Its Hubble Space Telescope From A Mysterious Glitch

Insider

<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021070102nasa&r=email-ea8f&l=01c-976&t=c&data=04|01|randy.c.cruz@nasa.gov|15f03f4482584daa02a208d93c7f61f0|7005d45845be48ae8140d43da96dd17b|0|0|637607340144054151|Unknown|TWfPbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiv2luMzliLCJBTil6lk1haWwiLCJXVCI6Mn0=|1000&sdata=+wsiGcG53wMu+aZHnTsOIGh8Ct6+QaKu3BIUp/H/ljg=&reserved=0> (6/30, McFall-Johnsen) “The telescope’s payload computer suddenly stopped working on June 13. That computer, built in the 1980s, is like Hubble’s brain — it controls and monitors all the science instruments on the spacecraft. NASA has tried and failed to bring it back online four times. The Hubble team has since determined that the computer may not be the problem. The team is still running diagnostics and assessing other parts of the telescope. If NASA can’t fix the issue, Hubble should be able to switch to backup hardware. But the telescope hasn’t been upgraded since the last astronauts serviced it in 2009.”

#### ‘Killer’ Asteroid Headed Our Way! When To Fear Space Rocks

CNET News

<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021070102nasa&r=email-ea8f&l=01d-c48&t=c&data=04|01|randy.c.cruz@nasa.gov|15f03f4482584daa02a208d93c7f61f0|7005d45845be48ae8140d43da96dd17b|0|0|637607340144054151|Unknown|TWfPbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiv2luMzliLCJBTil6lk1haWwiLCJXVCI6Mn0=|1000&sdata=ujgL4d23aauxyqDefWUuVKA6CTaVeM3N2prSOXCwl=&reserved=0> (6/30, Mack) “Early in January 2020, a ‘gigantic’ asteroid the size of the Empire State Building speeded ‘towards Earth.’ ...Next I checked the public database of close approaches maintained by the Center for Near Earth Studies at NASA’s Jet Propulsion Laboratory. A search brought 2006 SF6 right up. It is indeed a bit of a behemoth, with an estimated diameter of between 919 feet and 2,690 feet (280 meters and 820 meters).”

## The Amazing Hubble Telescope Has Suddenly Stopped Working

CNN

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“While the launch of any space-going vehicle is a glorious spectacle, this particular mission was special. Safely nestled in its cargo bay was the powerful Hubble Space Telescope, which would become the most successful of its kind. Quite literally, Hubble has caused the astronomical community to rewrite the textbooks. However, it is possible that its reign has ended. On June 13, a crucial component that operated the telescope stopped working. The instrument automatically placed itself in safe mode and it notified NASA operators of the situation. The operators have tried valiantly to fix the wayward computer, but they failed.”

### Hubble Waylaid By Computer Fault

Astronomy News

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### NASA’s Hubble Telescope Has A Mystery Computer Problem. Here’s How They Are Trying To Fix It

ZDNet

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### Journey To The Dragon Palace: Inside Japan’s Daring 10-year Mission To Visit Asteroid Ryugu

CNET News

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WwiLCJXVCI6Mn0=|1000&sdata=S9GnmgRHsEvnQsXkgxjwFXNGJwdtoqPw0QKPDBzujfM=&reserved=0> (6/30, Ryan) “In a gray camouflage tee and blue denim jeans, Masaki Fujimoto is dressed all too casually for a man about to make history. Queen’s Don’t Stop Me Now has been playing on repeat, in his head, for weeks. One line is particularly prophetic for the 56-year-old astrophysicist. ... The spacecraft’s achievements are some of the most valuable in the history of deep space exploration, akin to NASA’s feats of landing rovers on Mars or exploring Pluto and its moons up close. On a smaller budget than NASA’s, with a much smaller team, Japan wrote its way into space history.”

#### Astronomers Spot A White Dwarf, As Small As The Moon, On Verge Of Collapse

CNET News

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021070102nasa&r=email-ea8f&l=022-822&t=c&data=04|01|randy.c.cruz@nasa.gov|15f03f4482584daa02a208d93c7f61f0|7005d45845be48ae8140d43da96dd17b|0|0|637607340144084025|Unknown|TWFpbGZsb3d8eyJWljoimC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ik1haWwiLCJXVCI6Mn0=|1000&sdata=tN4yQBI+Z4oQn5zjq1bfLc9u5KYZsmNkSsBUuwHzcUQ=&reserved=0>> (6/30, Ryan) “What’s slightly larger than our moon but almost 1.4 times more massive than our sun? ZTF J1901+1458, one of the smallest white dwarf stars ever spotted by astronomers. The dying husk of a sun-like star was spotted relatively close by, just 133 light-years away, by a series of ground- and space-based telescopes. ... To get a better handle on its characteristics, they used data collected by the European Space Agency’s Gaia satellite, the Keck telescope in Hawaii and NASA’s Swift observatory.”

Space Tech

#### NASA’s Most Accurate Atomic Clock Will Be Tested On A Mission To Venus

New Scientist

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021070102nasa&r=email-ea8f&l=023-271&t=c&data=04|01|randy.c.cruz@nasa.gov|15f03f4482584daa02a208d93c7f61f0|7005d45845be48ae8140d43da96dd17b|0|0|637607340144084025|Unknown|TWFpbGZsb3d8eyJWljoimC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ik1haWwiLCJXVCI6Mn0=|1000&sdata=hO4dbcPw6rpCy4AxhNtZP8WZew9+Q3Or1JxtLDg4BuQ=&reserved=0>> (6/30, Sparkes) “A toaster-sized atomic clock orbiting Earth is 25 times more accurate than existing space clocks and will soon be tested on a mission to Venus. The highly accurate timepiece could improve navigation for deep-space missions. Atomic clocks work by measuring the radiation emitted by electrons as they hop from lower to higher orbits around atoms. These clocks are used in space now, but the atoms can collide with the walls of the vessel containing them, affecting accuracy.”

#### NASA’s New Atomic Clock Can Revolutionize Deep Space Exploration

Vice

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021070102nasa&r=email-ea8f&l=024-00b&t=c&data=04|01|randy.c.cruz@nasa.gov|15f03f4482584daa02a208d93c7f61f0|7005d45845be48ae8140d43da96dd17b|0|0|637607340144093976|Unknown|TWFpbGZsb3d8eyJWljoimC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ik1haWwiLCJXVCI6Mn0=|1000&sdata=Xzf33C/FI0SZNImN2IPr3pPpzGGhrFGXWbO5MvuYzT0=&reserved=0>> (6/30, Ferreira) “Launching missions beyond our planet requires humanity’s most cutting-edge technologies and aspirational visions. But though these missions accomplish amazing feats, such as landing on other planets or hosting astronauts for months in orbit, there is one simple task they still cannot do all by themselves: tell time. ... In 2019, NASA’s Jet Propulsion Laboratory (JPL) launched an instrument known as the Deep Space Atomic Clock (DSAC) into orbit to conduct the first space-based demonstration of this next-generation technology, which has a dizzying range of future applications.”

## NASA To Test New Solar Sail Technology With Launch In 2022

### SPACE

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"NASA says it plans to test new solar sail technologies in space by the middle of next year. NASA's Advanced Composite Solar Sail System (ACS3) will deploy an apartment-sized solar sail from a toaster-sized cubesat in Earth orbit in mid-2022. The mission will refine technologies associated with solar sails."

### Various

## NASA's Most Important Mission, Long Delayed, Is Finally On Track

### Air & Space Smithsonian Magazine

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"Happy Asteroid Day! Unless one of them hits Earth, of course. In that case, not happy at all. ... In 2005 Congress ordered NASA to identify 90 percent of the 140-meter-and-up, region-destroying rocks, on top of the 1,000 or so kilometer-size objects already found. The deadline was supposed to be 2020. The job is only about 40 percent finished, however, and the pace of discovery is slowing. At the current rate it will take more than 30 years to reach that 90 percent goal."

## NASA Announces New Director For Johnson Space Center

### Houston Chronicle

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"Vanessa Wyche was named director of Johnson Space Center Wednesday by NASA Administrator Bill Nelson. 'I'm humbled and honored to be chosen to lead the more than 10,000 employees at Johnson Space Center,' said Wyche. 'I look forward to working with everyone as we push forward to the moon and inspire a new generation of explorers to reach for the stars.'"

## NASA Names A Woman To Lead Kennedy Space Center For The First Time

### Florida Today

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"On Wednesday NASA administrator Bill Nelson announced Janet Petro will replace Bob Cabana as the new director

of the Kennedy Space Center, making her the first woman to lead the center. 'It's an honor to be selected to lead Kennedy Space Center,' Petro said. 'Having grown up on Florida's Space Coast and being the second generation in my family to work at Kennedy Space Center, it's truly exciting to help grow the multi-user spaceport as we prepare for Artemis and continue launching commercial crew missions to the International Space Station.'"

#### NASA Makes More Than 800 Innovations Available To Public

ZDNet

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021070102nasa&r=email-ea8f&l=029-6ff&t=c&data=04|01|randy.c.cruz@nasa.gov|15f03f4482584daa02a208d93c7f61f0|7005d45845be48ae8140d43da96dd17b|0|0|637607340144113877|Unknown|TWfPbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQljojV2luMzliLCJBTil6Ik1haWwiLCJXVCI6Mn0=|1000&sdata=FMI djzYF8HS+GXta2694uTbO+5dT3P6PSRsNBb2g0mQ=&reserved=0>> (6/30, Greig) "The public will now have access to many of NASA's computational innovations thanks to a new effort to make some of them available for download. NASA Administrator Bill Nelson said in a statement that there are more than 800 pieces of software created by the organization that have helped operations both on Earth and on missions to the Moon and Mars."

#### Celebrate Asteroid Day 2021 With NASA And The Asteroid Foundation

SPACE

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#### Kennedy Space Center Gets First Woman Director, Janet Petro, After Bob Cabana Promoted To NASA

Orlando (FL) Sentinel

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021070102nasa&r=email-ea8f&l=02b-ad8&t=c&data=04|01|randy.c.cruz@nasa.gov|15f03f4482584daa02a208d93c7f61f0|7005d45845be48ae8140d43da96dd17b|0|0|637607340144123844|Unknown|TWfPbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQljojV2luMzliLCJBTil6Ik1haWwiLCJXVCI6Mn0=|1000&sdata=+lcYhFGdoWJGxGFkjsKozUPIDmhisUKNk2LZ0RbsvY=&reserved=0>> (6/30, Glenn) "Petro stepped in as acting director for Kennedy Space Center in May, after Bob Cabana, who had led the center since 2008, was promoted to associate administrator at NASA. On Wednesday, NASA administrator Bill Nelson announced that Petro would be KSC's new permanent leader, making her the first woman to lead the center since it was established in 1962."

Other

#### Branson's Virgin Orbit Launches 7 Satellites From 747 Plane

AP

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08a&t=c&data=04|01|randy.c.cruz@nasa.gov|15f03f4482584daa02a208d93c7f61f0|7005d45845be48ae8140d43da96dd17b|0|0|637607340144133801|Unknown|TWFpbGZsb3d8eyJWljoimC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ik1haWwiLCJXVCI6Mn0=|1000&sdata=71y/yra2ZlqLil9+dpQJ58sBfypvh0dWX4qPQNvbPA8=&reserved=0> (6/30, Dunn) "Richard Branson's Virgin Orbit delivered satellites from three countries into space Wednesday, its second successful rocket launch from a plane. The company's modified 747 jet dubbed Cosmic Girl jet took off from California's Mojave Desert, carrying the 70-foot (21-meter) rocket beneath its left wing. Once the plane was over the Pacific near the Channel Islands, the LauncherOne rocket peeled away, then fired its engine to head to space. The drop occurred at an altitude of about 37,000 feet (11,000 meters)."

#### Virgin Orbit Releases Rocket From Boeing 747 In Mid-air To Send Satellites To Space

Fox Business

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2a5&t=c&data=04|01|randy.c.cruz@nasa.gov|15f03f4482584daa02a208d93c7f61f0|7005d45845be48ae8140d43da96dd17b|0|0|637607340144133801|Unknown|TWFpbGZsb3d8eyJWljoimC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ik1haWwiLCJXVCI6Mn0=|1000&sdata=nO2/uHrY2njZxyidYXIGwkGzXLg3WMjZzu9q7kObygM=&reserved=0> (6/30, Best) "Richard Branson's Virgin Orbit successfully used its unique mid-air launch system to send commercial satellites into orbit for the first time on Wednesday morning. Cosmic Girl, a modified Boeing 747, took off with the 70-foot, 57,000-pound LauncherOne rocket under its left wing around 7 a.m. from the Mojave Air and Space Port in California."

#### Virgin Orbit Plane Launches Four US Military Satellites Into Space

Federal Times

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411&t=c&data=04|01|randy.c.cruz@nasa.gov|15f03f4482584daa02a208d93c7f61f0|7005d45845be48ae8140d43da96dd17b|0|0|637607340144143758|Unknown|TWFpbGZsb3d8eyJWljoimC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ik1haWwiLCJXVCI6Mn0=|1000&sdata=ShqMxotSxvvnZldZEYQVfodNeMvFIj2yT9N4HczePeY=&reserved=0> (6/30, Strout) "Virgin Orbit successfully delivered four U.S. military satellites to low Earth orbit on June 30 as part of the company's second successful launch of the LauncherOne rocket. While most space launches start with the rocket standing vertically on a pad, VOX Space, a subsidiary of Virgin Orbit, is one of a growing number of launch providers that takes its rockets up into the sky via aircraft before launching them midair."

#### Virgin Orbit Launches Its First Commercial Satellites Into Space

CNN Business

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d26&t=c&data=04|01|randy.c.cruz@nasa.gov|15f03f4482584daa02a208d93c7f61f0|7005d45845be48ae8140d43da96dd17b|0|0|637607340144143758|Unknown|TWFpbGZsb3d8eyJWljoimC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ik1haWwiLCJXVCI6Mn0=|1000&sdata=ZZ+6Y+IApGCISszk4nPxEVCNsgHrWHhWb6rzwh6Sy1E=&reserved=0> (6/30, Wattles) "A 70-foot rocket blasted off from beneath the wing of a Boeing 747 over the Pacific Ocean Wednesday, marking the second successful orbital flight for rocket startup Virgin Orbit. The plane, nicknamed Cosmic Girl, took off from California Wednesday just before 7 am PT, and about an hour later, the pilot hit a large red button to cue the rocket's release from beneath the aircraft's left wing. The rocket then fired up its engine and swooped toward outer space as it revved up to more than 17,000 miles per hour."

#### Virgin Orbit Launches Satellites Into Orbit From 747 Jet

The Hill

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021070102nasa&r=email-ea8f&l=030-69d&t=c&data=04|01|randy.c.cruz@nasa.gov|15f03f4482584daa02a208d93c7f61f0|7005d45845be48ae8140d43da96dd17b|0|0|637607340144153712|Unknown|TWfPbGZsb3d8eyJWljoimc4wLjAwMDAiLCJQljoiv2luMzliLCJBTil6lk1haWwiLCJXVCI6Mn0=|1000&sdata=auoisPI2gcR+r0LKokOKKVm4CqLEv/ljLOHqgF5y86U=&reserved=0>> (6/30, Guzman) “Richard Branson’s Virgin Orbit successfully launched a payload of satellites into space Wednesday, its second mission of the year. The satellite launch service’s modified Boeing 747 jet, dubbed ‘Cosmic Girl,’ took flight Wednesday morning from Mojave, Calif., with a 70-foot-long two-stage rocket called LauncherOne under its left wing.”

Virgin Orbit Launches 7 Satellites On Third-ever Space Mission

SPACE

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Russia Says SpaceX Starlink Satellite And Space Junk May Narrowly Miss Progress Cargo Ship In Orbit

SPACE

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Judge Orders SpaceX To Comply With DOJ Subpoena On Its Hiring Practices

Fox Business

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## Musk's SpaceX Must Fork Over Hiring Records For U.S. Bias Probe

Bloomberg

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## Federal Judge Rules SpaceX Must Comply With DOJ Subpoena Of Hiring Records

CNBC

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## SpaceX Must Comply With DOJ Hiring Bias Probe

Law360

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021070102nasa&r=email-ea8f&l=036-616&t=c&data=04|01|randy.c.cruz@nasa.gov|15f03f4482584daa02a208d93c7f61f0|7005d45845be48ae8140d43da96dd17b|0|0|637607340144183589|Unknown|TWFPbGZsb3d8eyJWljoimc4wLjAwMDAiLCJQljoiv2luMzliLCJBTiI6Ik1haWwiLCJXVCI6Mn0=|1000&sdata=FIHx41SS3jEdUV1BRfYnTivIwsomFa+rJy29gctZdvU=&reserved=0>> (6/30) "A California federal judge on Wednesday adopted a magistrate judge's recommendation that Elon Musk's SpaceX should be made to comply with a subpoena connected to a U.S. Department of Justice investigation into claims that the rocket company discriminated against potential hires based on citizenship status. In a brief order, U.S. District Judge Dolly M. Gee adopted U.S. Magistrate Judge Michael R. Wilner's March recommendation and ordered Space Exploration Technologies Corp. to comply with the DOJ's subpoena seeking the Social Security cards, green cards and driver's licenses for 3,500 of the rocket company's newly hired employees."

## Elon Musk Suggests Starlink Will Be Available Worldwide From August — A Month Earlier Than Planned

Insider

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billionaire entrepreneur has suggested. Musk said Tuesday that Starlink could be ready in August. Gwynne Shotwell, SpaceX's president, said previously that Starlink's high-speed broadband would be operational worldwide from September."

#### SpaceX Launches 88 Satellites In Rideshare Mission

CNN Business

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#### SpaceX Launches Second Dedicated Rideshare Mission

Space News

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021070102nasa&r=email-ea8f&l=039-46a&t=c&data=04|01|randy.c.cruz@nasa.gov|15f03f4482584daa02a208d93c7f61f0|7005d45845be48ae8140d43da96dd17b|0|0|637607340144193537|Unknown|TWfPbGZsb3d8eyJWljoimC4wLjAwMDAiLCJQljoiv2luMzliLCJBTil6lk1haWwiLCJXVCI6Mn0=|1000&sdata=XgubVd9uSalivnx+GYt1wZlnLxCHCqv1Z2cZ4AbzZF8=&reserved=0>> (6/30, Foust) "SpaceX launched 88 satellites on a Falcon 9 June 30 on the company's second dedicated smallsat rideshare mission. The Falcon 9 lifted off from Space Launch Complex 40 at Cape Canaveral Space Force Station at 3:31 p.m. Eastern, more than halfway into a nearly hourlong launch window because of weather. A launch attempt the day before was scrubbed when a private helicopter entered restricted airspace minutes before the scheduled liftoff."

#### SpaceX Launches Satellites In Rare Polar Orbit Mission

CBS News

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#### SpaceX Nails Landing Of Reusable Rocket On Land

Bloomberg

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WwiLCJXVCI6Mn0=|1000&sdata=nxGjluJ1dNY+W3BcHiMDNo3oHUwSsVv0Kv7e/9GsmBs=&reserved=0> (6/30)  
“SpaceX launches 88 satellites, including three for Starlink, into orbit. Elon Musk says he wants to use the Starlink  
satellites to beam broadband internet everywhere in the world except the polar regions by August. After this latest  
launch, the Falcon 9 first stage rocket came back to Earth and landed at Cape Canaveral, instead of on a drone ship  
out in the ocean.”

#### SpaceX Nails 20th Falcon 9 Mission This Year With A Big Boom

CNET News

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“A Falcon 9 rocket carried 88 small satellites into space on Wednesday, then made a rare and resounding landing on  
dry ground in Florida. SpaceX launched its Transporter-2 rideshare mission from Launch Complex 40 at the Cape  
Canaveral Space Force Station around 12:30 p.m. PT (3:30 p.m. ET), and about eight minutes later the first-stage  
booster from the vehicle touched down not too far away at Cape Canaveral’s Landing Zone One.”

#### SpaceX Launches Falcon 9 On Rare Trajectory, Lands At Cape Canaveral

Florida Today

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021070102nasa&r=email-ea8f&l=03d-ac3&t=c&data=04|01|randy.c.cruz@nasa.gov|15f03f4482584daa02a208d93c7f61f0|7005d45845be48ae8140d43da96dd17b|0|0|637607340144213451|Unknown|TWFPbGZsb3d8eyJWljoimc4wLjAwMDAiLCJQljoiv2luMzliLCJBTil6lk1haWwiLCJXVCI6Mn0=|1000&sdata=OMx5Ye+7+q16zuoENsaqcH00uWlspBTj5F1oIG64Zyg=&reserved=0>> (6/30) “A  
SpaceX Falcon 9 rocket blasted off into cloudy skies above the Space Coast Wednesday, taking dozens of spacecraft  
to orbit after landing its first stage booster just five miles from where it started. At 3:31 p.m., the 230-foot rocket took  
flight from Cape Canaveral Space Force Station’s Launch Complex 40 and immediately gimbaled its Merlin main  
engines to pivot toward a southbound polar trajectory. Though it disappeared behind clouds, the rocket hugged  
Florida’s east coast as it took the Transporter-2 mission’s 88 payloads to a north-to-south sun-synchronous orbit.”

#### SpaceX Launches First U.S. SDA Experimental Satellites

Aviation Week

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“SpaceX successfully launched its Falcon 9 rocket June 30, one day after the mission was delayed because a  
helicopter was flying in restricted airspace. ‘A privately operated helicopter violated a restricted area in the final  
seconds before a scheduled launch from Cape Canaveral Space Force Station...’”

#### LauncherOne Lofts Defense And Commercial Satellites On First Operational Flight

NASA Space Flight

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fa7&t=c&data=04|01|randy.c.cruz@nasa.gov|15f03f4482584daa02a208d93c7f61f0|7005d45845be48ae8140d43da96dd17b|0|0|637607340144223407|Unknown|TWfPbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiv2luMzliLCJBTil6lk1haWwiLCJXVCI6Mn0=|1000&sdata=OWqObIUpBYzC/PueJU2xyqXqKnnpfa8rXux177R8y04=&reserved=0> (6/30, Corbett) "Small satellite launch company Virgin Orbit has successfully launched its LauncherOne rocket on its first operational flight since wrapping up its flight test program earlier this year. Launch occurred at 7:47 AM PDT (14:47 UTC), within the two hour window that opened at 6:00 AM PDT (13:00 UTC). LauncherOne Flight Three, also known as 'Tubular Bells Part One' in reference to the first track on the first album released by Richard Branson's record label, Virgin Records, marks the first operational flight of LauncherOne, the rocket having previously flown two demonstration flights in May 2020 and January 2021."

## China Outlines Space Plans To 2025

### Space News

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## SpaceX Scrubs Launch After Helicopter Ventures Into Restricted Airspace

### Spaceflight Now

<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021070102nasa&r=email-ea8f&l=041-d87&t=c&data=04|01|randy.c.cruz@nasa.gov|15f03f4482584daa02a208d93c7f61f0|7005d45845be48ae8140d43da96dd17b|0|0|637607340144233366|Unknown|TWfPbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiv2luMzliLCJBTil6lk1haWwiLCJXVCI6Mn0=|1000&sdata=ITJpiB4vRLqVWtOapjmoAxHE1b2Y+EO167HuVWEYepQ=&reserved=0> (6/29, Clark) "A private helicopter flew into restricted airspace near Cape Canaveral moments before the scheduled liftoff of a Falcon 9 rocket Tuesday. SpaceX chief Elon Musk said the keep out zone for launches is 'unreasonably gigantic' and called for updated regulations."

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WwiLCJXVCI6Mn0=|1000&sdata=WrYbAEs3YballJa3DGUDuhwfJjPQRVBDBfJ6QaR62VM=&reserved=0>. The  
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## **[EXTERNAL] NASA Morning Briefing for Thursday, July 16, 2020**

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Boeing To Support NASA With ISS Operations Through 2024

Reuters <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020071602nasa-26r-3Demail-2D3870-26l-3D003-2D433-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=ZDyxn7J0\\_q066FW6QU04ocXxsEld6gptjw8vHwwteDs&s=kSnlsIGL1dv\\_geIjF41nYl5p8jrbjBji37fcFTMI1Xc&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020071602nasa-26r-3Demail-2D3870-26l-3D003-2D433-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=ZDyxn7J0_q066FW6QU04ocXxsEld6gptjw8vHwwteDs&s=kSnlsIGL1dv_geIjF41nYl5p8jrbjBji37fcFTMI1Xc&e=>)> (7/15) "Boeing Co (BA.N) said on Wednesday it would support International Space Station (ISS) operations through September 2024 as part of a \$916 million contract extension with NASA. Under the contract valued at about \$225 million annually, Boeing will provide engineering support services, resources and personnel for activities aboard the ISS and manage the station's systems."

They Gave Us Glasnost, We Gave Them Naglost

Washington Times <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020071602nasa-26r-3Demail-2D3870-26l-3D004-2Dfc8-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020071602nasa-26r-3Demail-2D3870-26l-3D004-2Dfc8-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-)>

mHkTTiYCEf5ROyus&m=ZDyxn7J0\_q066FW6QU04ocXxsEld6gptjw8vHwwteDs&s=zdk1upFAOjhtjr1wUKdpJwgIGxIL2IHKNr8YpdAyZZM&e=> (7/14, Gorin) "ANALYSIS/OPINION: Amid the intermittent riots and looting; the disbanding of police departments; the increase in armed disagreements between citizens; a four-year coup; an economy in turmoil; and talk of a geographic separation between Americans who have a race-based view of the human condition and those who don't, one would think our country's current upheavals — unyielding even to a plague (itself partisan) — would see us wanting to reduce our headaches, perhaps by making nice at least in the international sphere. ... On June 13th, Space.com quoted Russian space chief Dmitry Rogozin: 'The Americans were 'pretty anxious about the fact that they were fully dependent on the reliability of the Russian Soyuz' during the nine years it has ferried NASA astronauts into orbit...He added that the Russians kept the human space program going for all space station partners, while cutting Russian crews and experiments ... (presumably, to allow Americans and ... Europeans, to take seats in the Soyuz).'"

#### Boeing On Track For SLS Hot Fire In October

Aviation Week <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020071602nasa-26r-3Demail-2D3870-26l-3D005-2D8f6-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=ZDyxn7J0\\_q066FW6QU04ocXxsEld6gptjw8vHwwteDs&s=uURIA\\_eRAwl\\_r8\\_GzDyx060RNupEOh\\_aunsel1UKVT0&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020071602nasa-26r-3Demail-2D3870-26l-3D005-2D8f6-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=ZDyxn7J0_q066FW6QU04ocXxsEld6gptjw8vHwwteDs&s=uURIA_eRAwl_r8_GzDyx060RNupEOh_aunsel1UKVT0&e=>) (7/15) "The first Space Launch System (SLS) rocket is about halfway through an eight-part Green Run test program at NASA's Stennis Space Center in Mississippi, with a full-duration static..."

#### Top Russian Space Official Dismisses NASA's Moon Plans, Considering A Lunar Base With China Instead

CNBC <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020071602nasa-26r-3Demail-2D3870-26l-3D006-2D138-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=ZDyxn7J0\\_q066FW6QU04ocXxsEld6gptjw8vHwwteDs&s=wumNr7vSQqdkOSPqI5XDo833BczqjZqFsNoQArVOL4k&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020071602nasa-26r-3Demail-2D3870-26l-3D006-2D138-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=ZDyxn7J0_q066FW6QU04ocXxsEld6gptjw8vHwwteDs&s=wumNr7vSQqdkOSPqI5XDo833BczqjZqFsNoQArVOL4k&e=>) (7/15, Sheetz, Dzhanova) "The head of Russia's space organization criticized the current United States plan to return astronauts to the moon as 'a big political project,' saying his country is instead speaking with China about establishing a lunar base of operations. NASA last year announced its Artemis program, the agency's plan to fulfill President Donald Trump's order in 2017 to return Americans to the surface of the moon by 2024. Additionally, NASA in May unveiled the 'Artemis Accords' – a set of principles it seeks to use as the basis of international agreements with other countries about using and operating in space, especially as the U.S. returns to the moon."

#### What Will Astronauts Need To Survive The Dangerous Journey To Mars?

Science News <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020071602nasa-26r-3Demail-2D3870-26l-3D007-2Df32-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=ZDyxn7J0\\_q066FW6QU04ocXxsEld6gptjw8vHwwteDs&s=gwi6KINguCI7v63riA1BrcFnzbyBE7scLmEVHsUw47U&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020071602nasa-26r-3Demail-2D3870-26l-3D007-2Df32-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=ZDyxn7J0_q066FW6QU04ocXxsEld6gptjw8vHwwteDs&s=gwi6KINguCI7v63riA1BrcFnzbyBE7scLmEVHsUw47U&e=>) (7/15, Temming) "On movie missions to Mars, getting there is the easy part. The Martian's Mark Watney was fine until a dust storm left him fending for himself. Douglas Quaid's jaunt to the Red Planet in Total Recall was smooth sailing until he came under fire at Martian customs and immigration. But in real life, just getting to Mars and back will be rife with dangers that have nothing to do with extreme weather or armed gunmen. 'The mission to Mars is likely going to be four to six individuals [living] together in a can the size of a Winnebago for three years,'

says Leticia Vega, associate chief scientist for the NASA Human Research Program in Houston.”

Flight

No content.

Earth

Methane Bubbles From Arctic Lakes Measured From Space As Atmospheric Levels Reach Peak

Newsweek <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020071602nasa-26r-3Demail-2D3870-26l-3D008-2Dde1-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=ZDyxn7J0\\_q066FW6QU04ocXxsEld6gptjw8vHwwteDs&s=6zUdJrjh5ek2KtnbLG-rpAtAfYz6McEnggiTmSjS0gE&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020071602nasa-26r-3Demail-2D3870-26l-3D008-2Dde1-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=ZDyxn7J0_q066FW6QU04ocXxsEld6gptjw8vHwwteDs&s=6zUdJrjh5ek2KtnbLG-rpAtAfYz6McEnggiTmSjS0gE&e=>) (7/15, Osborne) “Bubbles of methane coming from lakes in the Arctic are being measured from space so scientists can better understand their role in emissions of the potent greenhouse gas. A report from NASA Earth Observatory has looked at the work of Melanie Engram, from the University of Alaska, after she and her team harnessed satellite technology to estimate emissions from a portion of the millions of lakes in this region of the world.”

Flying Photographer George Steinmetz Shows How We’re Impacting The Planet

CNN <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020071602nasa-26r-3Demail-2D3870-26l-3D009-2D390-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=ZDyxn7J0\\_q066FW6QU04ocXxsEld6gptjw8vHwwteDs&s=xrhp9bL3iRBScs8PAZXWmq-Dl616J\\_sQjUKXG\\_OJiJU&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020071602nasa-26r-3Demail-2D3870-26l-3D009-2D390-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=ZDyxn7J0_q066FW6QU04ocXxsEld6gptjw8vHwwteDs&s=xrhp9bL3iRBScs8PAZXWmq-Dl616J_sQjUKXG_OJiJU&e=>) (7/16, Bailey) “Flying hundreds of feet above the ground in a motorized paraglider, George Steinmetz has photographed the world’s most remote environments from the sky. ... He went on to survey and photograph forests, oceans, cities and farmland, first by combing through maps looking for interesting features, then using satellite data provided by NASA. Today, he says he uses Google Earth.”

Humans in Space

Boeing To Support NASA With ISS Operations Through 2024

Reuters <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020071602nasa-26r-3Demail-2D3870-26l-3D00a-2D916-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=ZDyxn7J0\\_q066FW6QU04ocXxsEld6gptjw8vHwwteDs&s=DeufmPovR6Dq\\_QSxtosO6PwHAvgG6xaXvISMcpEN1lI&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020071602nasa-26r-3Demail-2D3870-26l-3D00a-2D916-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=ZDyxn7J0_q066FW6QU04ocXxsEld6gptjw8vHwwteDs&s=DeufmPovR6Dq_QSxtosO6PwHAvgG6xaXvISMcpEN1lI&e=>) (7/15) “Boeing Co (BA.N) said on Wednesday it would support International Space Station (ISS) operations through September 2024 as part of a \$916 million contract extension with NASA. Under the contract valued at about \$225 million annually, Boeing will provide engineering support services, resources and personnel for activities aboard the ISS and manage the station’s systems.”

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Washington Times <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020071602nasa-26r-3Demail-2D3870-26l-3D00b-2D42f-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=ZDyxn7J0\\_q066FW6QU04ocXxsEld6gptjw8vHwwteDs&s=DeufmPovR6Dq\\_QSxtosO6PwHAvgG6xaXvISMcpEN1lI&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020071602nasa-26r-3Demail-2D3870-26l-3D00b-2D42f-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=ZDyxn7J0_q066FW6QU04ocXxsEld6gptjw8vHwwteDs&s=DeufmPovR6Dq_QSxtosO6PwHAvgG6xaXvISMcpEN1lI&e=>)



8-mHkTTiYCEf5ROyus&m=ZDyxn7J0\_q066FW6QU04ocXxsEld6gptjw8vHwwteDs&s=EQ8QO-\_0yx\_v-1KcurzPiEnu9Sr5kwn6s57mR9\_9ZjA&e=> (7/14, Gorin) "ANALYSIS/OPINION: Amid the intermittent riots and looting; the disbanding of police departments; the increase in armed disagreements between citizens; a four-year coup; an economy in turmoil; and talk of a geographic separation between Americans who have a race-based view of the human condition and those who don't, one would think our country's current upheavals — unyielding even to a plague (itself partisan) — would see us wanting to reduce our headaches, perhaps by making nice at least in the international sphere. ... On June 13th, Space.com quoted Russian space chief Dmitry Rogozin: 'The Americans were 'pretty anxious about the fact that they were fully dependent on the reliability of the Russian Soyuz' during the nine years it has ferried NASA astronauts into orbit...He added that the Russians kept the human space program going for all space station partners, while cutting Russian crews and experiments ... (presumably, to allow Americans and ... Europeans, to take seats in the Soyuz).'"

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Aviation Week <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020071602nasa-26r-3Demail-2D3870-26l-3D00c-2D4eb-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=ZDyxn7J0\\_q066FW6QU04ocXxsEld6gptjw8vHwwteDs&s=Wp2jKx2BIAS8xsTQtYQnr--leqPU\\_C3tLTxSdZQ09MI&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020071602nasa-26r-3Demail-2D3870-26l-3D00c-2D4eb-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=ZDyxn7J0_q066FW6QU04ocXxsEld6gptjw8vHwwteDs&s=Wp2jKx2BIAS8xsTQtYQnr--leqPU_C3tLTxSdZQ09MI&e=>) (7/15) "The first Space Launch System (SLS) rocket is about halfway through an eight-part Green Run test program at NASA's Stennis Space Center in Mississippi, with a full-duration static..."

#### Boeing Awarded US\$916 Million Contract To Support The ISS Through 2024

New Atlas <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020071602nasa-26r-3Demail-2D3870-26l-3D00d-2D640-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=ZDyxn7J0\\_q066FW6QU04ocXxsEld6gptjw8vHwwteDs&s=JZKeeqSUsBMAWD6zFd7u1Fqj s-kT1WPs5yZ6yHQANIq&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020071602nasa-26r-3Demail-2D3870-26l-3D00d-2D640-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=ZDyxn7J0_q066FW6QU04ocXxsEld6gptjw8vHwwteDs&s=JZKeeqSUsBMAWD6zFd7u1Fqj s-kT1WPs5yZ6yHQANIq&e=>) (7/15, Szondy) "Boeing has been awarded a US\$916 million contract extension for continued support of the International Space Station through September 2024. Valued annually at US\$225 million, the agreement covers the provision of engineering support services, resources, and personnel for activities aboard the space station."

#### Watch Live: Spacewalkers In Home Stretch Of Multi-Year Upgrade To International Space Station

CBS News <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020071602nasa-26r-3Demail-2D3870-26l-3D00e-2D686-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=ZDyxn7J0\\_q066FW6QU04ocXxsEld6gptjw8vHwwteDs&s=KlZgz69WH3FZ9XUnPFuWIDJfn MOHaxsq0Q3aBgytCtU&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020071602nasa-26r-3Demail-2D3870-26l-3D00e-2D686-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=ZDyxn7J0_q066FW6QU04ocXxsEld6gptjw8vHwwteDs&s=KlZgz69WH3FZ9XUnPFuWIDJfn MOHaxsq0Q3aBgytCtU&e=>) (7/16, Harwood) "Now in the home stretch of a complex, multi-year upgrade, two space station astronauts readied tools and equipment for a spacewalk Thursday — the third of four spacewalks the current crew is carrying out to complete the replacement of aging batteries in the lab's solar power system. Station commander Chris Cassidy and astronaut Robert Behnken plan to begin the excursion around 7:35 a.m. EDT, switching their spacesuits to battery power while still inside the Quest airlock. That will officially kick off the sixth spacewalk, or EVA, so far this year. It's the 11th spacewalk devoted to battery replacement work since 2017."

#### Watch Neowise Comet Zip Past Earth In 'Beautiful' Video From The International Space Station

People <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-)

3D2020071602nasa-26r-3Demail-2D3870-26l-3D00f-2D787-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=ZDyxn7J0\_q066FW6QU04ocXxsEld6gptjw8vHwwteDs&s=07r1vIKYydB-4fXyORoy449aYfJ0ygzWZHy2vB9Kb5E&e=> (7/15, Mauch) "A three-mile wide comet is passing the Earth, lighting up the evening and early morning skies. Stunning new footage shows the comet, named Neowise, zipping past the Earth in this truly once-in-a-lifetime event – the comet takes roughly 6,800 years to complete its journey around the sun. Artist and scientist Seán Doran compiled hundreds of images from the NASA database to create his video of the comet, which he told CBS News showcases 'how beautiful the Earth appears when viewed from space.' Astronaut Bob Behnken also showed off the view of Neowise from space, sharing a photo from the International Space Station that displays 'Stars, cities, spaceships, and a comet!'"

#### NASA Astronauts To Complete Spacewalk

WESH-TV Orlando (FL) <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020071602nasa-26r-3Demail-2D3870-26l-3D010-2Dfd9-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=ZDyxn7J0\\_q066FW6QU04ocXxsEld6gptjw8vHwwteDs&s=YswJ9wPMv8yGvqrpolpnt\\_XM96bEolffNNNp3ZOI5s4&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020071602nasa-26r-3Demail-2D3870-26l-3D010-2Dfd9-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=ZDyxn7J0_q066FW6QU04ocXxsEld6gptjw8vHwwteDs&s=YswJ9wPMv8yGvqrpolpnt_XM96bEolffNNNp3ZOI5s4&e=>) (7/15) "NASA astronauts Bob Behnken and Chris Cassidy are set to complete a spacewalk outside of the International Space Station tomorrow. They're replacing aging nickel-hydrogen batteries that are there."

#### Fishcakes In Space? How One Biotech Startup Is Fermenting Far-Out Food

Forbes <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020071602nasa-26r-3Demail-2D3870-26l-3D011-2D925-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=ZDyxn7J0\\_q066FW6QU04ocXxsEld6gptjw8vHwwteDs&s=L2MnWbv3eR95D1Ri0NxrKG-OhpdDBa2d7LGzRP65tnc&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020071602nasa-26r-3Demail-2D3870-26l-3D011-2D925-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=ZDyxn7J0_q066FW6QU04ocXxsEld6gptjw8vHwwteDs&s=L2MnWbv3eR95D1Ri0NxrKG-OhpdDBa2d7LGzRP65tnc&e=>) (7/15, Cumbers) "With everything going on in the world right now, you might envy NASA astronauts Bob Behnken and Doug Hurley for leaving Planet Earth in May on a rocket ship. Well, your chance to leave may come sooner than you think: SpaceX's successful launch brings commercial space travel a little closer to reality. As technology advances, humans are likely to spend more and more time in space."

#### 5-Star Space Camp? Orbite Plans For Luxury Space Tourist Training

Forbes <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020071602nasa-26r-3Demail-2D3870-26l-3D012-2D3af-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=ZDyxn7J0\\_q066FW6QU04ocXxsEld6gptjw8vHwwteDs&s=2Y8ozrtZAYnhDIFISBbzAORlhfIW8hDAHJZLvO1kQ1s&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020071602nasa-26r-3Demail-2D3870-26l-3D012-2D3af-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=ZDyxn7J0_q066FW6QU04ocXxsEld6gptjw8vHwwteDs&s=2Y8ozrtZAYnhDIFISBbzAORlhfIW8hDAHJZLvO1kQ1s&e=>) (7/15, Stimac) "As children, many of us dream – or are lucky enough to attend – the popular Space Camp program based at the U.S. Space & Rocket Center in Huntsville, Alabama. There, young STEM-minded explorers learn about the science and technology needed for humans to visit space; some adults also attend through annual adult space camp and family programming. ... This news comes on the heels of the successful SpaceX and NASA DM-2 launch in late May, which Gaume considers a positive signal about the space tourism industry and imminent passenger flights."

#### Moon to Mars

#### Top Russian Space Official Dismisses NASA's Moon Plans, Considering A Lunar Base With China Instead

CNBC <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020071602nasa-26r-3Demail-2D3870-26l-3D013-2D56d-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=ZDyxn7J0\\_q066FW6QU04ocXxsEld6gptjw8vHwwteDs&s=j92VcXCVyLRvQrlxLNjD6Dyl-q9BT2IMbMjzUut4FTk&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020071602nasa-26r-3Demail-2D3870-26l-3D013-2D56d-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=ZDyxn7J0_q066FW6QU04ocXxsEld6gptjw8vHwwteDs&s=j92VcXCVyLRvQrlxLNjD6Dyl-q9BT2IMbMjzUut4FTk&e=>) (7/15, Sheetz, Dzhanova) “The head of Russia’s space organization criticized the current United States plan to return astronauts to the moon as ‘a big political project,’ saying his country is instead speaking with China about establishing a lunar base of operations. NASA last year announced its Artemis program, the agency’s plan to fulfill President Donald Trump’s order in 2017 to return Americans to the surface of the moon by 2024. Additionally, NASA in May unveiled the ‘Artemis Accords’ – a set of principles it seeks to use as the basis of international agreements with other countries about using and operating in space, especially as the U.S. returns to the moon.”

#### What Will Astronauts Need To Survive The Dangerous Journey To Mars?

Science News <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020071602nasa-26r-3Demail-2D3870-26l-3D014-2D1e8-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=ZDyxn7J0\\_q066FW6QU04ocXxsEld6gptjw8vHwwteDs&s=D0Yr463CPZsaFeTiBoeeERt5EwWesiWj\\_pzRjx3UW1s&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020071602nasa-26r-3Demail-2D3870-26l-3D014-2D1e8-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=ZDyxn7J0_q066FW6QU04ocXxsEld6gptjw8vHwwteDs&s=D0Yr463CPZsaFeTiBoeeERt5EwWesiWj_pzRjx3UW1s&e=>) (7/15, Temming) “On movie missions to Mars, getting there is the easy part. The Martian’s Mark Watney was fine until a dust storm left him fending for himself. Douglas Quaid’s jaunt to the Red Planet in Total Recall was smooth sailing until he came under fire at Martian customs and immigration. But in real life, just getting to Mars and back will be rife with dangers that have nothing to do with extreme weather or armed gunmen. ‘The mission to Mars is likely going to be four to six individuals [living] together in a can the size of a Winnebago for three years,’ says Leticia Vega, associate chief scientist for the NASA Human Research Program in Houston.”

#### Six Things To Know About The Ingenuity Mars Helicopter

Phys (UK) <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020071602nasa-26r-3Demail-2D3870-26l-3D015-2D3f3-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=ZDyxn7J0\\_q066FW6QU04ocXxsEld6gptjw8vHwwteDs&s=VhpuczXvEtU\\_fN66pG5emb2UjQ6UpelhzQVUwb3ojJo&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020071602nasa-26r-3Demail-2D3870-26l-3D015-2D3f3-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=ZDyxn7J0_q066FW6QU04ocXxsEld6gptjw8vHwwteDs&s=VhpuczXvEtU_fN66pG5emb2UjQ6UpelhzQVUwb3ojJo&e=>) (7/15) “When NASA’s Mars 2020 Perseverance rover launches from Cape Canaveral Air Force Station in Florida later this summer, an innovative experiment will ride along: the Ingenuity Mars Helicopter. Ingenuity may weigh only about 4 pounds (1.8 kilograms), but it has some outsize ambitions.”

#### University Of Colorado Announces New Hypersonics Initiative

Aerospace America <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020071602nasa-26r-3Demail-2D3870-26l-3D016-2D60e-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=ZDyxn7J0\\_q066FW6QU04ocXxsEld6gptjw8vHwwteDs&s=JqPKtrOUxvOThv6QAU\\_2zYDTK8m5r8Ju1CWVfVvMHwg&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020071602nasa-26r-3Demail-2D3870-26l-3D016-2D60e-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=ZDyxn7J0_q066FW6QU04ocXxsEld6gptjw8vHwwteDs&s=JqPKtrOUxvOThv6QAU_2zYDTK8m5r8Ju1CWVfVvMHwg&e=>) (7/15, Hofacker) “No single scientist or engineer, no matter how smart, could solve the challenges of controlled, maneuverable flight of an aircraft or returning spacecraft traveling at more than five times the speed of sound. Temperatures on the vehicles can soar past 2,000 degrees Celsius, and conventional control designs won’t work. ... In the short-term, Boyd said the research could contribute to the U.S. Department of Defense’s efforts to build and field hypersonic weapons, as well as lead to technologies for NASA’s Artemis program that seeks to return

humans to the moon by 2024.”

### NASA's First Lunar Habitat May Be An RV-like Rover Built By Toyota

Ars Technica <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020071602nasa-26r-3Demail-2D3870-26l-3D017-2Dd7f-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=ZDyxn7J0\\_q066FW6QU04ocXxsEld6gptjw8vHwwteDs&s=5p9deKMbxhSdUggdWaBklde7ka4LNOOnQ9K6qeRj0Mjc&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020071602nasa-26r-3Demail-2D3870-26l-3D017-2Dd7f-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=ZDyxn7J0_q066FW6QU04ocXxsEld6gptjw8vHwwteDs&s=5p9deKMbxhSdUggdWaBklde7ka4LNOOnQ9K6qeRj0Mjc&e=>) (7/15, Berger) “Last year Vice President Mike Pence directed NASA to return humans to the Moon by 2024. NASA has since been working hard toward this goal, creating the Artemis Program and issuing contracts for three different teams to begin developing lunar landers.”

### Solar System and Beyond

#### You Can See 5 Planets In The Sky This Month, NASA Reveals

ABC News <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020071602nasa-26r-3Demail-2D3870-26l-3D018-2D64e-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=ZDyxn7J0\\_q066FW6QU04ocXxsEld6gptjw8vHwwteDs&s=ZTIGc8T\\_AjgXGILhGiD10-Ud-FoDuaN5JA7\\_xjut6lg&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020071602nasa-26r-3Demail-2D3870-26l-3D018-2D64e-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=ZDyxn7J0_q066FW6QU04ocXxsEld6gptjw8vHwwteDs&s=ZTIGc8T_AjgXGILhGiD10-Ud-FoDuaN5JA7_xjut6lg&e=>) (7/15, Brooksbank) “If you’re looking to watch something out of this world while quarantined at home, turn off the TV and look up at the sky. Mercury, Venus, Mars, Jupiter and Saturn are all visible to the naked eye across the continental United States for the next two weeks, NASA’s Jet Propulsion Laboratory confirmed in a statement to ABC News.”

#### Here's How To See Five Planets And The Moon Without A Telescope On Sunday

CNET News <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020071602nasa-26r-3Demail-2D3870-26l-3D019-2Dec5-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=ZDyxn7J0\\_q066FW6QU04ocXxsEld6gptjw8vHwwteDs&s=R5mOrkx-vRX7I9F99mu8eckBhgkpfC-NPaXAIhPZETU&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020071602nasa-26r-3Demail-2D3870-26l-3D019-2Dec5-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=ZDyxn7J0_q066FW6QU04ocXxsEld6gptjw8vHwwteDs&s=R5mOrkx-vRX7I9F99mu8eckBhgkpfC-NPaXAIhPZETU&e=>) (7/15, Cooper) “Set your alarm and wake up early on Sunday, July 19. About 45 minutes before sunrise, you’ll be able to see five planets and the crescent moon without using a telescope. Mercury, Venus, Mars, Jupiter, and Saturn, as well as the moon, will all be visible. ... If you want more, you can also spot Uranus, Neptune, and Pluto in the sky between Venus and Jupiter, but you’ll need a telescope for those three. And as NASA points out, if you use your binoculars to see Jupiter, you may be able to see its four largest moons, Europa, Ganymede, Io, and Callisto.”

#### NASA And ESA To Reveal Closest Images Ever Taken Of The Sun

CBS News <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020071602nasa-26r-3Demail-2D3870-26l-3D01a-2D52a-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=ZDyxn7J0\\_q066FW6QU04ocXxsEld6gptjw8vHwwteDs&s=NADT67O1lr877hefV-FfOCdxmjSNkzHSh8kCvIRZ\\_hY&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020071602nasa-26r-3Demail-2D3870-26l-3D01a-2D52a-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=ZDyxn7J0_q066FW6QU04ocXxsEld6gptjw8vHwwteDs&s=NADT67O1lr877hefV-FfOCdxmjSNkzHSh8kCvIRZ_hY&e=>) (7/15, Lewis) “NASA and the European Space Agency (ESA) are releasing new images of the sun Thursday morning, bringing humans closer to our host star than ever before. The photos are the first captured by the Solar Orbiter, which launched earlier this year.”

#### NASA Set To Release Closest Ever Images Of The Sun

Fox News <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020071602nasa-26r-3Demail-2D3870-26l-3D01b-2D2cf-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=ZDyxn7J0\\_q066FW6QU04ocXxsEld6gptjw8vHwwteDs&s=gMT9fFDH7DF7d2wtkocQeecP4jrE487iz9pQJsomQh4&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020071602nasa-26r-3Demail-2D3870-26l-3D01b-2D2cf-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=ZDyxn7J0_q066FW6QU04ocXxsEld6gptjw8vHwwteDs&s=gMT9fFDH7DF7d2wtkocQeecP4jrE487iz9pQJsomQh4&e=>) (7/15, Rogers) "NASA and the European Space Agency are set to release the first close-up images of the sun from their joint Solar Orbiter mission. 'In mid-June, Solar Orbiter made its first close pass of the Sun following its Feb. 9 launch, turning on all 10 of its instruments together for the first time,' said NASA, in a statement on its website."

#### Comet NEOWISE: How To See It In Night Skies

New York Times <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020071602nasa-26r-3Demail-2D3870-26l-3D01c-2Dd89-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=ZDyxn7J0\\_q066FW6QU04ocXxsEld6gptjw8vHwwteDs&s=pz3lzdZeGjOg-5hP2bvcSz1pPVyv5QmwxmO5nXdSoQ&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020071602nasa-26r-3Demail-2D3870-26l-3D01c-2Dd89-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=ZDyxn7J0_q066FW6QU04ocXxsEld6gptjw8vHwwteDs&s=pz3lzdZeGjOg-5hP2bvcSz1pPVyv5QmwxmO5nXdSoQ&e=>) (7/15, Mann) "Enjoy it while you can. The frozen ball of ice won't return to the inner solar system for 6,800 years. Eager sky watchers are turning to the heavens as Comet NEOWISE, one of the brightest comets in a generation, starts climbing ever higher among the evening stars. ... Comet NEOWISE gets its name from NASA's Near-Earth Object Wide-field Infrared Survey Explorer (NEOWISE), a space-based infrared telescope dedicated to looking out for potentially hazardous asteroids and comets. Researchers who manage the observatory spotted the comet in March when it was headed in the direction of the sun."

#### Comet NEOWISE Spotted By More NASA Spacecraft (Video, Photos)

SPACE <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020071602nasa-26r-3Demail-2D3870-26l-3D01d-2Dfa8-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=ZDyxn7J0\\_q066FW6QU04ocXxsEld6gptjw8vHwwteDs&s=fZtSsKC42HC5KTJaCorumCkueZ9h8Nef-MJyyv30aYc&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020071602nasa-26r-3Demail-2D3870-26l-3D01d-2Dfa8-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=ZDyxn7J0_q066FW6QU04ocXxsEld6gptjw8vHwwteDs&s=fZtSsKC42HC5KTJaCorumCkueZ9h8Nef-MJyyv30aYc&e=>) (7/15, Wall) "NASA's Parker Solar Probe (PSP) isn't the only spacecraft doing some comet watching these days. PSP snapped a gorgeous image of the bright Comet NEOWISE on July 5, two days after the icy wanderer reached perihelion, its closest approach to the sun. The PSP photo clearly shows twin tails streaming from the comet, one made of dust and the other of ionized gas."

#### Good News: This Comet Won't Cause A Mass Extinction In 2020. Also, It's Really Pretty

NPR <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020071602nasa-26r-3Demail-2D3870-26l-3D01e-2D2fc-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=ZDyxn7J0\\_q066FW6QU04ocXxsEld6gptjw8vHwwteDs&s=ucU8LCXj-TUS2cAM1xnltvOzZf7taUUO7TKmPoeg6gQ&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020071602nasa-26r-3Demail-2D3870-26l-3D01e-2D2fc-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=ZDyxn7J0_q066FW6QU04ocXxsEld6gptjw8vHwwteDs&s=ucU8LCXj-TUS2cAM1xnltvOzZf7taUUO7TKmPoeg6gQ&e=>) (7/15, Brumfiel) "The first thing to know about a new comet that has appeared in the evening sky is that it's one big ice ball: about 5 kilometers (3.1 miles) across. ... Mainzer is principal investigator for a NASA mission known as NEOWISE that is seeking to spot comets and asteroids that could wipe out life as we know it on Earth."

#### NASA Panel On NEOWISE

KNBC-TV Los Angeles <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020071602nasa-26r-3Demail-2D3870-26l-3D01f-](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020071602nasa-26r-3Demail-2D3870-26l-3D01f-)

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3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-

mHkTTiYCEf5ROyus&m=ZDyxn7J0\_q066FW6QU04ocXxsEld6gptjw8vHwwteDs&s=eMPGahiOmE2H79aDXmwXu9GQtEsU4o-kiQTZehovDd0&e=> (7/15) "NASA is ready to answer your questions about comet NEOWISE. A panel of experts will take questions during a live streamed session today at noon."

#### How To Catch Neowise, The Brightest Comet In More Than 20 Years

CNET News <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020071602nasa-26r-3Demail-2D3870-26l-3D020-2D331-26t-](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020071602nasa-26r-3Demail-2D3870-26l-3D020-2D331-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-)

3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-

mHkTTiYCEf5ROyus&m=ZDyxn7J0\_q066FW6QU04ocXxsEld6gptjw8vHwwteDs&s=L30Wtcrx9R8UCzEquf0RuIBVN XxtpOt4EMDhC9LyTKk&e=> (7/15, Mack) "Comet Neowise is the most impressive comet in nearly 25 years, and it's visible now. After two other promising comets – Swan and Atlas – fizzled and faded away this year, Comet C/2020 F3 (aka Neowise) is already dazzling skywatchers, and the best views may be yet to come. .Emily Kramer is the co-investigator on the science team for NASA's Neowise spacecraft that discovered the comet. She told reporters Wednesday that it's rare for a comet to be bright enough to see with the naked eye."

#### Comet NEOWISE's Surprises Some Stargazers With Two Tails

Fox News <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020071602nasa-26r-3Demail-2D3870-26l-3D021-2Dbb9-26t-](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020071602nasa-26r-3Demail-2D3870-26l-3D021-2Dbb9-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-)

3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-

mHkTTiYCEf5ROyus&m=ZDyxn7J0\_q066FW6QU04ocXxsEld6gptjw8vHwwteDs&s=RFBabGqWPmnovkb2x5lqNelm A8Fm8V2DUDqO3vqLIL0&e=> (7/16, Stimson) "As stargazers try to catch a glimpse of NEOWISE as it soars across the nighttime sky, careful viewers may notice the comet has two tails trailing behind it. ... 'The lower tail, which appears broad and fuzzy, is the dust tail of comet NEOWISE – created when dust lifts off the surface of the comet's nucleus and trails behind the comet in its orbit,' NASA added in the statement."

#### Comet NEOWISE Spotted By NASA Spacecraft

USA Today <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020071602nasa-26r-3Demail-2D3870-26l-3D022-2D4a2-26t-](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020071602nasa-26r-3Demail-2D3870-26l-3D022-2D4a2-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-)

3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-

mHkTTiYCEf5ROyus&m=ZDyxn7J0\_q066FW6QU04ocXxsEld6gptjw8vHwwteDs&s=2jJLUpSYFWyh1JOr0hsgjob9Rk bd78H-dMbXdBaNqeY&e=> (7/15) "A newly discovered comet is streaking past Earth after buzzing the sun and expanding its tail. Comet NEOWISE is the brightest comet visible from the Northern Hemisphere in a quarter-century and was captured by NASA's spacecraft."

#### Comet NEOWISE May Have Sodium Tail, New Images Suggest

Fox News <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020071602nasa-26r-3Demail-2D3870-26l-3D023-2D908-26t-](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020071602nasa-26r-3Demail-2D3870-26l-3D023-2D908-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-)

3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-

mHkTTiYCEf5ROyus&m=ZDyxn7J0\_q066FW6QU04ocXxsEld6gptjw8vHwwteDs&s=1eWW4N2qHf9Yq0SI44bYbTg8 NZCBIB5R0lb20kln6tE&e=> (7/15, Ciaccia) "The NEWOWISE comet has excited researchers since it was first

discovered in March. Now, new images of the celestial object reveal it may have a sodium tail. The images, which were taken on July 8 by the Planetary Science Institute's Input/Output facility, appear to show atomic sodium, which could aid in having researchers learn more about the object, previously known as comet C/2020 F3, as well as other comets."

Comet Neowise Is Easily Visible In The Night Sky This Week. Here's When And Where To Look For It.

Business Insider <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020071602nasa-26r-3Demail-2D3870-26l-3D024-2Dd3c-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=ZDyxn7J0\\_q066FW6QU04ocXxsEld6gptjw8vHwwteDs&s=3h3PHF8GXqlu5DGYSL5qc-efJKzZl1nYrA2794nh0Ms&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020071602nasa-26r-3Demail-2D3870-26l-3D024-2Dd3c-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=ZDyxn7J0_q066FW6QU04ocXxsEld6gptjw8vHwwteDs&s=3h3PHF8GXqlu5DGYSL5qc-efJKzZl1nYrA2794nh0Ms&e=>) (7/15, McFall-Johnsen) "This month offers your only chance to see a 3-mile-wide comet called Neowise as it rockets past Earth. The ball of space ice and its brightly colored tails are expected to reach peak brightness this week. ... The comet is expected to get closest to our planet on July 23, approaching within about 64 million miles, according to NASA. But this week, from now through Sunday, may provide the best opportunity to spot it in the sky."

UFO Hunter Says He's Finally Found Proof Of Aliens, And They're On The Sun

BGR <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020071602nasa-26r-3Demail-2D3870-26l-3D025-2D1aa-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=ZDyxn7J0\\_q066FW6QU04ocXxsEld6gptjw8vHwwteDs&s=GJmK\\_-GCNaC\\_UsFUxrrdJrlugxoQFPua2ixcesM5pVc&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020071602nasa-26r-3Demail-2D3870-26l-3D025-2D1aa-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=ZDyxn7J0_q066FW6QU04ocXxsEld6gptjw8vHwwteDs&s=GJmK_-GCNaC_UsFUxrrdJrlugxoQFPua2ixcesM5pVc&e=>) (7/15, Wehner) "A UFO hunter claims to have found evidence of an unidentified object hanging out very close to the Sun. Images from NASA's SOHO observatory show what appears to be a curved solar flare, but little more."

Subaru Telescope And New Horizons Explore The Outer Solar System

Phys (UK) <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020071602nasa-26r-3Demail-2D3870-26l-3D026-2D319-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=ZDyxn7J0\\_q066FW6QU04ocXxsEld6gptjw8vHwwteDs&s=oaQpp521nb8FwtTZ6wCA3yUpqxzvxp-2ONi3d7NZ134&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020071602nasa-26r-3Demail-2D3870-26l-3D026-2D319-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=ZDyxn7J0_q066FW6QU04ocXxsEld6gptjw8vHwwteDs&s=oaQpp521nb8FwtTZ6wCA3yUpqxzvxp-2ONi3d7NZ134&e=>) (7/15) "Collaborative observations with NASA's New Horizons mission have been ongoing at the Subaru Telescope since May 2020. Hyper Suprime-Cam (HSC), the wide field camera mounted on the prime focus of the Subaru Telescope, is used for the observations to search for target candidates for New Horizons' next observations. Astronomers from Japan are participating in the observation team together with ones from the New Horizons mission."

5 Years After Its Pluto Flyby, New Horizons Spacecraft Forges Ahead

CNN <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020071602nasa-26r-3Demail-2D3870-26l-3D027-2Db08-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=ZDyxn7J0\\_q066FW6QU04ocXxsEld6gptjw8vHwwteDs&s=sM96Mwa9LH3hy9WyKYcAw-oM-wG5fmQ7UE3Ok0Vz7fI&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020071602nasa-26r-3Demail-2D3870-26l-3D027-2Db08-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=ZDyxn7J0_q066FW6QU04ocXxsEld6gptjw8vHwwteDs&s=sM96Mwa9LH3hy9WyKYcAw-oM-wG5fmQ7UE3Ok0Vz7fI&e=>) (7/15, Strickland) "When NASA's New Horizons spacecraft flew by Pluto five years ago this week, it captured detailed views of the mysterious icy dwarf planet on the edge of our solar system. Since then, data gathered about Pluto and its largest moon, Charon, have been used to gain insight about these planetary bodies 4 billion miles away from Earth."

## Cases Of Black Hole Mistaken Identity

Phys (UK) <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020071602nasa-26r-3Demail-2D3870-26l-3D028-2D905-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=ZDyxn7J0\\_q066FW6QU04ocXxsEld6gptjw8vHwwteDs&s=KkVhJ7kWg0u9W5EwceVDJ-itv5yJeljLSZ7P\\_sVc7N4&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020071602nasa-26r-3Demail-2D3870-26l-3D028-2D905-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=ZDyxn7J0_q066FW6QU04ocXxsEld6gptjw8vHwwteDs&s=KkVhJ7kWg0u9W5EwceVDJ-itv5yJeljLSZ7P_sVc7N4&e=>) (7/15) “Astronomers have discovered one type of growing supermassive black hole masquerading as another, thanks to a suite of telescopes including NASA’s Chandra X-ray Observatory. The true identity of these black holes helps solve a long-running mystery in astrophysics. The misidentified black holes are from a survey known as the Chandra Deep Field-South (CDF-S), the deepest X-ray image ever taken.”

## Thermonuclear Blast Sends Star Hurtling Across Our Galaxy

Fox News <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020071602nasa-26r-3Demail-2D3870-26l-3D029-2Da97-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=ZDyxn7J0\\_q066FW6QU04ocXxsEld6gptjw8vHwwteDs&s=b3cuJumYr7JuLEEMo8Kyji8hfgY\\_QyGzLLoEQeDyots&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020071602nasa-26r-3Demail-2D3870-26l-3D029-2Da97-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=ZDyxn7J0_q066FW6QU04ocXxsEld6gptjw8vHwwteDs&s=b3cuJumYr7JuLEEMo8Kyji8hfgY_QyGzLLoEQeDyots&e=>) (7/15, Rogers) “Researchers have found evidence of a star blasting itself out of its orbit with another star in a ‘partial supernova’ – now hurtling across the Milky Way. ... Scientists were also able to identify carbon, sodium, and aluminum using NASA’s Hubble space telescope.”

## Space Tech

### Starship SN5 Set For A Static Fire Followed Shortly By A 150-Meter Hop Attempt

NASA Space Flight <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020071602nasa-26r-3Demail-2D3870-26l-3D02a-2D341-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=ZDyxn7J0\\_q066FW6QU04ocXxsEld6gptjw8vHwwteDs&s=ISSRdnuRikUcl461-5yREmTI3NjVPFqreCSixGfTXw&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020071602nasa-26r-3Demail-2D3870-26l-3D02a-2D341-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=ZDyxn7J0_q066FW6QU04ocXxsEld6gptjw8vHwwteDs&s=ISSRdnuRikUcl461-5yREmTI3NjVPFqreCSixGfTXw&e=>) (7/15, Baylor) “Starship SN5 is finally set to begin Raptor engine testing this weekend after a successful cryogenic proof test on July 1. If the static fire test is successful, it will clear the way for a 150-meter hop test as early as next week. The 150-meter hop will be the first test flight of a full-scale Starship tank section.”

### Northrop Grumman Successfully Launches NROL-129 From MARS

NASA Space Flight <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020071602nasa-26r-3Demail-2D3870-26l-3D02b-2D49b-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=ZDyxn7J0\\_q066FW6QU04ocXxsEld6gptjw8vHwwteDs&s=8\\_ONHcxgtLJEXskYOqey6svk0SdroLxk\\_eKZ9ITqASg&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020071602nasa-26r-3Demail-2D3870-26l-3D02b-2D49b-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=ZDyxn7J0_q066FW6QU04ocXxsEld6gptjw8vHwwteDs&s=8_ONHcxgtLJEXskYOqey6svk0SdroLxk_eKZ9ITqASg&e=>) (7/15, Gebhardt, Navin) “Northrop Grumman launched the classified NROL-129 mission, consisting of four payloads designed and built by the National Reconnaissance Office. Liftoff targeted Wednesday, 15 July in a launch window that opened at 09:00 EDT (13:00 UTC), with T-0 coming 46 minutes later after a delay relating to wayward boats in the Range. The mission was declared a success.”

### Northrop Grumman Minotaur 4 Launches NRO Mission, Its First From Virginia Spaceport



Space News <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020071602nasa-26r-3Demail-2D3870-26l-3D02c-2De81-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=ZDyxn7J0\\_q066FW6QU04ocXxsEld6gptjw8vHwwteDs&s=hwrYxyLNorm5GyiaLUnmROZIF4bJ9GIVdgiW9WsxPU&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020071602nasa-26r-3Demail-2D3870-26l-3D02c-2De81-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=ZDyxn7J0_q066FW6QU04ocXxsEld6gptjw8vHwwteDs&s=hwrYxyLNorm5GyiaLUnmROZIF4bJ9GIVdgiW9WsxPU&e=>) (7/15, Erwin) "A Northrop Grumman Minotaur 4 solid propellant rocket launched the NROL-129 mission for the National Reconnaissance Office on July 15 at 9:46 a.m. Eastern from NASA's Wallops Flight Facility in Virginia. The launch originally scheduled for 9:00 a.m. was delayed by the presence of fishing boats in restricted waters offshore that had to be cleared from the area."

#### NRO Satellites Launched From NASA's Virginia Facility

UPI <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020071602nasa-26r-3Demail-2D3870-26l-3D02d-2Dcb0-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=ZDyxn7J0\\_q066FW6QU04ocXxsEld6gptjw8vHwwteDs&s=akrsi9kPK22QCMKUyoDipairvxSzxEXXqjXh-t\\_I0Zs&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020071602nasa-26r-3Demail-2D3870-26l-3D02d-2Dcb0-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=ZDyxn7J0_q066FW6QU04ocXxsEld6gptjw8vHwwteDs&s=akrsi9kPK22QCMKUyoDipairvxSzxEXXqjXh-t_I0Zs&e=>) (7/15, Adamczyk) "The first launch on Wednesday morning of a Minotaur IV rocket from Wallops Island, Va., was a success, the Air Force announced. Northrop Grumman launched four classified remote sensing payloads into low earth orbit Wednesday at 9:46 a.m. for the National Reconnaissance Office, the agency's first use of the Minotaur IV, officials said in a press release. ... It was the first use of the rocket by NASA's Wallops Island facility in eastern Virginia, formally called the Mid-Atlantic Regional Spaceport, and the NRO's 54th launch, since 1996."

Various

#### How The Space Sector Is Responding To The Killing Of George Floyd

Space News <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020071602nasa-26r-3Demail-2D3870-26l-3D02e-2Ded7-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=ZDyxn7J0\\_q066FW6QU04ocXxsEld6gptjw8vHwwteDs&s=mziczjSzej5u-41\\_QZUq94REiGs2jwvE\\_NsiEaNXwnMQ&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020071602nasa-26r-3Demail-2D3870-26l-3D02e-2Ded7-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=ZDyxn7J0_q066FW6QU04ocXxsEld6gptjw8vHwwteDs&s=mziczjSzej5u-41_QZUq94REiGs2jwvE_NsiEaNXwnMQ&e=>) (7/15, Werner, Henry) "For many, the Black Lives Matter protests occurring while NASA celebrated a historic achievement were reminiscent of the Apollo era. In July 1969, civil rights protesters marched outside the Kennedy Space Center the day before Apollo 11 launched to the moon. NASA's historic achievement occurred against the backdrop of a nation struggling to address discrimination against Black Americans."

#### 'A Day In Space': How To Watch The National Space Society's Virtual Event Thursday

SPACE <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020071602nasa-26r-3Demail-2D3870-26l-3D02f-2D081-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=ZDyxn7J0\\_q066FW6QU04ocXxsEld6gptjw8vHwwteDs&s=dYb8hQv43PkgY0EPKAn0NXEuXEwhGy-Dyo9s1paXUBo&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020071602nasa-26r-3Demail-2D3870-26l-3D02f-2D081-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=ZDyxn7J0_q066FW6QU04ocXxsEld6gptjw8vHwwteDs&s=dYb8hQv43PkgY0EPKAn0NXEuXEwhGy-Dyo9s1paXUBo&e=>) (7/15, Howell) "The National Space Society (NSS) will hold 'A Day in Space' Thursday (July 16) virtually on multiple platforms, featuring keynote speakers such as Apollo 11 astronaut Buzz Aldrin and exoplanet scientist Sara Seager. ... The conference starts at 11 a.m. EDT (1500 GMT) and major topics include the 50th anniversary of NASA's Apollo program that landed astronauts on the moon between 1969 and 1972, the Mariner 4 Mars mission that wrongly led some scientists to believe the Red Planet had no evidence of water in its history, the

New Horizons mission to Pluto and the outer solar system, and examining the business of space (including diversity, inclusion, space science and medicine).”

#### No, NASA Did Not Just ‘Uncover’ The 13th Zodiac Sign

Vice <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020071602nasa-26r-3Demail-2D3870-26l-3D030-2D18f-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=ZDyxn7J0\\_q066FW6QU04ocXxsEld6gptjw8vHwwteDs&s=ogdSoO8M5f2I6yOqRZI6gvsZJCLzN2VxxWPqSQz6Lmo&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020071602nasa-26r-3Demail-2D3870-26l-3D030-2D18f-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=ZDyxn7J0_q066FW6QU04ocXxsEld6gptjw8vHwwteDs&s=ogdSoO8M5f2I6yOqRZI6gvsZJCLzN2VxxWPqSQz6Lmo&e=>) (7/15, Sanjay) “We’ve all got someone--or are someone--who’ve dedicated a part of their lives to astrology and horoscopes, breaking up with their Gemini partner because how can their stubborn, grounded Taurus selves even deal with all that frenetic energy of the Gemini. ...A four-year-old post from NASA that comes to haunt us once every few months is going around on Twitter and news sites. Again.”

#### Personality Traits And Meaning Of New Star Sign Ophiuchus

Daily Mirror (UK) <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020071602nasa-26r-3Demail-2D3870-26l-3D031-2D35f-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=ZDyxn7J0\\_q066FW6QU04ocXxsEld6gptjw8vHwwteDs&s=MTLmdCfwoKUjgiLdWXq0tdVsfkIEPpUNp6foYja-MSc&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020071602nasa-26r-3Demail-2D3870-26l-3D031-2D35f-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=ZDyxn7J0_q066FW6QU04ocXxsEld6gptjw8vHwwteDs&s=MTLmdCfwoKUjgiLdWXq0tdVsfkIEPpUNp6foYja-MSc&e=>) (7/15, Bennett) “NASA has uncovered a 13th zodiac sign, meaning your star sign might now be different. The new sign was already known to astrologers, but was left out of the original chart by ancient Babylonians as it didn’t fit neatly into their 12 equal parts chart.”

#### NASA’s New Star Sign Means You’ve Been Reading The Wrong Horoscope For Years

Daily Mirror (UK) <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020071602nasa-26r-3Demail-2D3870-26l-3D032-2D592-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=ZDyxn7J0\\_q066FW6QU04ocXxsEld6gptjw8vHwwteDs&s=QUD2CpY4hECUbiFCMeJU7vNBliHBztCoqPCfJ9DRIQo&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020071602nasa-26r-3Demail-2D3870-26l-3D032-2D592-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=ZDyxn7J0_q066FW6QU04ocXxsEld6gptjw8vHwwteDs&s=QUD2CpY4hECUbiFCMeJU7vNBliHBztCoqPCfJ9DRIQo&e=>) (7/15, Hicks) “Astrology lovers may have a new star sign after NASA experts identified a zodiac that has been ‘ignored’ for nearly 3,000 years. The ancient Babylonians discovered a 13th constellation called Ophiuchus – but chose not to include it in their zodiac calendar and it has been ignored ever since.”

#### These NASA Space Ponchos Boldly Go Where No Blanket Brand Has Gone Before

Forbes <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020071602nasa-26r-3Demail-2D3870-26l-3D033-2Db91-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=ZDyxn7J0\\_q066FW6QU04ocXxsEld6gptjw8vHwwteDs&s=ET0yYkoYgp7nQgvNnfaZW-PMtodw3MvRoGpz3yU8XHY&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020071602nasa-26r-3Demail-2D3870-26l-3D033-2Db91-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=ZDyxn7J0_q066FW6QU04ocXxsEld6gptjw8vHwwteDs&s=ET0yYkoYgp7nQgvNnfaZW-PMtodw3MvRoGpz3yU8XHY&e=>) (7/15, London) “It’s not every day blanket companies produce sell-out fashion collections, but that day has indeed come to Rumpl—the cult-favorite blanket brand based in Portland, Oregon—with their latest success, the NASA capsule collection. Designed to mark the 50th anniversary of the Apollo 13 mission, the collectible NASA designs offered three spaced-up iterations of Rumpl’s signature products—the NanoLoft® Puffy Blanket, Original Puffy Blanket and the NanoLoft® Puffy Poncho. All of which sold out within days of the capsule’s launch.”

Other

#### Virgin Galactic Names Disney International Parks Head As Next CEO

The Wall Street Journal <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020071602nasa-26r-3Demail-2D3870-26l-3D034-2D9df-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=ZDyxn7J0\\_q066FW6QU04ocXxsEld6gptjw8vHwwteDs&s=t3uFOXL2mFPnX1jp0nyvSOFZN0D-HT03ncs4uFO6-hU&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020071602nasa-26r-3Demail-2D3870-26l-3D034-2D9df-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=ZDyxn7J0_q066FW6QU04ocXxsEld6gptjw8vHwwteDs&s=t3uFOXL2mFPnX1jp0nyvSOFZN0D-HT03ncs4uFO6-hU&e=>) (7/15, Armental) reports Virgin Galactic has named former Walt Disney International Parks head Michael Colglazier as its new CEO, effective July 20.

#### Virgin Galactic Just Hired A Disney Theme Park Executive To Be CEO And Run Its Space Tourism Business

Business Insider <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020071602nasa-26r-3Demail-2D3870-26l-3D035-2D29a-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=ZDyxn7J0\\_q066FW6QU04ocXxsEld6gptjw8vHwwteDs&s=Ywxd-2EAmSugofJ2ysPOpr\\_a6KI\\_ZFmrKvumhdWIJZY&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020071602nasa-26r-3Demail-2D3870-26l-3D035-2D29a-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=ZDyxn7J0_q066FW6QU04ocXxsEld6gptjw8vHwwteDs&s=Ywxd-2EAmSugofJ2ysPOpr_a6KI_ZFmrKvumhdWIJZY&e=>) (7/15, Mosher) “Virgin Galactic, the suborbital rocket company founded by Richard Branson in 2004, has brought on a former Disney boss as CEO to operate a real-life ‘Space Mountain’ ride. Effective Monday, Michael Colglazier — the now-former president and managing director of Disney Parks International — will step into his new job as CEO of Virgin Galactic, according to a press release sent to Business Insider on Wednesday. Colglazier is also joining the publicly traded company’s board of directors.”

#### Virgin Galactic Ropes In Disney Veteran As CEO

Reuters <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020071602nasa-26r-3Demail-2D3870-26l-3D036-2D788-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=ZDyxn7J0\\_q066FW6QU04ocXxsEld6gptjw8vHwwteDs&s=W3z\\_joRCVW7BibUoXW45w886Tb9XzjY4XBq2mTRtYSl&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020071602nasa-26r-3Demail-2D3870-26l-3D036-2D788-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=ZDyxn7J0_q066FW6QU04ocXxsEld6gptjw8vHwwteDs&s=W3z_joRCVW7BibUoXW45w886Tb9XzjY4XBq2mTRtYSl&e=>) (7/15) “Billionaire Richard Branson’s Virgin Galactic Holdings Inc (SPCE.N) on Wednesday named Walt Disney Co (DIS.N) executive Michael Colglazier as its new chief executive officer, sending its shares up 4.3% in extended trade. Colglazier, who was previously president and managing director at Disney Parks International, will replace George Whitesides, who joined the company in 2010 as its first CEO.”

#### Virgin Galactic Picks Disney Veteran As CEO Before First Flight

Bloomberg <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020071602nasa-26r-3Demail-2D3870-26l-3D037-2D96e-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=ZDyxn7J0\\_q066FW6QU04ocXxsEld6gptjw8vHwwteDs&s=3ozFIX6ER3yj4gflaAug61QgVeL\\_RPlewzjFwB\\_kNNU&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020071602nasa-26r-3Demail-2D3870-26l-3D037-2D96e-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=ZDyxn7J0_q066FW6QU04ocXxsEld6gptjw8vHwwteDs&s=3ozFIX6ER3yj4gflaAug61QgVeL_RPlewzjFwB_kNNU&e=>) (7/15, Bachman) “Virgin Galactic Holdings Inc. is turning to a customer-experience specialist from the Disney theme park world, naming Michael Colglazier as chief executive officer of the space tourism company to succeed George Whitesides. Colglazier, who oversaw multiple Walt Disney Co. theme parks, will take the job as of July 20, Virgin Galactic said in a statement Wednesday. He’ll also join the company’s board. The departing CEO, Whitesides, will remain at the company as chief space officer.”

## Virgin Galactic Changing CEOs, Bringing On Disney's Michael Colglazier

CNBC <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020071602nasa-26r-3Demail-2D3870-26l-3D038-2Da07-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=ZDyxn7J0\\_q066FW6QU04ocXxsEld6gptjw8vHwwteDs&s=oH0jCEM55VjUFplkRsGsz-tGX5RjLErty27r1xYXzuc&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020071602nasa-26r-3Demail-2D3870-26l-3D038-2Da07-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=ZDyxn7J0_q066FW6QU04ocXxsEld6gptjw8vHwwteDs&s=oH0jCEM55VjUFplkRsGsz-tGX5RjLErty27r1xYXzuc&e=>) (7/15, Sheetz) “Virgin Galactic announced on Wednesday that George Whitesides would step aside as CEO, with the space tourism venture appointing former Disney executive Michael Colglazier. Whitesides will stay on with the company in a new role, serving as its chief space officer. The changeover comes as Virgin Galactic closes in on launching its first customer flights to the edge of space, with a handful of final test spaceflights expected in the coming months.”

## UAE Mars Mission From Japan Delayed Again By Weather

Associated Press <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020071602nasa-26r-3Demail-2D3870-26l-3D039-2D2cc-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=ZDyxn7J0\\_q066FW6QU04ocXxsEld6gptjw8vHwwteDs&s=N7WDYHjmTY-KU6X0hmPU8qi8E5VYTAYhdZmDgJlnx6E&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020071602nasa-26r-3Demail-2D3870-26l-3D039-2D2cc-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=ZDyxn7J0_q066FW6QU04ocXxsEld6gptjw8vHwwteDs&s=N7WDYHjmTY-KU6X0hmPU8qi8E5VYTAYhdZmDgJlnx6E&e=>) (7/15, Yamaguchi) “The launch of a United Arab Emirates Mars orbiter, already delayed two days, has been postponed further due to bad weather at the Japanese launch site. The orbiter named Amal, or Hope, is the Arab world’s first interplanetary mission. The launch, initially scheduled for Wednesday from the Tanegashima Space Center in southern Japan, had already been postponed until Friday. It was delayed further on Wednesday to an unspecified date, said Mitsubishi Heavy Industries, the provider of the H-IIA rocket.”

## Moon May Be 85 Million Years Younger Than Thought

Sci-News <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020071602nasa-26r-3Demail-2D3870-26l-3D03a-2Dde3-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=ZDyxn7J0\\_q066FW6QU04ocXxsEld6gptjw8vHwwteDs&s=8awZau\\_StjcBy52Ww9l8KuiU\\_p-0WE6jRuc9dUqE\\_j8&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020071602nasa-26r-3Demail-2D3870-26l-3D03a-2Dde3-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=ZDyxn7J0_q066FW6QU04ocXxsEld6gptjw8vHwwteDs&s=8awZau_StjcBy52Ww9l8KuiU_p-0WE6jRuc9dUqE_j8&e=>) (7/15) “Earth’s only natural satellite formed 4.425 billion years ago – around 85 million years later than previous estimates, according to a new modeling study by researchers from the German Aerospace Center (DLR), the Technische Universität Berlin and the Institut für Planetologie at the University of Münster. When the Moon formed into a sphere approximately 1,700 km in radius 4.425 billion years ago, its interior heated up considerably due to the energy released when it accreted.”

## Japanese Capsule Carrying Pieces Of Asteroid Ryugu Will Land On Earth Dec. 6

SPACE <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020071602nasa-26r-3Demail-2D3870-26l-3D03b-2D103-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=ZDyxn7J0\\_q066FW6QU04ocXxsEld6gptjw8vHwwteDs&s=brhfbNpJo5XnfhvZLVIXZh\\_D79lEdM4TgFJ0bUvmK8Y&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020071602nasa-26r-3Demail-2D3870-26l-3D03b-2D103-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=ZDyxn7J0_q066FW6QU04ocXxsEld6gptjw8vHwwteDs&s=brhfbNpJo5XnfhvZLVIXZh_D79lEdM4TgFJ0bUvmK8Y&e=>) (7/15, Wall) “The pristine asteroid material collected by a Japanese spacecraft last year will come down to Earth less than five months from now, if all goes according to plan. Samples of the 3,000-foot-wide (900 meters) near-Earth asteroid Ryugu snagged by Japan’s Hayabusa2 probe are scheduled to land in the South Australian Outback on Dec. 6 local time, officials of both nations’ space agencies announced yesterday (July 14).”

## China's Tianwen-1 Mars Spacecraft: Everything We Know About The Daring Mission

CNET News <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020071602nasa-26r-3Demail-2D3870-26l-3D03c-2D3cb-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=ZDyxn7J0\\_q066FW6QU04ocXxsEld6gptjw8vHwwteDs&s=IMbVUzN0n\\_w-tOW5OFG-P7Jd1I8KjYZ30DIK1OJuQw8&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020071602nasa-26r-3Demail-2D3870-26l-3D03c-2D3cb-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=ZDyxn7J0_q066FW6QU04ocXxsEld6gptjw8vHwwteDs&s=IMbVUzN0n_w-tOW5OFG-P7Jd1I8KjYZ30DIK1OJuQw8&e=>) (7/15, Ryan) "Sometime in late July (or early August, perhaps) a Long March 5 rocket will blast off from China's Wenchang Satellite Launch Center on Hainan Island, in the South China Sea. It will be carrying three robotic explorers, designed and engineered by China's space agency, on a historic voyage to Mars. The mission is known as Tianwen-1, taken from the poem of the same name and loosely translated as 'questions to Heaven.'"

## China Is About To Launch A Secretive Mission To Mars. Here's What We Know (And Don't Know) So Far

Forbes <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020071602nasa-26r-3Demail-2D3870-26l-3D03d-2De67-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=ZDyxn7J0\\_q066FW6QU04ocXxsEld6gptjw8vHwwteDs&s=5Fm\\_6AMmpqXBHF0qsnVuH9aENC-6Nj5WDMvGhbk9mis&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020071602nasa-26r-3Demail-2D3870-26l-3D03d-2De67-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=ZDyxn7J0_q066FW6QU04ocXxsEld6gptjw8vHwwteDs&s=5Fm_6AMmpqXBHF0qsnVuH9aENC-6Nj5WDMvGhbk9mis&e=>) (7/15, O'Callaghan) "In a matter of days, China will launch its first-ever mission to Mars – an exciting attempt to place a rover on the surface of the Red Planet. But while we know about some aspects of the mission, others remain a mystery. Between Monday, July 20 and Friday, July 25, China is expected to launch its Tianwen-1 mission to Mars on a Long March 5 rocket. The mission is taking place in a launch window to Mars that occurs every 26 months, when our two planets align for easy traversal, reaching a closest distance of about 58 million kilometers."

## Details On SpaceX Starlink Beta Emerge Along With Photos Of User Terminals

Ars Technica <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020071602nasa-26r-3Demail-2D3870-26l-3D03e-2D1a9-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=ZDyxn7J0\\_q066FW6QU04ocXxsEld6gptjw8vHwwteDs&s=\\_78Pea\\_Xrh251Jhn6gtTKi7mFphWfSB4LeEIR3egqyg&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020071602nasa-26r-3Demail-2D3870-26l-3D03e-2D1a9-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=ZDyxn7J0_q066FW6QU04ocXxsEld6gptjw8vHwwteDs&s=_78Pea_Xrh251Jhn6gtTKi7mFphWfSB4LeEIR3egqyg&e=>) (7/15, Brodtkin) "As SpaceX readies beta-testing for its Starlink broadband service, Internet users have dug into the Starlink website and found new details on the upcoming beta tests and images of the user terminals that will be installed outside customers' homes. Reddit users yesterday said they did some data mining of the Starlink support website and main site, uncovering an FAQ about the beta trials, terms of service, and images of the satellite dish from different angles."

## Dish, DirecTV Join Forces To Oppose SpaceX's Starlink

Law360 <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020071602nasa-26r-3Demail-2D3870-26l-3D03f-2De37-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=ZDyxn7J0\\_q066FW6QU04ocXxsEld6gptjw8vHwwteDs&s=ULAzLvGcA5VTwiJNytJobeDmPyxQ6Jz0OeSslgFOXZo&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020071602nasa-26r-3Demail-2D3870-26l-3D03f-2De37-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=ZDyxn7J0_q066FW6QU04ocXxsEld6gptjw8vHwwteDs&s=ULAzLvGcA5VTwiJNytJobeDmPyxQ6Jz0OeSslgFOXZo&e=>) (7/15) "Rival satellite programmers Dish and DirecTV have found common ground in opposing SpaceX's latest round of proposed tweaks to a constellation of broadband satellites, telling the Federal Communications Commission that further changes could 'imperil' TV service. In Monday and Tuesday filings with the commission, the two pay-TV providers argued that SpaceX has strayed so far from its originally proposed project that

it risks interfering with satellite programming transmissions in the 12 GHz band.”

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## **[EXTERNAL] NASA Morning Briefing for Thursday, June 24, 2021**

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Richard Branson And Jeff Bezos Will Fly To Space At Their Own Risk. Does That Make It Right For Everyone?

#### Washington Post

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021062402nasa&r=email-cf10&l=003-62e&t=c&data=04|01|randy.c.cruz@nasa.gov|dc14dfb8f25644058da208d936ff27d5|7005d45845be48ae8140d43da96dd17b|0|0|637601291784204462|Unknown|TWfPbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQljojV2luMzliLCJBTil6lk1haWwiLCJXVCI6Mn0=|1000&sdata=3t99XyiaEVnYk+tP/CMe1j+w7Ephj/MqIDpL520/51l=&reserved=0>> (6/23) "Want to jump out of a perfectly good airplane and hope the parachute opens? Be our guest. Or try bungee jumping? Sure, go for it. And, yes, feel free to strap yourself into that roller coaster and loop-de-loop until you turn green. ... DeFazio is also taking aim at the FAA's dual mandate to both regulate and promote the space industry, which he said is a conflict of interest that could endanger the public. The FAA, he said in an interview, 'should not be promoting commercial space. NASA can promote commercial space. The Commerce Department can promote commercial space. The FAA's job is to regulate in the public interest.'"

Opinion: Americans Should Worry More About China Than Russia.

The New Space Race Shows Why. Washington Post (6/23) "The salute was carried live to 1 billion people but went unnoticed by most of the world. Three astronauts aboard China's new rival to the International Space Station gave military salutes to President Xi Jinping during a videoconference broadcast Wednesday on state television. ... NASA

Administrator Bill Nelson held up a photograph of China's Mars rover during a recent House hearing as he requested more funding for the Human Landing System."

#### NASA Chief Reminds Congress They're The Ones Not Funding A Lunar Lander

Ars Technica

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"NASA Administrator Bill Nelson said the space agency expects a decision from the US Government Accountability Office on a lunar lander protest by August 4. This would seem to set a firm timeline after which NASA can move forward with its Artemis program. Nelson's comments came in response to members of the US House Science, Space, and Technology Committee asking for specifics on Artemis, which NASA intends to use to return humans to the Moon and eventually go on to Mars."

#### Space Force Set To Defend Deep Space

Washington Times

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"U.S. military space forces are preparing to defend systems beyond Earth's orbit in areas extending to the moon and beyond, according to a report by the Air Force Research Laboratory. Defending cislunar space — the volume of space outside of geosynchronous Earth orbit and within the moon's gravitational pull — is outlined in a memorandum of understanding between the Space Force and NASA. The report was made public this week after China and Russia announced plans for a joint international research station to be built on the moon."

Flight

#### DLR-NASA Flight Tests Show SAFs Can Reduce Climate Impact Of Contrails

Aviation Week

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"Cleaner-burning sustainable fuels can reduce aircraft contrail cloudiness and their contribution to aviation's climate impact, joint research by NASA and German aerospace center DLR has concluded. Burning low-aromatic sustainable aviation fuel (SAF) can result in a 50-70% reduction in soot-particle emissions and the resulting ice crystal concentrations, reducing the warming effect from contrail cirrus clouds, according to research published on May 17 in Nature Communications journal Earth & Environment."

Earth

#### 'Strawberry' Supermoon To Adorn Night Sky Wednesday Through Friday

Washington Post

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“The first full moon of the summer is set to rise gracefully in the eastern sky Wednesday through Friday evenings and will appear a little plumper and brighter than normal. The June ‘Strawberry Moon’ is marginally considered a supermoon, according to NASA, the last in a series. Supermoons are those full moons that pass the Earth near the closest point in their monthly orbit (known as perigee) and can appear up to 30 percent brighter and 14 percent bigger than full moons that pass at their greatest distance (known as apogee).”

Last Supermoon Of 2021 Is This Week

NBC News

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“A ‘strawberry’ moon is rising. June’s full moon will light up the sky Thursday, marking the last supermoon of the year and capping off a series of recent skywatching events that included a lunar eclipse and a ‘ring of fire’ solar eclipse. ... Thursday’s full moon will be at peak illumination at 2:40 p.m. ET, but the lunar spectacle won’t be visible for several hours, until the moon rises over the horizon in the eastern skies. The moon will subsequently appear full through early Saturday, according to NASA.”

How To See Tomorrow’s Strawberry Moon, The Last Supermoon Of 2021

CNET News

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“What a year it’s been for moon viewing. After May’s ‘super flower blood moon’ eclipse, we’re returning to a straight-up full moon on Thursday. It will be the last supermoon of 2021. ... ‘For 2021, some publications consider the four full Moons from March to June, some the three full Moons from April to June, and some only the two full Moons in April and May as supermoons,’ NASA program executive Gordon Johnston said in April.”

The Strawberry Moon: How, When To Watch It

Fox News

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“Stargazers around the world will be able to enjoy the glow of the Strawberry Moon on Thursday night. According to NASA, the ‘marginal supermoon’ will appear opposite the sun in Earth-based longitude at 2:40 p.m. ET for much of the Earth, though it won’t be visible until it appears above the horizon.”

## Humans in Space

### Richard Branson And Jeff Bezos Will Fly To Space At Their Own Risk. Does That Make It Right For Everyone?

Washington Post

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021062402nasa&r=email-cf10&l=00b-46b&t=c&data=04|01|randy.c.cruz@nasa.gov|dc14dfb8f25644058da208d936ff27d5|7005d45845be48ae8140d43da96dd17b|0|0|637601291784234329|Unknown|TWfPbGZsb3d8eyJWljoimC4wLjAwMDAiLCJQljoiv2luMzliLCJBTil6lk1haWwiLCJXVCI6Mn0=|1000&sdata=rQCU7LlqB7vDZ4K0BIYYoY/1qUlt4Q0d2gZEgoToYF0=&reserved=0>> (6/23) “Want to jump out of a perfectly good airplane and hope the parachute opens? Be our guest. Or try bungee jumping? Sure, go for it. And, yes, feel free to strap yourself into that roller coaster and loop-de-loop until you turn green. ... DeFazio is also taking aim at the FAA’s dual mandate to both regulate and promote the space industry, which he said is a conflict of interest that could endanger the public. The FAA, he said in an interview, ‘should not be promoting commercial space. NASA can promote commercial space. The Commerce Department can promote commercial space. The FAA’s job is to regulate in the public interest.’”

### SpaceX Sends Thousands Of Baby Squid To Space Station

The Hill

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021062402nasa&r=email-cf10&l=00c-086&t=c&data=04|01|randy.c.cruz@nasa.gov|dc14dfb8f25644058da208d936ff27d5|7005d45845be48ae8140d43da96dd17b|0|0|637601291784234329|Unknown|TWfPbGZsb3d8eyJWljoimC4wLjAwMDAiLCJQljoiv2luMzliLCJBTil6lk1haWwiLCJXVCI6Mn0=|1000&sdata=4kl9CYFGySi/930ZWJqESvw48tXDySw0UgOfLaoVu60=&reserved=0>> (6/23, Spencer) “One dozen bobtail squid that were raised at the Kewalo Marine Laboratory at the University of Hawaii boarded the International Space Station after catching a ride from a SpaceX resupply mission, according to The Guardian. The space mission is part of University of Hawaii doctoral student Jamie Foster’s research on the effects of spaceflight on squid, The Honolulu Star-Advertiser reported, to help determine how long humans can remain healthy in space.”

### Tide To Develop First Laundry Detergent For Astronauts’ Clothing On Space Station

SPACE

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### Equilibrium — Presented By NextEra Energy — A New Final Frontier: Washing Dirty Laundry In Space

The Hill

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0a6&t=c&data=04|01|randy.c.cruz@nasa.gov|dc14dfb8f25644058da208d936ff27d5|7005d45845be48ae8140d43da96dd17b|0|0|637601291784244287|Unknown|TWfPbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiv2luMzliLCJBTil6lk1haWwiLCJXVCI6Mn0=|1000&sdata=EOOc0e/NL1xpjQiGH7cNI9qJ5mlspoDNCmeXkpcruHI=&reserved=0> (6/23, Elbein, Udasin) "NASA is teaming up with Procter & Gamble Co. to develop a washer-dryer combo that could eventually operate on the moon or even Mars using minimal amounts of water and detergent, the Associated Press reported. Up until this point, astronauts dealt with their tons of dirty laundry each year by throwing it away: launching their garments to burn up in the atmosphere aboard discarded cargo ships, according to the AP."

#### NASA And Tide Team Up To Deal With Dirty Laundry In Space

BGR

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bf2&t=c&data=04|01|randy.c.cruz@nasa.gov|dc14dfb8f25644058da208d936ff27d5|7005d45845be48ae8140d43da96dd17b|0|0|637601291784254241|Unknown|TWfPbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiv2luMzliLCJBTil6lk1haWwiLCJXVCI6Mn0=|1000&sdata=9AYIQXaQFxxOJHzstfPNMQx9EOtA1FKJ5zFM1/A0RG0=&reserved=0> (6/23)

"Humans have been living in space for years, but it took endless research and planning to make that possible. Everything we take for granted on the surface of the planet, where we have gravity and resources to accommodate our every whim, has to be engineered to work in space. Scientists have yet to solve every problem required to make living in space for extended periods comfortable to astronauts and affordable for the governments and companies that might be footing the bill."

#### NASA Looking To Solve Dirty Laundry Issue In Space

CBS News

<[https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021062402nasa&r=email-cf10&l=010-](https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021062402nasa&r=email-cf10&l=010-cb5&t=c&data=04|01|randy.c.cruz@nasa.gov|dc14dfb8f25644058da208d936ff27d5|7005d45845be48ae8140d43da96dd17b|0|0|637601291784254241|Unknown|TWfPbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiv2luMzliLCJBTil6lk1haWwiLCJXVCI6Mn0=|1000&sdata=bdvJTFIgm9dTAiCvhCmoYa1C3ydH1NPYTgHKICqA7Y=&reserved=0>)

cb5&t=c&data=04|01|randy.c.cruz@nasa.gov|dc14dfb8f25644058da208d936ff27d5|7005d45845be48ae8140d43da96dd17b|0|0|637601291784254241|Unknown|TWfPbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiv2luMzliLCJBTil6lk1haWwiLCJXVCI6Mn0=|1000&sdata=bdvJTFIgm9dTAiCvhCmoYa1C3ydH1NPYTgHKICqA7Y=&reserved=0> (6/23)

"How do astronauts do laundry in space? They don't. They wear their underwear, gym clothes and everything else until they can't take the filth and stink anymore, then junk them. NASA wants to change that. CBS Los Angeles has the details."

#### On Sale: \$125,000 Balloon Trips To The Edge Of Space

CNN

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936&t=c&data=04|01|randy.c.cruz@nasa.gov|dc14dfb8f25644058da208d936ff27d5|7005d45845be48ae8140d43da96dd17b|0|0|637601291784264196|Unknown|TWfPbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiv2luMzliLCJBTil6lk1haWwiLCJXVCI6Mn0=|1000&sdata=sfTvG0o0ywUpaUc6IO7ui7KmYJulDPcqBF8531AIOhc=&reserved=0> (6/23) "If you're trying to avoid airborne viruses, heading to a near vacuum might not be the worst idea. A Florida company is planning to fly passengers to the edge of space in a high-tech version of a hot air balloon, with a pilot and up to eight travelers riding in a pressurized capsule suspended from an enormous blimp."

#### Florida-Based Space Balloon Company Launches Ticket Sales

UPI

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8cb&t=c&data=04|01|randy.c.cruz@nasa.gov|dc14dfb8f25644058da208d936ff27d5|7005d45845be48ae8140d43da96dd17b|0|0|637601291784264196|Unknown|TWFPbGZsb3d8eyJWljoimc4wLjAwMDAiLCJQljoiv2luMzliLCJBTil6lk1haWwiLCJXVCI6Mn0=|1000&sdata=kpGHKe+GCeWbqQXD2tpQM+/ZSoOKL+ROyKjO/jFDL8o=&reserved=0> (6/23, Brinkmann) “A new space tourism company began to sell tickets Wednesday for six-hour balloon rides to the stratosphere starting in 2024. The price of a seat: \$125,000. The company, Florida-based Space Perspective, plans up to 25 flights in the first year into what is the second major layer of the Earth’s atmosphere and extends to about 31 miles, or more than 163,000 feet, above the planet’s surface.”

A Startup Offering To Take Tourists To Space In A Ship Lifted By An Enormous Balloon Is Selling Tickets For \$125,000 A Ride

Insider

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97f&t=c&data=04|01|randy.c.cruz@nasa.gov|dc14dfb8f25644058da208d936ff27d5|7005d45845be48ae8140d43da96dd17b|0|0|637601291784264196|Unknown|TWFPbGZsb3d8eyJWljoimc4wLjAwMDAiLCJQljoiv2luMzliLCJBTil6lk1haWwiLCJXVCI6Mn0=|1000&sdata=rxURA3uw8R7osWw1E8JxXdsSqqQCL0b64+LOdeXivRM=&reserved=0> (6/23)

“Forget airplanes, cruises, and hotels. Space Perspective wants to take you on a \$125,000 luxury trip to the ‘edge of space,’ according to the company. Spaceship Neptune. ... But don’t picture your typical NASA rocket ship.”

More Than 22,000 Apply To Join European Space Agency’s Astronaut Corps, A New Record

SPACE

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475&t=c&data=04|01|randy.c.cruz@nasa.gov|dc14dfb8f25644058da208d936ff27d5|7005d45845be48ae8140d43da96dd17b|0|0|637601291784274152|Unknown|TWFPbGZsb3d8eyJWljoimc4wLjAwMDAiLCJQljoiv2luMzliLCJBTil6lk1haWwiLCJXVCI6Mn0=|1000&sdata=ajntwxdf2G1O5REmhaVjQO8kJ5cGqWr2z9gu+BuAT3U=&reserved=0> (6/23,

Pultarova) “The European Space Agency (ESA) received a record number of applications for its recently closed call for new astronauts, with more than 22,000 people applying — nearly three times as many applicants as in the previous astronaut recruitment round in 2008. In addition to that, ESA representatives said in a press briefing Wednesday (June 23) that a record number of women had applied: 5,419 compared to 1,287 in 2008.”

European Space Agency Seeks Astronaut Applicants With Physical Disabilities

New York Daily News

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de2&t=c&data=04|01|randy.c.cruz@nasa.gov|dc14dfb8f25644058da208d936ff27d5|7005d45845be48ae8140d43da96dd17b|0|0|637601291784274152|Unknown|TWFPbGZsb3d8eyJWljoimc4wLjAwMDAiLCJQljoiv2luMzliLCJBTil6lk1haWwiLCJXVCI6Mn0=|1000&sdata=w6lmKohlBMW23sNEHI7DomCIX3q6K37KNOtIN18sHKE=&reserved=0> (6/24,

Braine) “European Space Agency seeks astronaut applicants with physical disabilities”

Europe Seeks Disabled Astronauts, More Women In Space

AP

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287&t=c&data=04|01|randy.c.cruz@nasa.gov|dc14dfb8f25644058da208d936ff27d5|7005d45845be48ae8140d43da96dd17b|0|0|637601291784284107|Unknown|TWFPbGZsb3d8eyJWljoimc4wLjAwMDAiLCJQljoiv2luMzliLCJBTil6lk1haWwiLCJXVCI6Mn0=|1000&sdata=G0HDfburKta4+u1yawlC4uGGua30A8Jux+pnYI3R XM8=&reserved=0> (6/23) “The

European Space Agency says it was ‘blown away’ by the record number of applicants — more than 22,000 — hoping to become the continent’s next generation of space travelers, including more women than ever and some 200 people with disabilities. In releasing the results of a new recruitment drive aimed at more astronaut diversity, the agency acknowledged Wednesday that it still has work to do on gender balance.”

#### Thousands Of People Want To Send Jeff Bezos Into Space Forever

The Hill

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#### The Date Of Jeff Bezos’ Trip To Space Isn’t A Coincidence — It’s The Anniversary Of The Apollo 11 Mission To The Moon

Insider

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021062402nasa&r=email-cf10&l=018-6b5&t=c&data=04|01|randy.c.cruz@nasa.gov|dc14dfb8f25644058da208d936ff27d5|7005d45845be48ae8140d43da96dd17b|0|0|637601291784294068|Unknown|TWfPbGZsb3d8eyJWljoimc4wLjAwMDAiLCJQljoiv2luMzliLCJBTil6lk1haWwiLCJXVCI6Mn0=|1000&sdata=R0jN+OI1FrYsJkttGk9zP2PF7tP8aC6vgjMMA02K7Z8=&reserved=0>> (6/23, Hartmans) “Jeff Bezos’ trip aboard a Blue Origin rocket next month will take place on a fortuitous day in space history. The 11-minute trip 62 miles above Earth will take Bezos to the edge of space. Inside Blue Origin’s New Shepard spacecraft, Bezos, his brother Mark, the unnamed tourist who paid \$28 million for the opportunity, and a fourth passenger will have three minutes to float around the spacecraft and view Earth from afar — or gaze into the depths of outer space.”

#### NASA, Tide Partner On Detergent For Astronauts

KCBS-TV Los Angeles

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#### Moon to Mars

Opinion: Americans Should Worry More About China Than Russia. The New Space Race Shows Why.

Washington Post

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021062402nasa&r=email-cf10&l=01a-57e&t=c&data=04|01|randy.c.cruz@nasa.gov|dc14dfb8f25644058da208d936ff27d5|7005d45845be48ae8140d43da96dd17b|0|0|637601291784294068|Unknown|TWfPbGZsb3d8eyJWljoimc4wLjAwMDAiLCJQljoiv2luMzliLCJBTil6lk1ha>>



WwiLCJXVCI6Mn0=|1000&sdata=BYzxRorqXv9fcjAf+VUpeZlg2jK2zHn+vOp0eTHQEAAQ=&reserved=0> (6/23) “The salute was carried live to 1 billion people but went unnoticed by most of the world. Three astronauts aboard China’s new rival to the International Space Station gave military salutes to President Xi Jinping during a videoconference broadcast Wednesday on state television. ... NASA Administrator Bill Nelson held up a photograph of China’s Mars rover during a recent House hearing as he requested more funding for the Human Landing System.”

#### NASA Chief Reminds Congress They’re The Ones Not Funding A Lunar Lander

Ars Technica

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021062402nasa&r=email-cf10&l=01b-6d6&t=c&data=04|01|randy.c.cruz@nasa.gov|dc14dfb8f25644058da208d936ff27d5|7005d45845be48ae8140d43da96dd17b|0|0|637601291784304023|Unknown|TWFPbGZsb3d8eyJWljoimc4wLjAwMDAiLCJQljoiv2luMzliLCJBTil6lk1haWwiLCJXVCI6Mn0=|1000&sdata=HjHEF4VtabB3Dc7u+oX8LAOZqZAyyNIwC2ITjdXIN+I=&reserved=0>> (6/23, Berger) “NASA Administrator Bill Nelson said the space agency expects a decision from the US Government Accountability Office on a lunar lander protest by August 4. This would seem to set a firm timeline after which NASA can move forward with its Artemis program. Nelson’s comments came in response to members of the US House Science, Space, and Technology Committee asking for specifics on Artemis, which NASA intends to use to return humans to the Moon and eventually go on to Mars.”

#### NASA Chief Promises More Moon, Mars Cost, Schedule Details

Aviation Week

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#### NASA, Nelson Push For Annual Moon Landings For ‘A Dozen Years’

UPI

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#### Nelson Says Artemis Plans Pending Decision On GAO Protest

Space News

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WwiLCJXVCI6Mn0=|1000&sdata=D5GTT+dtBHRvMNxI4x6ma0K8SpXtLz0c/BXmjofF/w=&reserved=0> (6/23, Foust) “NASA Administrator Bill Nelson told a House committee June 23 that NASA is awaiting a decision from the Government Accountability Office on protests of the agency’s lunar lander contract before releasing more details on plans to return humans to the moon. Testifying before the House Science Committee, Nelson said those plans will depend on whether the GAO upholds protests filed by Blue Origin and Dynetics of NASA’s award of a single Human Landing System (HLS) contract to SpaceX in April. The GAO has until Aug. 4 to rule on the two protests.”

#### Martian Dust Could End NASA’s InSight Mission In A Matter Of Months

Gizmodo

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021062402nasa&r=email-cf10&l=01f-1d8&t=c&data=04|01|randy.c.cruz@nasa.gov|dc14dfb8f25644058da208d936ff27d5|7005d45845be48ae8140d43da96dd17b|0|0|637601291784313967|Unknown|TWFpbGZsb3d8eyJWljoimc4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ik1haWwiLCJXVCI6Mn0=|1000&sdata=1tlm2z5b4D8XmtXleZekT0kiTJZAw966B1JKdboqBQE=&reserved=0>> (6/23, Dvorsky) “Dwindling access to power, the result of dust settling onto solar panels, is threatening to end NASA’s InSight Mars mission by April of next year. News of InSight’s worrisome condition was announced on June 21 at a meeting of NASA’s Mars Exploration Program Analysis Group, as SpaceNews reports. The steady buildup of dust on the probe’s solar arrays has been ‘considerable,’ as Bruce Banerdt, principal investigator for the InSight mission at NASA’s Jet Propulsion Laboratory, explained during the meeting.”

#### Masten Delays First Lunar Lander Mission

Space News

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#### Mars Ingenuity Helicopter Marks The Successful Completion Of Its Eighth Test Flight

SlashGear

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#### NASA’s Mars Helicopter Has Now Flown Successfully 8 Times, Beaming Back Photos That Look Like A Sci-fi Film

Insider

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#### Lockheed Martin To Build Aeroshell For Mars Sample Retrieval Lander

New Atlas

<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021062402nasa&r=email-cf10&l=023-bdb&t=c&data=04|01|randy.c.cruz@nasa.gov|dc14dfb8f25644058da208d936ff27d5|7005d45845be48ae8140d43da96dd17b|0|0|637601291784333884|Unknown|TWFpbGZsb3d8eyJWljoimc4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6lk1haWwiLCJXVCi6Mn0=|1000&sdata=SM7oS36OpUa17zNveat8s6KyxBnRvbf6jJz7bXj3Z58=&reserved=0> (6/23, Szondy) “Lockheed Martin has been selected by NASA’s Jet Propulsion Laboratory (JPL) in Pasadena, California to design and build the aeroshell and heat shield for the space agency’s Mars Sample Retrieval Lander, which will help return the first Martian samples to Earth. Penciled in for a July 2026 launch, the Mars Sample Retrieval Lander is part of a tag-team string of Mars Sample Return missions to bring bits of Mars back to Earth for analysis. The first phase is already underway as NASA’s Perseverance rover traverses the Martian surface in search of signs of ancient microbial life. As the nuclear-powered rover collects soil and rock samples, these will be packaged and left behind in caches.”

#### NASA Administrator Discusses Budget At Hearing

WKMG-TV Orlando (FL)

<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021062402nasa&r=email-cf10&l=024-ea3&t=c&data=04|01|randy.c.cruz@nasa.gov|dc14dfb8f25644058da208d936ff27d5|7005d45845be48ae8140d43da96dd17b|0|0|637601291784343845|Unknown|TWFpbGZsb3d8eyJWljoimc4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6lk1haWwiLCJXVCi6Mn0=|1000&sdata=bcaZWxYilvz9Z2RevuNvzQnP0hR3o/IL2iYoZcpevdU=&reserved=0> (6/23) “Former Florida Senator and current NASA Administrator Bill Nelson is on Capitol Hill fighting to get more money for space exploration.”

#### China Plans To Send Its First Crewed Mission To Mars In 2033 And Build A Base There

CNBC

<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021062402nasa&r=email-cf10&l=025-a10&t=c&data=04|01|randy.c.cruz@nasa.gov|dc14dfb8f25644058da208d936ff27d5|7005d45845be48ae8140d43da96dd17b|0|0|637601291784343845|Unknown|TWFpbGZsb3d8eyJWljoimc4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6lk1haWwiLCJXVCi6Mn0=|1000&sdata=W3w6QWK2khod6PaoGW226o4syCKwswKSf8dEkZbxubc=&reserved=0> (6/24, ) “China plans to send its first crewed mission to Mars in 2033 as it continues to boost its space ambitions in a battle with the U.S. The world’s second-largest economy is planning regular crewed missions to the Red Planet.”

#### China Plans Its First Crewed Mission To Mars In 2033

Reuters

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3b1&t=c&data=04|01|randy.c.cruz@nasa.gov|dc14dfb8f25644058da208d936ff27d5|7005d45845be48ae8140d43da96dd17b|0|0|637601291784343845|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTil6Ik1haWwiLCJXVCi6Mn0=|1000&sdata=mdDm1UUTACUbvvmYNwsEVov117kqldiaYZoR4yy5O3s=&reserved=0> (6/24, Staff) “China aims to send its first crewed mission to Mars in 2033, with regular follow-up flights to follow, under a long-term plan to build a permanently inhabited base on the Red Planet and extract its resources. The ambitious plan, which will intensify a race with the United States to plant humans on Mars, was disclosed in detail for the first time after China landed a robotic rover on Mars in mid-May in its inaugural mission to the planet.”

## Solar System and Beyond

### NASA Working To Resolve Computer Glitch, Return Hubble Space Telescope To Service

CBS News

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### Hubble Space Telescope’s 1980s Computer Glitch May Run Deeper Than NASA Thought

SPACE

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### To Fix The Hubble Space Telescope, NASA May Have To Rely On A Computer That Hasn’t Turned On Since 2009

Insider

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## As Teams Work To Bring Hubble Back Online, New Science Highlights Missing Dark Matter In Galaxy

NASA Space Flight

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## Hubble Trouble: NASA Can’t Figure Out What’s Causing Computer Issues On The Telescope

NPR

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## NASA’s Aging Hubble Space Telescope Stuck In Safe Mode As Glitch Fixes Falter

CNET News

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## Hubble Space Telescope Finds Galaxy With Weirdly Little Dark Matter

SPACE

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the shadowy, invisible substance. Dark matter makes up the lion's share of a galaxy's mass, and it's critical to hold a galaxy's stars, gas and dust together. So, when scientists find evidence twice over that a certain galaxy seems to have a tiny fraction of the dark matter it ought to have, astronomers sit up and pay attention. And that's where recent observations with the venerable Hubble Space Telescope come in."

#### These Potentially Habitable Exoplanets Can See Earth As It Evolves

CNN

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#### There Is Only One Other Planet In Our Galaxy That Could Be Earth-Like, Say Scientists

Forbes

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#### How NASA's Parker Solar Probe Used Venus To Fly Closer To The Sun

ZDNet

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#### Venus Surprisingly Active Beneath The Surface, Scientists Say

CNET News

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Mack) "Something is moving on Venus – or rather beneath the planet's surface. It's not life, but it does suggest our neighboring world is a little less static than many previously believed. A team of global researchers analyzed NASA radar images from the Magellan mission to Venus and found big blocks of its lithosphere, or crust, appeared to have moved."

#### A New Analysis Of The Surface Of Venus Hints The Planet Might Be Geologically Active

SlashGear

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#### How Lobster Eyes Can Help Astronomers Get A Wider View Of The Cosmos

Astronomy News

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#### Citizen Scientists Discover 2 Gas Giants Around A Distant Sun-like Star

SPACE

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#### Aliens From 1,715 Stars Could've Seen Earth Over The Past 5,000 Years, Study Suggests

Gizmodo

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#### NASA Develops Balloon To Study Venus

KOKH-TV Oklahoma City

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Space Tech

No content.

Various

#### America Needs A Whole-of-government Approach To Studying Unidentified Aerial Phenomena

The Hill

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#### Space Force Set To Defend Deep Space

Washington Times

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moon and beyond, according to a report by the Air Force Research Laboratory. Defending cislunar space — the volume of space outside of geosynchronous Earth orbit and within the moon’s gravitational pull — is outlined in a memorandum of understanding between the Space Force and NASA. The report was made public this week after China and Russia announced plans for a joint international research station to be built on the moon.”

#### Fairborn Defense Contractor Wins \$233M In Contract Boosting NASA

Dayton (OH) Daily News

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#### See The Hubble Space Telescope’s Iconic Pillars Of Creation In Lego Form

SPACE

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Other

#### European Space Agency Is Wary Of Partnering With China

Aviation Week

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#### SpaceX’s Starlink Satellite Internet Could Achieve Global Coverage By September

Engadget

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WwiLCJXVCI6Mn0=|1000&sdata=ka4qc/+evDWWnGcSvbPTzH0slgvBGYoBAHzZjfu2/yl=&reserved=0> (6/23, Moon)  
“The Starlink satellite internet service may have the capability to provide users in far-flung regions around the world with high-speed connections before the year ends. SpaceX has deployed 1,800 or so satellites for the Starlink constellation so far. While that number’s just a fraction of the 12,000 satellites regulators already approved for the constellation, it’s enough to enable worldwide coverage. According to Reuters, SpaceX president Gwynne Shotwell has revealed at a web conference that the service will be able to offer continuous global coverage once all 1,800 satellites reach their operational orbit. The aerospace corporation expects that to happen as soon as September this year.”

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## **[EXTERNAL] NASA Morning Briefing for Thursday, May 27, 2021**

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### Editor's Note

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#### NASA Tests Techniques For X-59 Low-Boom Flights

##### Aviation Week

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 "Validating the quiet supersonic performance of NASA's X-59 QueSST low-boom flight demonstrator will require precise measurement of the shock waves generated by the aircraft and how they propagate through the atmosphere to the ground. To that end, the agency has flight tested a visual navigation..."

#### Interview With NASA Administrator On Climate Change

##### Spectrum News 13 (FL)

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a7a&t=c&data=04|01|randy.c.cruz@nasa.gov|f1f75d9155b64c9a4e7408d920fe3510|7005d45845be48ae8140d43da96dd17b|0|0|637577098457080778|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQljojV2luMzliLCJBTiI6Ikh1haWwiLCJXVCi6Mn0=|1000&sdata=s7FdUCkHsWmR5wjiVI2xHVQHAzVqKKxVh6hOSIFOac0=&reserved=0> (5/26)

"NASA is all about space exploration. But now its mission is expanding to tackle a growing problem on our planet. Spectrum News 13's Samantha Joe Roth speaks with NASA's new administrator about how the agency plans to tackle climate change."

#### NASA, Industry Face Challenges In Free Flyer Development

Aviation Week

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2f9&t=c&data=04|01|randy.c.cruz@nasa.gov|f1f75d9155b64c9a4e7408d920fe3510|7005d45845be48ae8140d43da96dd17b|0|0|637577098457080778|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQljojV2luMzliLCJBTiI6Ikh1haWwiLCJXVCi6Mn0=|1000&sdata=Evq13M9zmZTETCmacSjeLgghd5vi94N7UKI8rEBGr0=&reserved=0> (5/26)

"Questions surround NASA's strategy for transitioning human activities in low Earth orbit from the aging International Space Station (ISS) to multiple commercial free flyers, with potential industry partners curious about the agency's funding commitment. NASA plans a two-phase, multiyear effort to..."

#### U.S Firms GM, Lockheed Aim For The Moon With Lunar Rover Venture

Reuters

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Staff) "U.S. firms General Motors (GM) and Lockheed Martin Corp will develop a vehicle to drive NASA astronauts around on the moon's surface, they said on Wednesday, competing for a space project that could also promote their brands on earth. GM and Lockheed said they would collaborate to make a battery-powered, autonomous Lunar Terrain Vehicle for NASA's Artemis lunar landing program, which aims to return U.S. astronauts to the moon as early as 2024."

#### Capital Calls: Jeff Bezos And Elon Musk's D.C. Space Battle

Reuters

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193&t=c&data=04|01|randy.c.cruz@nasa.gov|f1f75d9155b64c9a4e7408d920fe3510|7005d45845be48ae8140d43da96dd17b|0|0|637577098457090735|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQljojV2luMzliLCJBTiI6Ikh1haWwiLCJXVCi6Mn0=|1000&sdata=sfzA3CBEF/AQ5QTJyRx1j1tTpgHMFBQBZYz/D3yPISg=&reserved=0> (5/26)

"COUNTDOWN. A fight between Elon Musk and Jeff Bezos over whose rocket firm will dominate the space race is about egos as big as the universe. But a battle in Washington, D.C. over funding for the National Aeronautics and Space Administration shows the contest centers just as much on earthly influence. NASA wants to go to the moon by 2024, and Musk's SpaceX and Bezos' Blue Origin both thought they would win funding to do so. But in April, the agency made a surprise decision to pick only SpaceX, citing a budget shortfall and technical factors. Blue Origin challenged the choice as unfair and risky."

#### Opinion: We Need To Put Science At The Center Of The UFO Question

Washington Post

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SolarWinds Hack ‘A Big Wakeup Call,’ NASA’s Human Spaceflight Chief Says

SPACE

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Flight

NASA Tests Techniques For X-59 Low-Boom Flights

Aviation Week

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Watch NASA Prepare For Our Flying-car Future

Mashable

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Research Center and hopped into its 10-story vertical motion simulator to see what it would be like to fly around San Francisco in one of these vehicles.”

Earth

Interview With NASA Administrator On Climate Change

Spectrum News 13 (FL)

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“NASA is all about space exploration. But now its mission is expanding to tackle a growing problem on our planet. Spectrum News 13’s Samantha Joe Roth speaks with NASA’s new administrator about how the agency plans to tackle climate change.”

Lunar Eclipse: Photos Of The Super Flower Blood Moon May 26

Florida Today

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“Sky watchers in some parts of the country witnessed one of the greatest sky spectacles of the year Wednesday morning as a full moon, supermoon and lunar eclipse happened at the same time, creating the super flower blood moon. ... ‘Because the orbit of the moon is not a perfect circle, the moon is sometimes closer to the Earth than at other times during its orbit,’ according to NASA.”

Total Lunar Eclipse Turns Moon Red: Relive The ‘Super Flower Blood Moon’

CNET News

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“A total lunar eclipse turned our celestial neighbor a rusty red on May 26. If you were in Africa or Europe, or simply slept through the show, you can still enjoy the images and livestream reruns of the ‘super flower blood moon’ and its lovely lava-like color. ... The astronauts on the International Space Station got a look at the supermoon and the eclipse from their vantage point in orbit around Earth. And photographers down on Earth also snapped some stunners.”

Stunning Lunar Eclipse Photos And Videos Show 2021 Supermoon

Newsweek

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aWwiLCJXVCI6Mn0=|1000&sdata=sSC4N9JbSZpAczRWhrfUMtztDvPGAKmDTcOAJbTP/a0=&reserved=0> (5/26, Palmer) "Images and videos have been shared online of the rare 'Super Flower Blood Moon' which is appearing in the night sky this week. ... The Earth's atmosphere then filters the light as it passes, giving the moon a dark reddish glow. According to NASA, the more dust or clouds in Earth's atmosphere there are during the eclipse, the redder the moon will appear."

#### Rare "Super Flower Blood Moon" Lunar Eclipse Captured In Stunning Photos From Around The World

CBS News

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#### Blood Moon Lunar Eclipse Enthralls Viewers

Fox News

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#### Rising Global Temperatures 'Inexorably Closer' To Climate Tipping Point

Reuters

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#### NASA To Design New 'Earth System Observatory' As Part Of National Push Against Climate Change

SPACE

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aWwiLCJXVCI6Mn0=|1000&sdata=I9KWI6VBc4OdhHUQGhHH5AoCXYoD/4DzFMnWfx/nGb0=&reserved=0> (5/26, Gohd) “NASA will design new, Earth-focused missions to support our growing understanding of climate change and provide important information to those on Earth impacted by its effects, the agency announced May 24 as part of a new Biden administration plan to ‘enhance climate resilience.’ The Biden administration, prior to meeting with climate and homeland security team members on May 24, announced earlier that day in a White House release that it will support the development of NASA’s new ‘Earth System Observatory’ — a series of next-generation climate data systems that will be used to better track climate change and its impact on communities around the world.”

## Humans in Space

### NASA, Industry Face Challenges In Free Flyer Development

#### Aviation Week

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“Questions surround NASA’s strategy for transitioning human activities in low Earth orbit from the aging International Space Station (ISS) to multiple commercial free flyers, with potential industry partners curious about the agency’s funding commitment. NASA plans a two-phase, multiyear effort to...”

## This Is What It’s Like To Walk In Space

#### CNN

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## The Astronauts On Challenger Made Up The Perfect Crew

#### Air & Space Smithsonian Magazine

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021052702nasa&r=email-af44&l=016-1a8&t=c&data=04|01|randy.c.cruz@nasa.gov|f1f75d9155b64c9a4e7408d920fe3510|7005d45845be48ae8140d43da96dd17b|0|0|637577098457150475|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQljojV2luMzliLCJBTil6lk1haWwiLCJXVCI6Mn0=|1000&sdata=ojSDJYIX6QPrdYptsinSUoJssMuDsLMQXHbGkYMeKWQ=&reserved=0>> (5/26, Tedeschi) “On the morning of January 28, 1986, NASA launched the space shuttle Challenger from the Kennedy Space Center in Florida. The crew included the first Jewish astronaut, the second Black astronaut, and NASA’s first Teacher in Space, Christa McAuliffe. In his latest book, *The Burning Blue*, Kevin Cook documents the crew’s many achievements—and the flawed decision-making that led to their deaths. Cook spoke with Air & Space senior associate editor Diane Tedeschi in April.”

## NASA Is Sending A Batch Of Adorable Squids To The Space Station

#### SlashGear

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#### ISS Astronaut Snaps Super Flower Blood Moon And Lunar Eclipse From Orbit

#### CNET News

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#### Astronauts On Set: Space Station May Host Wave Of TV Shows And Films

#### New York Times

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#### SpaceX Cargo Mission To Carry Water Bears, Baby Squids To Space Station

#### UPI

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## NASA Astronaut Peggy Whitson Joining Private Mission To ISS

KTLA-TV Los Angeles

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"Retired NASA astronaut Peggy Whitson is dusting off her spacesuit for another trip to space. But this time, she's flying private."

Moon to Mars

## U.S Firms GM, Lockheed Aim For The Moon With Lunar Rover Venture

Reuters

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"U.S. firms General Motors (GM) and Lockheed Martin Corp will develop a vehicle to drive NASA astronauts around on the moon's surface, they said on Wednesday, competing for a space project that could also promote their brands on earth. GM and Lockheed said they would collaborate to make a battery-powered, autonomous Lunar Terrain Vehicle for NASA's Artemis lunar landing program, which aims to return U.S. astronauts to the moon as early as 2024."

## Lockheed Martin And GM Are Working On An Electric Moon Buggy

The Verge

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"Lockheed Martin and General Motors unveiled plans on Wednesday to build an autonomous buggy-like vehicle that future astronauts can use to zip around the surface of the Moon. The two companies collaborated to pitch a conceptual Lunar Terrain Vehicle to NASA's Artemis program, a Moon exploration campaign that calls for various robots, vehicles, and scientific bases to be planted on the lunar surface within the next decade."

## Lockheed Martin And GM Partner To Develop New Moon Buggy For NASA Astronauts And Cargo

CNBC

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"Lockheed Martin and General Motors are partnering to develop a new type of lunar vehicle for NASA to use during its upcoming Artemis missions to the moon, the companies announced Wednesday. 'Surface mobility is critical to enable and sustain long-term exploration of the lunar surface. These next-generation rovers will dramatically extend the range

of astronauts,' Lockheed Martin executive vice president Rick Ambrose said in a statement.”

## GM And Lockheed Martin Are Making A Self-driving Moon Buggy For NASA

SlashGear

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## Lockheed Martin And GM Partner Up To Build Next-gen Lunar Rover

New Atlas

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## Lockheed Martin And GM Planning Self-Driving Rovers For NASA’s Return To The Moon

Forbes

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## Lockheed, General Motors Team Up On Lunar Rover Plan

UPI

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develop new lunar rovers for upcoming moon missions, the companies announced Wednesday. Lockheed and GM plan a fleet of robotic and piloted rovers, which would move farther than Apollo's three so-called moon buggies, according to a news release. The farthest distance an Apollo rover traveled was about 4.7 miles from the landing site."

#### GM, Lockheed Team Up On Potential New-Era Moon Rover For NASA

Bloomberg

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#### GM, Lockheed Martin Developing A Next-generation Lunar Rover

NBC News

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#### Lockheed Martin, GM Team Up To Build New Astronaut Moon Buggy

SPACE

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#### GM's Newest Vehicle: Off-road, Self-driving Rover For Moon

AP

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Dunn) “General Motors is teaming up with Lockheed Martin to produce the ultimate off-road, self-driving, electric vehicles — for the moon. The project announced Wednesday is still in the early stages and has yet to score any NASA money. But the goal is to design light yet rugged vehicles that will travel farther and faster than the lunar rovers that carried NASA’s Apollo astronauts in the early 1970s, the companies said.”

#### GM Joins Lockheed Martin To Design A Moon Buggy For NASA Astronauts

CNET News

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#### NASA’s VIPER Rover To Look For Water, Resources On Moon

Fox News

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#### ‘Marscapes’ Plans Landscape Art Of Red Planet In Kickstarter Project

SPACE

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#### Op-Ed | Artemis 2026: Celebrating America’s 250th With The Next Humans On The Moon

Space News

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aWwiLCJXVCI6Mn0=|1000&sdata=HemymBXkiW0KJnFI9OZOAAxQKbhtioLFX55I5teWcx0=&reserved=0> (5/26, Bender) “On July 4, 2026, the United States will celebrate the 250th anniversary of its independence. America should commemorate this historical milestone in 2026 by landing humans on the moon for the first time since 1972. Sending humanity back to the moon in 2026 is not only technically feasible, but it also fits squarely in the projected timeline for NASA’s already existing plan to return astronauts to the lunar surface — the Artemis program.”

#### Hawley, Sanders Decry \$10B ‘Bailout’ To Jeff Bezos Tucked Into Bill To Rebuff China

Fox Business

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0e4&t=c&data=04|01|randy.c.cruz@nasa.gov|f1f75d9155b64c9a4e7408d920fe3510|7005d45845be48ae8140d43da96dd17b|0|0|637577098457240076|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTil6Ik1h aWwiLCJXVCI6Mn0=|1000&sdata=Se/Mnvgzhew5XqWf5ZF23EcCo54n19ybS5LYeEgkUuM=&reserved=0> (5/26)

“Former Connecticut Senator Joe Lieberman (I) provides insight into the Senate Republicans proposing a counteroffer on Biden’s infrastructure plan. Sens. Josh Hawley and Bernie Sanders are speaking out against a \$10 billion corporate ‘bailout’ to Blue Origin, a space flight company founded by Amazon’s Jeff Bezos. ... The amendment would come after the company lost out on a multibillion-dollar NASA contract to SpaceX, run by Elon Musk. It would provide additional funding for NASA to carry out the Human Landing System program, and direct NASA to have two lander programs, giving Blue Origin another shot.”

#### Capital Calls: Jeff Bezos And Elon Musk’s D.C. Space Battle

Reuters

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0ce&t=c&data=04|01|randy.c.cruz@nasa.gov|f1f75d9155b64c9a4e7408d920fe3510|7005d45845be48ae8140d43da96dd17b|0|0|637577098457250036|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTil6Ik1h aWwiLCJXVCI6Mn0=|1000&sdata=9QZsE9ususPff9oqHpYlRbP7ti7qa760O9aSx2b1fc=&reserved=0> (5/26)

“COUNTDOWN. A fight between Elon Musk and Jeff Bezos over whose rocket firm will dominate the space race is about egos as big as the universe. But a battle in Washington, D.C. over funding for the National Aeronautics and Space Administration shows the contest centers just as much on earthly influence. NASA wants to go to the moon by 2024, and Musk’s SpaceX and Bezos’ Blue Origin both thought they would win funding to do so. But in April, the agency made a surprise decision to pick only SpaceX, citing a budget shortfall and technical factors. Blue Origin challenged the choice as unfair and risky.”

#### Bernie Sanders Is Fighting A Massive ‘Bailout’ To Jeff Bezos’ Space Company

Vice

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912&t=c&data=04|01|randy.c.cruz@nasa.gov|f1f75d9155b64c9a4e7408d920fe3510|7005d45845be48ae8140d43da96dd17b|0|0|637577098457250036|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTil6Ik1h aWwiLCJXVCI6Mn0=|1000&sdata=9/+4KqqWifcE+q3d7YjLJqJNZSSC1HiriuvdQIUWgSM=&reserved=0> (5/26, Ferreira) “The icy rivalry between space companies SpaceX and Blue Origin, which are owned respectively by billionaires Elon Musk and Jeff Bezos, has now spilled into the US Senate. Senator Bernie Sanders (I-Vermont) introduced an amendment to a funding bill on Monday seeking to stop a plan to secure \$10 billion in government funding, some of which would likely go to Blue Origin to provide redundancy for a project contracted to SpaceX last month. Sanders called the funding ‘the multibillion dollar Bezos Bailout’ in his amendment. Though Musk and Bezos have traded personal taunts before, their feud has been amplified since April by NASA’s decision to award SpaceX a prestigious \$2.9 billion contract to build a ‘human landing system’ for the Artemis program, which aims to return

astronauts to the surface of the Moon this decade.”

## South Korea Is The Latest Nation To Join NASA's Artemis Accords

SlashGear

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## NASA's Artemis Mission

WESH-TV Orlando (FL)

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## China's First Mars Rover Is Finally Cruising

BGR

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021052702nasa&r=email-af44&l=030-8c4&t=c&data=04|01|randy.c.cruz@nasa.gov|f1f75d9155b64c9a4e7408d920fe3510|7005d45845be48ae8140d43da96dd17b|0|0|637577098457259992|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTil6Ik1haWwiLCJXVCi6Mn0=|1000&sdata=U5AtBtdch8jQGq9ixC8eunUbbamq/SPsRApTr3Gq0Dc=&reserved=0>> (5/26, Wehner) “On the list of big surprises in space science over the past decade, the fact that China has rapidly become one of the major players in space exploration has to be near the top. The country, which watched for decades as the United States, Russia (and formerly, the Soviet Union), and European countries launched ever more advanced orbiters, landers, and rovers, has caught up to and in some cases surpassed its peers by completing some very difficult missions. The latest happens to be on Mars, where the China National Space Administration sent a trio of high-tech machines last year.”

## Solar System and Beyond

### Black Holes, Aliens, Multiverse & Mars: Space TED Talks You Need To Watch

SPACE

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Plummer) “This enlightening talk centers on our oldest cosmic neighbors, asteroids, and their importance to us here on Earth. Not only can asteroids shed light on the beginnings of the solar system, they also pose a massive risk to our safety. ... Carrie Nugent is part of the team that uses NASA’s NEOWISE telescope, a very valuable telescope that was pulled out of retirement and reprogrammed to search the skies for asteroids and catalog them.”

#### Jupiter’s Ocean Moon Europa May Have Deep-sea Volcanoes

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#### Europa May Have Active Volcanoes On Its Ocean Floor

SlashGear

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Space Tech

#### Russia To Launch Nuclear-powered Spaceship To The Moon, On To Venus, Then Jupiter

The Hill

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Various

#### Opinion: We Need To Put Science At The Center Of The UFO Question

Washington Post

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16b&t=c&data=04|01|randy.c.cruz@nasa.gov|f1f75d9155b64c9a4e7408d920fe3510|7005d45845be48ae8140d43da96dd17b|0|0|637577098457279902|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTil6Ik1hYWwiLCJXVCi6Mn0=|1000&sdata=FXf4OnwTVMAYz04P5jsF/oO4s2Hb+VdvG6QQfe9GG6l=&reserved=0> (5/26)

“Ravi Kopparapu is a planetary scientist at NASA Goddard Space Flight Center. Jacob Haqq-Misra is a research scientist at the Blue Marble Space Institute of Science. With a government report due in June on unidentified aerial phenomena (UAP) and a recent ‘60 Minutes’ story on U.S. Navy pilots’ sightings and videos of mysterious images, prominent people in politics, the military and national intelligence are finally asking: What are we looking at?”

SolarWinds Hack ‘A Big Wakeup Call,’ NASA’s Human Spaceflight Chief Says

SPACE

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6ce&t=c&data=04|01|randy.c.cruz@nasa.gov|f1f75d9155b64c9a4e7408d920fe3510|7005d45845be48ae8140d43da96dd17b|0|0|637577098457289864|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTil6Ik1hYWwiLCJXVCi6Mn0=|1000&sdata=q6lhUy7EszEhYm1NJRYfL5QwmzDxe0ofJKdo3g+O1VI=&reserved=0> (5/26,

Wall) “The effects of the SolarWinds hack extend out into the final frontier. In December 2020, news broke that a cyberattack had breached the defenses of the U.S. Treasury Department and one branch of the Department of Commerce. ... That same month, The Washington Post reported that NASA was one of those nine infiltrated agencies. NASA leaders know that the space agency, with its huge stores of advanced technical data, is an inviting target for hackers and therefore take significant measures to head them off. Even still it was compromised, and that shook the agency up.”

New Documentary Explores ‘Star Trek,’ Nichelle Nichols And NASA’s 1970s Astronaut Search

SPACE

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Howell) “In the 1970s, ‘Star Trek’ actor Nichelle Nichols saw an astronaut corps lacking in diversity and did what she could to change it. The story of how Nichols went about it – and the various people she inspired – is told in the new documentary ‘Woman In Motion: Nichelle Nichols, Star Trek and the Remaking of NASA.’”

Nichelle Nichols’ New NASA Documentary Is Romantic And Unflinching

io9

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“Early on in the new documentary Woman in Motion, Star Trek legend Nichelle Nichols discusses the idea of the blurred lines between the fantastical and the real in her job as Lieutenant Uhura, a character in equal parts history-making and yet also held back by the harsh realities of the era her character was made in. The documentary itself, going far beyond that 23rd century future and all the way back into our own history, is a similar adventure. Directed by The Highwaymen’s Todd Thompson—and now coming to Paramount+ after a limited theatrical debut earlier this

year—Woman in Motion: Nichelle Nichols, Star Trek and the Remaking of NASA showcases a fascinating balancing act.”

## NASA Projects Over Budget And Behind Schedule, According To GAO Report

Florida Today

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Other

## Falcon 9 Completes Its 100th Successful Flight In A Row [Updated]

Ars Technica

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## SpaceX Is About To Hit A Ridiculous Milestone

BGR

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## SpaceX Bolsters Starlink Network With 60 More Satellites

Aviation Week

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SpaceX Falcon 9 rocket delivered the 29th batch of Starlink satellites into orbit on May 26 as the company expanded beta trials of its high-speed internet service to Belgium and the Netherlands. More than 500,000 people have placed orders or put down deposits to try the service...”

#### SpaceX Launches More Starlink Satellites As Orders Reach Half A Million

Florida Today

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#### SpaceX Launches And Lands Falcon 9 Rocket For 85th Time

Bloomberg

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#### Viasat Threatens To Sue FCC Over SpaceX’s Starlink Plan

Law360

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#### Is SpaceX’s Starlink Mega Constellation An Environmental Problem? The FCC Says ‘No’

Forbes

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May 2019, SpaceX began the launch and deployment of its Starlink constellation, a planned group of up to 42,000 satellites in orbit designed to beam the internet to Earth from space.”

#### Starlink V1.0 L28 Mission Completes First “Shell” Of Satellites For Worldwide Coverage

NASA Space Flight

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#### EU Court Rejects OHB Bid To Suspend European Space Agency Decisions

Reuters

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#### Editorial: Flight Puts Virgin, NM In Space Race

Albuquerque (NM) Journal

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aWwiLCJXVCi6Mn0=|1000&sdata=rw819xLzFq0+xeI6O3M+ZVeYoiWHQ7R0RvNKsvLhEsl=&reserved=0>. The  
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### Editor's Note

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#### Top Stories

#### New International Space Station Crew Arrives In Record Time

Washington Post <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101502nasa-26r-3Demail-2Dac3f-26l-3D003-2D42a-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=jWN0jCo7Hg75c7fvBSIsvxz7V2xQwyAYulad2nZSOIo&s=KDW\\_x0gbvUnl0F5VI0Xwb9Gc2T](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101502nasa-26r-3Demail-2Dac3f-26l-3D003-2D42a-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=jWN0jCo7Hg75c7fvBSIsvxz7V2xQwyAYulad2nZSOIo&s=KDW_x0gbvUnl0F5VI0Xwb9Gc2T)>

mKcJM\_Osv0YaUfWk0&e=> (10/14) "A trio of space travelers blasted off to the International Space Station on Wednesday, using for the first time a fast-track maneuver that allowed them to reach the orbiting outpost in a little more than three hours. NASA's Kate Rubins along with Sergey Ryzhikov and Sergey Kud-Sverchkov of the Russian space agency, Roscosmos, lifted off as scheduled Wednesday from the Russia-leased Baikonur space launch facility in Kazakhstan for a six-month stint at the station."

#### Soyuz Launch Marks End Of An Era For NASA

Space News <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101502nasa-26r-3Demail-2Dac3f-26l-3D004-2D44a-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=jWN0jCo7Hg75c7fvBSlsvxz7V2xQwyAYulad2nZSOlo&s=mnplSpXuTk0pRIYPgHs3NeZOQB73OPMTJ9XjFEfLTHg&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101502nasa-26r-3Demail-2Dac3f-26l-3D004-2D44a-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=jWN0jCo7Hg75c7fvBSlsvxz7V2xQwyAYulad2nZSOlo&s=mnplSpXuTk0pRIYPgHs3NeZOQB73OPMTJ9XjFEfLTHg&e=>) (10/14, Foust) "A Soyuz spacecraft launched to the International Space Station Oct. 14 on what will likely be the last mission where NASA pays Russia for a seat, but not necessarily the last time NASA astronauts fly on the spacecraft. The Soyuz-2.1a rocket lifted off from the Baikonur Cosmodrome at 1:45 a.m. Eastern, placing the Soyuz MS-17 spacecraft into orbit nine minutes later. The spacecraft, making an "ultra-fast" two-orbit approach, docked with the station's Rassvet module at 4:48 a.m. Eastern."

#### NASA Selects First Human-Tended Suborbital Research Payload

Space News <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101502nasa-26r-3Demail-2Dac3f-26l-3D005-2D96c-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=jWN0jCo7Hg75c7fvBSlsvxz7V2xQwyAYulad2nZSOlo&s=lhukzGCeY25eERFXFGi5iO\\_1Z0aByExq5HIF2H6KPLw&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101502nasa-26r-3Demail-2Dac3f-26l-3D005-2D96c-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=jWN0jCo7Hg75c7fvBSlsvxz7V2xQwyAYulad2nZSOlo&s=lhukzGCeY25eERFXFGi5iO_1Z0aByExq5HIF2H6KPLw&e=>) (10/14, Foust) "NASA has selected its first human-tended commercial suborbital research payload, clearing the way for the biggest advocate of such research to fly on a future Virgin Galactic mission. NASA announced Oct. 14 it selected a proposed experiment by the Southwest Research Institute (SwRI) as part of its Flight Opportunities program for testing technologies on suborbital vehicles and aircraft. That experiment will test the operation of a camera designed to work at low light levels in order to see how it could be used for astronomical imaging, as well as a separate suite of biomedical sensors."

#### US And Seven Other Nations Sign NASA's Artemis Rules For Exploring The Moon

The Hill <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101502nasa-26r-3Demail-2Dac3f-26l-3D006-2D6c4-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=jWN0jCo7Hg75c7fvBSlsvxz7V2xQwyAYulad2nZSOlo&s=mhCSm\\_TIVem8TdZJeFjCyih7F45ppsErYQSII50jNrM&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101502nasa-26r-3Demail-2Dac3f-26l-3D006-2D6c4-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=jWN0jCo7Hg75c7fvBSlsvxz7V2xQwyAYulad2nZSOlo&s=mhCSm_TIVem8TdZJeFjCyih7F45ppsErYQSII50jNrM&e=>) (10/14, Srikanth) "The United States joined seven other countries to sign the Artemis Accords, a step towards the NASA program's goal of sending the first woman and next man to the surface of the Moon in 2024. 'Artemis will be the broadest and most diverse international human space exploration program in history, and the Artemis Accords are the vehicle that will establish this singular global coalition,' said NASA Administrator Jim Bridenstine in a release."

#### Eight Nations Sign NASA-Led Artemis Accords To Guide Moon Exploration

NBC News <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101502nasa-26r-3Demail-2Dac3f-26l-3D007-2Da89-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101502nasa-26r-3Demail-2Dac3f-26l-3D007-2Da89-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD)

8-  
mHkTTiYCEf5ROyus&m=jWN0jCo7Hg75c7fvBSIsvxz7V2xQwyAYulad2nZSOlo&s=GL8c9cSgJw7bTmJf2gBgDqk5QNjFzGel75UtSGDxgs8&e=> (10/14, Chow) "Eight nations have signed on to become founding members of NASA's Artemis Accords, an international agreement that establishes how countries can cooperate to peacefully and responsibly conduct exploration of the moon. NASA announced Tuesday that the United States signed the accords, together with Australia, Canada, Italy, Japan, Luxembourg, the United Arab Emirates and the United Kingdom. NASA Administrator Jim Bridenstine said the agreement would establish a 'singular global coalition' to guide future expeditions to the moon."

#### How Commercializing The International Space Station Can Help Astronauts Get To The Moon And Mars

SPACE <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101502nasa-26r-3Demail-2Dac3f-26l-3D008-2D8c0-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101502nasa-26r-3Demail-2Dac3f-26l-3D008-2D8c0-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD)>  
8-

mHkTTiYCEf5ROyus&m=jWN0jCo7Hg75c7fvBSIsvxz7V2xQwyAYulad2nZSOlo&s=e9LRNpZdiSYksYQT7IGX7gH\_tLla0-XpoDLxavWIXcs&e=> (10/14, Howell) "Commercializing the International Space Station (ISS) could allow for testing components for future moon and Mars missions, and the orbiting platform could also be a pit stop on the way to the moon, according to a panel at the virtual International Astronautical Congress. The IAC usually runs in-person at a different city every year, but its 2020 conference in Dubai was delayed by a year in favor of virtual sessions — a necessary change due to the novel coronavirus pandemic. Participants in the ISS commercialization discussion Tuesday (Oct. 13) represented private space companies on three continents who have forged close relationships with NASA, the European Space Agency (ESA) and the Japanese Aerospace Exploration Agency (JAXA)."

Flight

No content.

Earth

#### NASA Rainfall Imagery Reveals Norbert Regains Tropical Storm Status

Phys (UK) <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101502nasa-26r-3Demail-2Dac3f-26l-3D009-2D23d-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101502nasa-26r-3Demail-2Dac3f-26l-3D009-2D23d-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD)>  
8-mHkTTiYCEf5ROyus&m=jWN0jCo7Hg75c7fvBSIsvxz7V2xQwyAYulad2nZSOlo&s=bxESwOdcfVvV0BDlj2jYo-BwLqF2\_RaYe3dyT6obok&e=> (10/14, Gutro) "Norbert has been meandering around in the Eastern Pacific Ocean for several days as a tropical depression. A NASA satellite rainfall product that incorporates data from satellites and observations revealed that Norbert has regained tropical storm status after showing increased organization and deep convection."

Humans in Space

#### New International Space Station Crew Arrives In Record Time

Washington Post <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101502nasa-26r-3Demail-2Dac3f-26l-3D00a-2D897-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101502nasa-26r-3Demail-2Dac3f-26l-3D00a-2D897-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD)>  
8-  
mHkTTiYCEf5ROyus&m=jWN0jCo7Hg75c7fvBSIsvxz7V2xQwyAYulad2nZSOlo&s=3HHYEs7C2ihTKeg01tBxwNzphD

jX5jru9h4TTSXHhE&e=> (10/14) "A trio of space travelers blasted off to the International Space Station on Wednesday, using for the first time a fast-track maneuver that allowed them to reach the orbiting outpost in a little more than three hours. NASA's Kate Rubins along with Sergey Ryzhikov and Sergey Kud-Sverchkov of the Russian space agency, Roscosmos, lifted off as scheduled Wednesday from the Russia-leased Baikonur space launch facility in Kazakhstan for a six-month stint at the station."

#### Soyuz Capsule Docks With The ISS Delivering New Crewmembers

SlashGear <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101502nasa-26r-3Demail-2Dac3f-26l-3D00b-2D4e0-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=jWN0jCo7Hg75c7fvBSlsvxz7V2xQwyAYulad2nZSOlo&s=K5xqWpwqFM3ogrDxVlJE96V2r-UvjWgke5NRzFtKd2o&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101502nasa-26r-3Demail-2Dac3f-26l-3D00b-2D4e0-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=jWN0jCo7Hg75c7fvBSlsvxz7V2xQwyAYulad2nZSOlo&s=K5xqWpwqFM3ogrDxVlJE96V2r-UvjWgke5NRzFtKd2o&e=>) (10/14, McGlaun) "At 1:45 AM EDT this morning, a Soyuz spacecraft lifted off from the Baikonur Cosmodrome in Kazakhstan bound for the ISS. Aboard the spacecraft are NASA astronaut Kate Rubins and cosmonauts Sergey Ryzhikov and Sergey Kud-Sverchkov. The ISS journey lasted approximately three hours and marks the first time a Soyuz crew has taken the fast-track, two-orbit rendezvous path to the ISS."

#### Soyuz Launch Marks End Of An Era For NASA

Space News <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101502nasa-26r-3Demail-2Dac3f-26l-3D00c-2De0a-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=jWN0jCo7Hg75c7fvBSlsvxz7V2xQwyAYulad2nZSOlo&s=hKZZfwmqqbnaU9k6nTkXTDgpKsGg7PhrvD7d2AR5X68&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101502nasa-26r-3Demail-2Dac3f-26l-3D00c-2De0a-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=jWN0jCo7Hg75c7fvBSlsvxz7V2xQwyAYulad2nZSOlo&s=hKZZfwmqqbnaU9k6nTkXTDgpKsGg7PhrvD7d2AR5X68&e=>) (10/14, Foust) "A Soyuz spacecraft launched to the International Space Station Oct. 14 on what will likely be the last mission where NASA pays Russia for a seat, but not necessarily the last time NASA astronauts fly on the spacecraft. The Soyuz-2.1a rocket lifted off from the Baikonur Cosmodrome at 1:45 a.m. Eastern, placing the Soyuz MS-17 spacecraft into orbit nine minutes later. The spacecraft, making an "ultra-fast" two-orbit approach, docked with the station's Rassvet module at 4:48 a.m. Eastern."

#### Soyuz Rocket Departs For The International Space Station In Historic Final U.S.-Russian Flight

NBC News <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101502nasa-26r-3Demail-2Dac3f-26l-3D00d-2Ddcd-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=jWN0jCo7Hg75c7fvBSlsvxz7V2xQwyAYulad2nZSOlo&s=uZuTi6li3Ppeab\\_BCyhe7O7JQZzGPFsSroUepkpaQU&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101502nasa-26r-3Demail-2Dac3f-26l-3D00d-2Ddcd-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=jWN0jCo7Hg75c7fvBSlsvxz7V2xQwyAYulad2nZSOlo&s=uZuTi6li3Ppeab_BCyhe7O7JQZzGPFsSroUepkpaQU&e=>) (10/14, Bodner) "Since the launch of Sputnik and Yuri Gagarin from the desert steppe of Kazakhstan over 60 years ago, the history of spaceflight has been measured in milestones. The first satellite, the first human in space, the first to the Moon. But the launch of Soyuz MS-17 on Wednesday was a different kind of milestone: the end of an era. ... It was the last time NASA paid for an American astronaut to fly with the Russian Space Agency, Roscosmos, on such a flight."

#### Russia Successfully Launches Soyuz Rocket Carrying NASA Astronaut Kate Rubins

CBS News <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101502nasa-26r-3Demail-2Dac3f-26l-3D00e-2D2f8-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=jWN0jCo7Hg75c7fvBSlsvxz7V2xQwyAYulad2nZSOlo&s=E2wUmVHgruhNyKqc98Flr3Rg4oKlqe-C-CXLHjS-EQQ&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101502nasa-26r-3Demail-2Dac3f-26l-3D00e-2D2f8-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=jWN0jCo7Hg75c7fvBSlsvxz7V2xQwyAYulad2nZSOlo&s=E2wUmVHgruhNyKqc98Flr3Rg4oKlqe-C-CXLHjS-EQQ&e=>) (10/14) "Russia successfully launches Soyuz rocket carrying NASA astronaut Kate Rubins"

## NASA Astronaut, Russian Cosmonauts Launch To The Space Station

CNN <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101502nasa-26r-3Demail-2Dac3f-26l-3D00f-2D85a-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=jWN0jCo7Hg75c7fvBSIsvxz7V2xQwyAYulad2nZSOlo&s=o2u2UliPyPDw\\_fgUfywpKVi3S\\_1dqlaQdUxYBrvLBkM&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101502nasa-26r-3Demail-2Dac3f-26l-3D00f-2D85a-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=jWN0jCo7Hg75c7fvBSIsvxz7V2xQwyAYulad2nZSOlo&s=o2u2UliPyPDw_fgUfywpKVi3S_1dqlaQdUxYBrvLBkM&e=>) (10/14, Strickland) "Just a few weeks ahead of the 20th anniversary of a continuous human presence in space, NASA astronaut Kate Rubins and Russian cosmonauts Sergey Ryzhikov and Sergey Kud-Sverchkov launched for a stay on the International Space Station. The launch from the Baikonur Cosmodrome in southern Kazakhstan occurred at 1:45 am ET on Wednesday."

## NASA's Kate Rubins, 2 Cosmonauts Dock With Int'l Space Station

UPI <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101502nasa-26r-3Demail-2Dac3f-26l-3D010-2D7d7-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=jWN0jCo7Hg75c7fvBSIsvxz7V2xQwyAYulad2nZSOlo&s=tPMToxsLKermQvMnJQruO0hOmY4rK8TVdA0WugBA9tc&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101502nasa-26r-3Demail-2Dac3f-26l-3D010-2D7d7-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=jWN0jCo7Hg75c7fvBSIsvxz7V2xQwyAYulad2nZSOlo&s=tPMToxsLKermQvMnJQruO0hOmY4rK8TVdA0WugBA9tc&e=>) (10/14) "The Soyuz MS-17 spacecraft successfully launched early Wednesday from Kazakhstan to the International Space Station, with NASA astronaut Kate Rubins and Russian cosmonauts Sergey Ryzhikov and Sergey Kud-Sverchkov aboard. The spacecraft lifted off from the Baikonur Cosmodrome at 1:45 a.m. EDT for the two-orbit, three-hour flight to the ISS, where the crew of Expedition 64 were scheduled to begin their six-month mission on the space outpost."

## NASA Astronaut And Russian Crewmates Successfully Reach ISS In Three Hours

Business Insider India <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101502nasa-26r-3Demail-2Dac3f-26l-3D011-2D06d-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=jWN0jCo7Hg75c7fvBSIsvxz7V2xQwyAYulad2nZSOlo&s=AxJMnagnkHGf7ierOgMdRW29ldSeEvxenIpcTbyQc&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101502nasa-26r-3Demail-2Dac3f-26l-3D011-2D06d-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=jWN0jCo7Hg75c7fvBSIsvxz7V2xQwyAYulad2nZSOlo&s=AxJMnagnkHGf7ierOgMdRW29ldSeEvxenIpcTbyQc&e=>) (10/14) "Kate Rubins and Russian cosmonauts Sergey Ryzhikov and Sergey Kud-Sverchkov reached the International Space Station (ISS) on Wednesday in just about three hours. The spacecraft began the journey to the space station from the Baikonur spaceport in Kazakhstan at 1.45 am EDT (10.45 am local Kazakh time) and it docked to the space station at 4.48 am EDT."

## New Crew Reaches ISS In Record Time

Phys (UK) <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101502nasa-26r-3Demail-2Dac3f-26l-3D012-2D6df-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=jWN0jCo7Hg75c7fvBSIsvxz7V2xQwyAYulad2nZSOlo&s=n-OUL1dA-7G7JVLkui6i8xR1WJHuPB8hML2wOv8-\\_cM&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101502nasa-26r-3Demail-2Dac3f-26l-3D012-2D6df-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=jWN0jCo7Hg75c7fvBSIsvxz7V2xQwyAYulad2nZSOlo&s=n-OUL1dA-7G7JVLkui6i8xR1WJHuPB8hML2wOv8-_cM&e=>) (10/14, Ricketon) "A three-person crew successfully reached the International Space Station on Wednesday aboard a Russian rocket after the fastest ever journey from Earth of just over three hours. The mission of the Soyuz space craft carrying two Russian cosmonauts and one NASA astronaut was of immense importance to Russia's space agency Roscosmos, coming as the SpaceX programme relaunched manned spaceflight from the United States and ignites fresh talk of a space race between the two countries."



## Astronauts Arrive At ISS

KTLA-TV Los Angeles <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101502nasa-26r-3Demail-2Dac3f-26l-3D013-2Df12-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=jWN0jCo7Hg75c7fvBSlsvxz7V2xQwyAYulad2nZSOlo&s=AGE7ULO5X-d98iVPmhFxPwvl9PuPsDCbVTYBWzMo2ZU&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101502nasa-26r-3Demail-2Dac3f-26l-3D013-2Df12-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=jWN0jCo7Hg75c7fvBSlsvxz7V2xQwyAYulad2nZSOlo&s=AGE7ULO5X-d98iVPmhFxPwvl9PuPsDCbVTYBWzMo2ZU&e=>) (10/14) "Kate Rubins, Sergey Ryzhikov, and Sergey Kud-Sverchkov now on their way to the International Space Station. A trio of space travelers arrived at the International Space Station."

## Astronauts Launch To ISS

KPRC-TV Houston <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101502nasa-26r-3Demail-2Dac3f-26l-3D014-2D162-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=jWN0jCo7Hg75c7fvBSlsvxz7V2xQwyAYulad2nZSOlo&s=8OYEJSVcZGm2\\_IU7p8fgpXEQ6g3QQmhNs7ov6CK1nQg&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101502nasa-26r-3Demail-2Dac3f-26l-3D014-2D162-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=jWN0jCo7Hg75c7fvBSlsvxz7V2xQwyAYulad2nZSOlo&s=8OYEJSVcZGm2_IU7p8fgpXEQ6g3QQmhNs7ov6CK1nQg&e=>) (10/14) "It is the end of an era in spaceflight and a step toward the future of space. NASA astronaut Kate Rubins along with two cosmonauts lifted off from Kazakhstan overnight."

## Astronauts Launch To ISS

KCBS-TV Los Angeles <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101502nasa-26r-3Demail-2Dac3f-26l-3D015-2Db0a-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=jWN0jCo7Hg75c7fvBSlsvxz7V2xQwyAYulad2nZSOlo&s=QR0TwtBPGFxEUDI9FsJu8B32u8kS61Kj76zRjESBbjE&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101502nasa-26r-3Demail-2Dac3f-26l-3D015-2Db0a-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=jWN0jCo7Hg75c7fvBSlsvxz7V2xQwyAYulad2nZSOlo&s=QR0TwtBPGFxEUDI9FsJu8B32u8kS61Kj76zRjESBbjE&e=>) (10/14) "Three, two, one, and liftoff. The International Space Station will soon have some visitors."

## NASA Astronaut Reaches Space Station After 'Fast-Track' Journey

Fox News <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101502nasa-26r-3Demail-2Dac3f-26l-3D016-2Dc2a-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=jWN0jCo7Hg75c7fvBSlsvxz7V2xQwyAYulad2nZSOlo&s=A2z\\_BkMNCrYEpXPjyUcHOLsKvnGnkqZJtOIHIGXedD0&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101502nasa-26r-3Demail-2Dac3f-26l-3D016-2Dc2a-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=jWN0jCo7Hg75c7fvBSlsvxz7V2xQwyAYulad2nZSOlo&s=A2z_BkMNCrYEpXPjyUcHOLsKvnGnkqZJtOIHIGXedD0&e=>) (10/14, Rogers) "NASA astronaut Kate Rubins has reached the International Space Station after the Soyuz spacecraft carrying her and Russian cosmonauts Sergey Ryzhikov and Sergey Kud-Sverchkov completed a fast-track, two-orbit rendezvous path to the orbiting space lab. Rubins and her fellow crewmembers blasted off from Baikonur Cosmodrome in Kazakhstan at 1:45 a.m. EDT. Their journey to the space station took a little over three hours and was the first time that a Soyuz Crew has taken the fast-track, two-orbit rendezvous path."

## Is NASA Finally Done Paying Russia For Trips To Space?

Gizmodo <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101502nasa-26r-3Demail-2Dac3f-26l-3D017-2Dcbb-26t-](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101502nasa-26r-3Demail-2Dac3f-26l-3D017-2Dcbb-26t-)

3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-  
mHkTTiYCEf5ROyus&m=jWN0jCo7Hg75c7fvBSIsvxz7V2xQwyAYulad2nZSOlo&s=sUpBrxS7lbyxWZrpWLhMOKJgDo  
d1Zods0TN1kzaTToE&e=> (10/14, Dvorsky) "NASA just handed over \$90 million to the Russian space agency for  
launching astronaut Kate Rubins to the International Space Station. Assuming its commercial partners are able to  
deliver, this could mark the last time NASA purchases a seat on a Soyuz spacecraft. It was 3-2-1 blastoff at 1:45 a.m.  
EDT today, when a Soyuz-2.1a rocket lifted off from the Baikonur Cosmodrome in Kazakhstan. Sitting in the Soyuz  
MS-17 spacecraft were Rubins and cosmonauts Sergey Ryzhikov and Sergey Kud-Sverchkov. These are the first  
three members of what will be the seven-member Expedition 64 crew, which will work aboard the International Space  
Station until April 2021."

#### Inside The Final U.S.-Russia Joint Space Flight

NBC News <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101502nasa-26r-3Demail-2Dac3f-26l-3D018-2Dd1f-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101502nasa-26r-3Demail-2Dac3f-26l-3D018-2Dd1f-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-)  
mHkTTiYCEf5ROyus&m=jWN0jCo7Hg75c7fvBSIsvxz7V2xQwyAYulad2nZSOlo&s=1mjc716OFgFwPfw0m5InbsC3R  
BUO1qmARWNKJW3Z3M&e=> (10/14) "A Russian Soyuz rocket carried NASA astronaut Kate Rubins and two  
Russian cosmonauts into space for a six-month stint aboard the International Space Station. It's the last scheduled  
time that the U.S. will pay Russia for a lift into space."

#### A Russian Rocket Just Carried A NASA Astronaut To The ISS... But Why?

BGR <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101502nasa-26r-3Demail-2Dac3f-26l-3D019-2Dbc7-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101502nasa-26r-3Demail-2Dac3f-26l-3D019-2Dbc7-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-)  
mHkTTiYCEf5ROyus&m=jWN0jCo7Hg75c7fvBSIsvxz7V2xQwyAYulad2nZSOlo&s=kH8O30Qo4sYawrfdSteG7ridVgb  
FbxgQN9clvsTzVkw&e=> (10/14, Wehner) "NASA astronaut Kate Rubins took a seat aboard a Russian Soyuz  
spacecraft headed for the International Space Station. The trip is the last of the seats that NASA will have to lease  
from Russia now that its own commercial crew program has matured."

#### Jeff Bezos' Rocket Company Launches First Test Of Its Tourism Spaceship In A Year

CNN Business <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101502nasa-26r-3Demail-2Dac3f-26l-3D01a-2Dfee-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101502nasa-26r-3Demail-2Dac3f-26l-3D01a-2Dfee-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-)  
mHkTTiYCEf5ROyus&m=jWN0jCo7Hg75c7fvBSIsvxz7V2xQwyAYulad2nZSOlo&s=zgq6bs31Q39PTUflsqvetszzYnzP  
OidOLPhhNBECNTM&e=> (10/14, Wattles) "Blue Origin, the rocket venture founded by Jeff Bezos, launched its space  
tourism rocket from its West Texas test site to the edge of Earth's atmosphere on Tuesday, marking the first test flight  
of the rocket in nearly a year. It marked the 13th test flight of New Shepard, as the vehicle is called, but it still has yet  
to fly with humans on board. Blue Origin wants to eventually send paying customers on brief joy rides to the edge of  
space, but the company has not started selling tickets, nor has it announced a price. So far, the vehicle has only  
carried science experiments and, at one point, a test dummy nicknamed Mannequin Skywalker."

#### NASA Selects First Human-Tended Suborbital Research Payload

Space News <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101502nasa-26r-3Demail-2Dac3f-26l-3D01a-2Dfee-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101502nasa-26r-3Demail-2Dac3f-26l-3D01a-2Dfee-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-)

3Fm-3D2020101502nasa-26r-3Demail-2Dac3f-26l-3D01b-2D574-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=jWN0jCo7Hg75c7fvBSlsvxz7V2xQwyAYulad2nZSOlo&s=UMloBnXlswm9pub8rRZoKuYitABshMSWo1dZ1Ry3EA&e=> (10/14, Foust) "NASA has selected its first human-tended commercial suborbital research payload, clearing the way for the biggest advocate of such research to fly on a future Virgin Galactic mission. NASA announced Oct. 14 it selected a proposed experiment by the Southwest Research Institute (SwRI) as part of its Flight Opportunities program for testing technologies on suborbital vehicles and aircraft. That experiment will test the operation of a camera designed to work at low light levels in order to see how it could be used for astronomical imaging, as well as a separate suite of biomedical sensors."

#### Planetary Scientist To Fly Aboard NASA-Funded Commercial Space Flight

Phys (UK) <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101502nasa-26r-3Demail-2Dac3f-26l-3D01c-2D562-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=jWN0jCo7Hg75c7fvBSlsvxz7V2xQwyAYulad2nZSOlo&s=C\\_6ZNfdg3tOTthGJ5GFheUHqdlVy2Y4vFi7s-Mx\\_eM4&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101502nasa-26r-3Demail-2Dac3f-26l-3D01c-2D562-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=jWN0jCo7Hg75c7fvBSlsvxz7V2xQwyAYulad2nZSOlo&s=C_6ZNfdg3tOTthGJ5GFheUHqdlVy2Y4vFi7s-Mx_eM4&e=>) (10/14) "A Southwest Research Institute (SwRI) planetary scientist has been chosen to be among the first group to conduct NASA-funded science experiments while flying aboard a commercial spacecraft, the space agency announced today. Dr. Alan Stern, planetary scientist and associate vice president of SwRI's Space Science and Engineering Division, will fly aboard the Virgin Galactic commercial spacecraft called 'SpaceShipTwo' on a yet unscheduled suborbital mission from the Spaceport America launch site in New Mexico."

#### Elon Musk, SpaceX To Get Hollywood Treatment From Heartthrob Channing Tatum's Production Company

Fox Business <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101502nasa-26r-3Demail-2Dac3f-26l-3D01d-2D4f5-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=jWN0jCo7Hg75c7fvBSlsvxz7V2xQwyAYulad2nZSOlo&s=PsmxjDTYbRnKte3YGdnkaQc8DJzsFuhB1h0leAUfWxE&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101502nasa-26r-3Demail-2Dac3f-26l-3D01d-2D4f5-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=jWN0jCo7Hg75c7fvBSlsvxz7V2xQwyAYulad2nZSOlo&s=PsmxjDTYbRnKte3YGdnkaQc8DJzsFuhB1h0leAUfWxE&e=>) (10/14, Fordham) "Tesla CEO Elon Musk and SpaceX are getting the Hollywood treatment from HBO and Free Association, heartthrob actor Channing Tatum's production company. The six-episode project will focus on the Falcon 9 launch on May 30, Deadline reported. .... SpaceX is a private aerospace company founded by Musk in May 2002. In partnership with NASA, SpaceX's Falcon 9 sent U.S. astronauts into orbit on May 30 for the first time in almost a decade, since the government retired NASA's space shuttle in 2011. It also became the first private company to send astronauts into orbit."

#### Moon to Mars

#### US And Seven Other Nations Sign NASA's Artemis Rules For Exploring The Moon

The Hill <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101502nasa-26r-3Demail-2Dac3f-26l-3D01e-2D318-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=jWN0jCo7Hg75c7fvBSlsvxz7V2xQwyAYulad2nZSOlo&s=heGf60PNjtuUSMacuFSo-3vr93fwOTxhID1LaOKHJW8&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101502nasa-26r-3Demail-2Dac3f-26l-3D01e-2D318-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=jWN0jCo7Hg75c7fvBSlsvxz7V2xQwyAYulad2nZSOlo&s=heGf60PNjtuUSMacuFSo-3vr93fwOTxhID1LaOKHJW8&e=>) (10/14, Srikanth) "The United States joined seven other countries to sign the Artemis Accords, a step towards the NASA program's goal of sending the first woman and next man to the surface of the Moon in 2024. 'Artemis will be the broadest and most diverse international human space exploration program in history, and the Artemis Accords are the vehicle that will establish this singular global coalition,' said NASA Administrator Jim Bridenstine in a release."

## A New Space Pact Seeks To Ensure Peace On The Moon

TIME <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101502nasa-26r-3Demail-2Dac3f-26l-3D01f-2Dc0a-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=jWN0jCo7Hg75c7fvBSIsvxz7V2xQwyAYulad2nZSOlo&s=QsVG\\_z7tfDITGPY9-cy4Ueq3kUamFFSbAGqaALbTQqA&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101502nasa-26r-3Demail-2Dac3f-26l-3D01f-2Dc0a-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=jWN0jCo7Hg75c7fvBSIsvxz7V2xQwyAYulad2nZSOlo&s=QsVG_z7tfDITGPY9-cy4Ueq3kUamFFSbAGqaALbTQqA&e=>) (10/14, Kluger) “Laws have long been portable things. Human beings settled frontiers with tools and muscle—and too often with weapons, seizing lands that belong to others. One other thing the settlers also brought along were their legal systems, rules of the road to govern their behavior in the new communities they built. That was true when all our exploring was terrestrial, and it remained true when we ventured into space. ... On Oct. 13, NASA announced the completion of what it has called the Artemis Accords, an agreement among eight partner nations to cooperate and collaborate in future explorations of the moon and Mars, especially via participation in NASA’s Artemis program, which aims to land the first woman and the next man on the moon before the end of 2024.”

## NASA Signs Moon Exploration Agreement With Eight Nations

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## Eight Nations Sign NASA-Led Artemis Accords To Guide Moon Exploration

NBC News <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101502nasa-26r-3Demail-2Dac3f-26l-3D021-2D845-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=jWN0jCo7Hg75c7fvBSIsvxz7V2xQwyAYulad2nZSOlo&s=F0xPhWB62rIKu-8M0DG4fNuzcD1pl\\_Yj2ycPlpG9Bno&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101502nasa-26r-3Demail-2Dac3f-26l-3D021-2D845-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=jWN0jCo7Hg75c7fvBSIsvxz7V2xQwyAYulad2nZSOlo&s=F0xPhWB62rIKu-8M0DG4fNuzcD1pl_Yj2ycPlpG9Bno&e=>) (10/14, Chow) “Eight nations have signed on to become founding members of NASA’s Artemis Accords, an international agreement that establishes how countries can cooperate to peacefully and responsibly conduct exploration of the moon. NASA announced Tuesday that the United States signed the accords, together with Australia, Canada, Italy, Japan, Luxembourg, the United Arab Emirates and the United Kingdom. NASA Administrator Jim Bridenstine said the agreement would establish a ‘singular global coalition’ to guide future expeditions to the moon.”

## Eight Nations Sign NASA’s Artemis Accords That Guide Cooperative Exploration Of The Moon

CNN <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101502nasa-26r-3Demail-2Dac3f-26l-3D022-2D9d9-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=jWN0jCo7Hg75c7fvBSIsvxz7V2xQwyAYulad2nZSOlo&s=l4wPXDvZBxbRd5rIQeBKvO5ITDZx-0RvhuWF24lfwmk&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101502nasa-26r-3Demail-2Dac3f-26l-3D022-2D9d9-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=jWN0jCo7Hg75c7fvBSIsvxz7V2xQwyAYulad2nZSOlo&s=l4wPXDvZBxbRd5rIQeBKvO5ITDZx-0RvhuWF24lfwmk&e=>) (10/14, Strickland) “Eight countries have signed on as founding member nations to NASA’s Artemis Accords during the 71st International Astronautical Congress this week. Those nations include Australia,

Canada, Italy, Japan, Luxembourg, the United Arab Emirates, the United Kingdom and the United States of America.”

#### How Commercializing The International Space Station Can Help Astronauts Get To The Moon And Mars

SPACE <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101502nasa-26r-3Demail-2Dac3f-26l-3D023-2D757-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=jWN0jCo7Hg75c7fvBSlsvxz7V2xQwyAYulad2nZSOlo&s=qA61ZNICD5s8qtxm6TjDNPkATbEX\\_Q9LthVobPg6cMo&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101502nasa-26r-3Demail-2Dac3f-26l-3D023-2D757-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=jWN0jCo7Hg75c7fvBSlsvxz7V2xQwyAYulad2nZSOlo&s=qA61ZNICD5s8qtxm6TjDNPkATbEX_Q9LthVobPg6cMo&e=>) (10/14, Howell) “Commercializing the International Space Station (ISS) could allow for testing components for future moon and Mars missions, and the orbiting platform could also be a pit stop on the way to the moon, according to a panel at the virtual International Astronautical Congress. The IAC usually runs in-person at a different city every year, but its 2020 conference in Dubai was delayed by a year in favor of virtual sessions — a necessary change due to the novel coronavirus pandemic. Participants in the ISS commercialization discussion Tuesday (Oct. 13) represented private space companies on three continents who have forged close relationships with NASA, the European Space Agency (ESA) and the Japanese Aerospace Exploration Agency (JAXA).”

#### These 14 Companies Will Help Solve NASA’s Biggest Artemis Moon Base Problems

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#### European Moon-Lander Project Pits Airbus Against Thales

Bloomberg <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101502nasa-26r-3Demail-2Dac3f-26l-3D025-2Dd4c-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=jWN0jCo7Hg75c7fvBSlsvxz7V2xQwyAYulad2nZSOlo&s=MkZ7oIBEye3LgYYnkzxUI6GGgURozfwkIZ6qr-kT5Cc&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101502nasa-26r-3Demail-2Dac3f-26l-3D025-2Dd4c-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=jWN0jCo7Hg75c7fvBSlsvxz7V2xQwyAYulad2nZSOlo&s=MkZ7oIBEye3LgYYnkzxUI6GGgURozfwkIZ6qr-kT5Cc&e=>) (10/14, Jasper) “Airbus SE will vie with Thales Alenia Space to develop a moon lander as part of Europe’s contribution to a new wave of manned missions to Earth’s satellite. The planemaker and the Franco-Italian venture have been selected by the European Space Agency to compete in the definition phase of the European Large Logistic Lander or EL3, according to statements Wednesday. Airbus plans to devise a lander able to carry 1.7 tons of cargo, with flights starting late this decade. While that’s not soon enough for a role in NASA’s Artemis mission to put people back on the moon in 2024, the craft could help provision a future base there with air, food, water and vital equipment.”

#### Blue Origin New Shepard Completes Mission With Precision NASA Tech On Board

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latest mission was the 13th overall, this is the seventh consecutive flight for the specific vehicle, which is a record. This flight was particularly important as there were 12 payloads onboard, including NASA Precision Lunar Landing technology.”

#### From Apollo To Artemis: The Woman Putting Boots Back On The Moon

CNET News <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101502nasa-26r-3Demail-2Dac3f-26l-3D027-2Db5e-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=jWN0jCo7Hg75c7fvBSIsvxz7V2xQwyAYulad2nZSOlo&s=LMR2hefwbXoHZvbx1r6WwgIJP SwFRwWO9nrs09rb-k&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101502nasa-26r-3Demail-2Dac3f-26l-3D027-2Db5e-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=jWN0jCo7Hg75c7fvBSIsvxz7V2xQwyAYulad2nZSOlo&s=LMR2hefwbXoHZvbx1r6WwgIJP SwFRwWO9nrs09rb-k&e=>) (10/14, Reilly) “In 2024, more than half a century after Neil Armstrong walked on the moon, NASA is planning to send humans back to the lunar surface. It’s the first crewed mission to the moon since the Apollo program ended in the early ‘70s. And for the first time, a woman will be on board. The mission is part of NASA’s Artemis program and represents an historic moment in space exploration. The program will see NASA focusing on human spaceflight beyond low-Earth orbit and the International Space Station, partnering with private companies to make missions more sustainable and building a gateway in lunar orbit to act as an outpost for further exploration in deep space.”

#### Queen Elizabeth’s Awkward Encounter With Neil Armstrong After Moon Landing

People <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101502nasa-26r-3Demail-2Dac3f-26l-3D028-2D7a1-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=jWN0jCo7Hg75c7fvBSIsvxz7V2xQwyAYulad2nZSOlo&s=wCRhg6Ln5U6glFKBHweAv44fUK B1D2F2HdC\\_oeX0PpM&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101502nasa-26r-3Demail-2Dac3f-26l-3D028-2D7a1-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=jWN0jCo7Hg75c7fvBSIsvxz7V2xQwyAYulad2nZSOlo&s=wCRhg6Ln5U6glFKBHweAv44fUK B1D2F2HdC_oeX0PpM&e=>) (10/14, Petit) “For Neil Armstrong, landing on the moon went smoother than meeting Queen Elizabeth! ... Ahead of Apollo 11, NASA asked leaders from 73 countries to share messages, which were reduced in size and etched on a disc that was left behind on the moon.”

#### NASA Awards \$370 Million To Private Companies To Aid Moon Exploration Push

SPACE <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101502nasa-26r-3Demail-2Dac3f-26l-3D029-2Db16-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=jWN0jCo7Hg75c7fvBSIsvxz7V2xQwyAYulad2nZSOlo&s=KAR7rFisx-4\\_1b-y6MTwmeX9pFzv991RRGOMm-XorwE&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101502nasa-26r-3Demail-2Dac3f-26l-3D029-2Db16-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=jWN0jCo7Hg75c7fvBSIsvxz7V2xQwyAYulad2nZSOlo&s=KAR7rFisx-4_1b-y6MTwmeX9pFzv991RRGOMm-XorwE&e=>) (10/14, Wall) “NASA has awarded \$370 million in ‘Tipping Point’ contracts designed to aid its push to get astronauts back to the moon and then on to Mars, agency officials announced today (Oct. 14). The funding is spread across 15 contracts to 14 different companies, including SpaceX, Astrobotic, Lockheed Martin, United Launch Alliance and Intuitive Machines.”

#### NASA Sets Targets For Artemis I Core Stage Hot Fire, Trip To Kennedy Space Center

Orlando (FL) Sentinel <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101502nasa-26r-3Demail-2Dac3f-26l-3D02a-2D5ee-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=jWN0jCo7Hg75c7fvBSIsvxz7V2xQwyAYulad2nZSOlo&s=X2\\_simUV-H8nSRw4Ny1Ykh4MWpxZAOo1pyueblG\\_wOM&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101502nasa-26r-3Demail-2Dac3f-26l-3D02a-2D5ee-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=jWN0jCo7Hg75c7fvBSIsvxz7V2xQwyAYulad2nZSOlo&s=X2_simUV-H8nSRw4Ny1Ykh4MWpxZAOo1pyueblG_wOM&e=>) (10/14, Tribou) “NASA sets targets for Artemis I core stage hot fire, trip to Kennedy Space Center”

## ESA Awards Mars, Moon Exploration Contracts To Airbus, TAS

Aviation Week <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101502nasa-26r-3Demail-2Dac3f-26l-3D02b-2De63-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=jWN0jCo7Hg75c7fvBSIsvxz7V2xQwyAYulad2nZSOlo&s=GcDLlqwu4HQslXojg7nNzERzYCfswNWTiBoXao5nJEg&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101502nasa-26r-3Demail-2Dac3f-26l-3D02b-2De63-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=jWN0jCo7Hg75c7fvBSIsvxz7V2xQwyAYulad2nZSOlo&s=GcDLlqwu4HQslXojg7nNzERzYCfswNWTiBoXao5nJEg&e=>) (10/14) “Airbus and Thales Alenia Space have been awarded contracts for major European Space Agency (ESA) contributions to NASA’s crewed Artemis lunar program and the robotic exploration of Mars...”

## NASA Funds Nokia Plan To Provide Cellular Service On Moon

UPI <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101502nasa-26r-3Demail-2Dac3f-26l-3D02c-2D4e0-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=jWN0jCo7Hg75c7fvBSIsvxz7V2xQwyAYulad2nZSOlo&s=b5KUWy80eiZzN2U6suNRGJb-O2FAEKwDxWlo5EVoHaM&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101502nasa-26r-3Demail-2Dac3f-26l-3D02c-2D4e0-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=jWN0jCo7Hg75c7fvBSIsvxz7V2xQwyAYulad2nZSOlo&s=b5KUWy80eiZzN2U6suNRGJb-O2FAEKwDxWlo5EVoHaM&e=>) (10/15, Brinkmann) “NASA will fund a project by Nokia to build a 4G cellular communication network on the moon with \$14.1 million, the space agency announced. That project was part of \$370 million in new contracts for lunar surface research missions NASA announced Wednesday. Most of the money went to large space companies like SpaceX and United Launch Alliance to perfect techniques to make and handle rocket propellant in space.”

## Solar System and Beyond

### Cassini Data Sheds Light On Saturn Formation And Enceladus Habitability

NASA Space Flight <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101502nasa-26r-3Demail-2Dac3f-26l-3D02d-2Dd12-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=jWN0jCo7Hg75c7fvBSIsvxz7V2xQwyAYulad2nZSOlo&s=lcYM1\\_bm62rZdIP5w4S1zzLU3gsqNXTAz5yf8aGdwqM&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101502nasa-26r-3Demail-2Dac3f-26l-3D02d-2Dd12-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=jWN0jCo7Hg75c7fvBSIsvxz7V2xQwyAYulad2nZSOlo&s=lcYM1_bm62rZdIP5w4S1zzLU3gsqNXTAz5yf8aGdwqM&e=>) (10/14, Gebhardt) “While its mission ended just over three years ago, data from NASA’s Cassini spacecraft continues to help scientists unlock the mysteries of the Saturnian system that contains more than 80 identified moons. In particular, new and updated research has helped determine the drift rate of Titan away from Saturn, in turn leading to a better understanding of how the ringed planet system formed, while a completely different set of analyses revealed the surface ages of Enceladus and provided key insights into the moon’s potential to harbor life.”

## Blue Full Moon Graces Halloween Sky

New York Daily News <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101502nasa-26r-3Demail-2Dac3f-26l-3D02e-2Dc45-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=jWN0jCo7Hg75c7fvBSIsvxz7V2xQwyAYulad2nZSOlo&s=j-4\\_IRn9E-AbFoCbvsCzkSmoQeAwm9Q4sPaul7abCcY&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101502nasa-26r-3Demail-2Dac3f-26l-3D02e-2Dc45-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=jWN0jCo7Hg75c7fvBSIsvxz7V2xQwyAYulad2nZSOlo&s=j-4_IRn9E-AbFoCbvsCzkSmoQeAwm9Q4sPaul7abCcY&e=>) (10/14, Braine) “Halloween Blue Full Moon might yet entice the Great Pumpkin”

As Of Right Now We Have A Mystery 'Mini-Moon' Orbiting Earth. Is It An Asteroid Or 'Space Junk?'

Forbes <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101502nasa-26r-3Demail-2Dac3f-26l-3D02f-2Dc01-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=jWN0jCo7Hg75c7fvBSIsvxz7V2xQwyAYulad2nZSOlo&s=Cvr9qCIAef0pDq6PR1KoC71I-gaaWLGedXrUHBF5JSo&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101502nasa-26r-3Demail-2Dac3f-26l-3D02f-2Dc01-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=jWN0jCo7Hg75c7fvBSIsvxz7V2xQwyAYulad2nZSOlo&s=Cvr9qCIAef0pDq6PR1KoC71I-gaaWLGedXrUHBF5JSo&e=>) (10/14, Carter) "Is it an asteroid? Could it be 'space junk?' ... NASA's Centaur rockets were used to send satellites into orbit and propel probes into space. NASA Is 2020 SO 'space junk?'"

Star Dies By "Spaghettification" As It's Consumed By Supermassive Black Hole

CBS News <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101502nasa-26r-3Demail-2Dac3f-26l-3D030-2D350-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=jWN0jCo7Hg75c7fvBSIsvxz7V2xQwyAYulad2nZSOlo&s=FXnnKzUMwTNazsMz8aeRMYAnIZ7Uqgl8JMhysSBADTQ&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101502nasa-26r-3Demail-2Dac3f-26l-3D030-2D350-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=jWN0jCo7Hg75c7fvBSIsvxz7V2xQwyAYulad2nZSOlo&s=FXnnKzUMwTNazsMz8aeRMYAnIZ7Uqgl8JMhysSBADTQ&e=>) (10/14, Lewis) "Astronomers have witnessed an extremely rare occurrence: the end of a star's life, as it's obliterated by a supermassive black hole. And this particular star's collapse was even more unique, because it experienced death by 'spaghettification' — and no, that's not science fiction. ... 'Because we caught it early, we could actually see the curtain of dust and debris being drawn up as the black hole launched a powerful outflow of material with velocities up to 10 000 km/s,' said Kate Alexander, a NASA Einstein Fellow at Northwestern University."

NASA Shares Cinematic Jupiter Flyby Video Made By Citizen Scientist

SlashGear <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101502nasa-26r-3Demail-2Dac3f-26l-3D031-2Df88-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=jWN0jCo7Hg75c7fvBSIsvxz7V2xQwyAYulad2nZSOlo&s=VXbR0uYcJGPhE9ZQzPb\\_RcdOnH-aPgroSrW3NfibQ6U&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101502nasa-26r-3Demail-2Dac3f-26l-3D031-2Df88-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=jWN0jCo7Hg75c7fvBSIsvxz7V2xQwyAYulad2nZSOlo&s=VXbR0uYcJGPhE9ZQzPb_RcdOnH-aPgroSrW3NfibQ6U&e=>) (10/14, Roston) "A citizen scientist has transformed NASA's raw Juno images into a cinematic flyby of Jupiter, giving the public an intimate look at the planet from a relatively close distance and in an entirely new way. NASA was impressed by the video enough to share it publicly with its followers, noting that the images were originally captured in early June."

Astronomers Watch A Black Hole Destroy A Star In Deep Space

Fox News <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101502nasa-26r-3Demail-2Dac3f-26l-3D032-2D200-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=jWN0jCo7Hg75c7fvBSIsvxz7V2xQwyAYulad2nZSOlo&s=1vwIZ3LmiSQghZtWEgXEssRj\\_xwks\\_kEW34u9XY5-kY&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101502nasa-26r-3Demail-2Dac3f-26l-3D032-2D200-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=jWN0jCo7Hg75c7fvBSIsvxz7V2xQwyAYulad2nZSOlo&s=1vwIZ3LmiSQghZtWEgXEssRj_xwks_kEW34u9XY5-kY&e=>) (10/14, Ciaccia) "Astronomers have discovered a black hole in deep space that ripped apart a star millions of light-years from Earth. The process, known as 'spaghettification,' saw the black hole create a blast of light seen 215 million light-years from Earth, the 'closest such flare recorded to date,' the researchers said in a statement. A light-year, which measures distance in space, is approximately 6 trillion miles. ... Finding these events (this one is known as AT2019qiz) is incredibly rare, but it was easier to analyze because it was discovered so early, Kate Alexander, NASA Einstein Fellow at Northwestern University, pointed out."

A Dead Soviet Satellite And A Discarded Chinese Rocket Body Have A 1-In-10 Chance Of Colliding In Space On Thursday



Business Insider <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101502nasa-26r-3Demail-2Dac3f-26l-3D033-2Db3-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=jWN0jCo7Hg75c7fvBSIsvxz7V2xQwyAYulad2nZSOlo&s=fAKWWPdgfY1JTRUDSOJ\\_MMIz pA2ILObrX80uyvpQAFg&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101502nasa-26r-3Demail-2Dac3f-26l-3D033-2Db3-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=jWN0jCo7Hg75c7fvBSIsvxz7V2xQwyAYulad2nZSOlo&s=fAKWWPdgfY1JTRUDSOJ_MMIz pA2ILObrX80uyvpQAFg&e=>)> (10/14, McFall-Johnsen) "A dead Soviet satellite and a discarded Chinese rocket body are speeding toward each other in space and could crash catastrophically on Thursday. ... A 10% chance may seem low, but NASA routinely moves the International Space Station when the orbiting laboratory faces just a 0.001% (1-in-100,000) chance or greater of colliding with an object."

#### Will Osiris-Rex's Impact With Bennu Cause The Asteroid To Hit Earth?

Aviation Week <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101502nasa-26r-3Demail-2Dac3f-26l-3D034-2Db7c-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=jWN0jCo7Hg75c7fvBSIsvxz7V2xQwyAYulad2nZSOlo&s=Jy9XC2HX72yFPpNbBnbhlaEcP8 UThwA6PLHIURApV0k&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101502nasa-26r-3Demail-2Dac3f-26l-3D034-2Db7c-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=jWN0jCo7Hg75c7fvBSIsvxz7V2xQwyAYulad2nZSOlo&s=Jy9XC2HX72yFPpNbBnbhlaEcP8 UThwA6PLHIURApV0k&e=>)> (10/14, Carreau) "NASA's Osiris-Rex will be lightly impacting Bennu, which has a 1 in 2,700 chance of impacting Earth in 175 years. Is NASA ensuring that the forces from Osiris-Rex will not make a Bennu impact with Earth more likely in the future, or are those forces so minimal that they will have no appreciable effect?"

#### NASA And Co Finally Discover How Pluto's Mountains Are Snow-Capped

Daily Express (UK) <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101502nasa-26r-3Demail-2Dac3f-26l-3D035-2Db9-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=jWN0jCo7Hg75c7fvBSIsvxz7V2xQwyAYulad2nZSOlo&s=yJJICT3wXNU5ASO-YdnhNROc3ZeZ9FdlhcnDUSgU0IQ&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101502nasa-26r-3Demail-2Dac3f-26l-3D035-2Db9-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=jWN0jCo7Hg75c7fvBSIsvxz7V2xQwyAYulad2nZSOlo&s=yJJICT3wXNU5ASO-YdnhNROc3ZeZ9FdlhcnDUSgU0IQ&e=>)> (10/14, Martin) "In 2015, NASA's New Horizons spacecraft took an image of Pluto showing mountain tops which wouldn't be amiss here on Earth. Images revealed the mountains were covered in snow – or so experts thought. But a landscape with ice-covered mountains had never been seen anywhere else in the solar system other than on Earth, leading to confusion."

#### This NASA Spacecraft Could Unveil The Origins Of Life

Seeker Network <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101502nasa-26r-3Demail-2Dac3f-26l-3D036-2D75f-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=jWN0jCo7Hg75c7fvBSIsvxz7V2xQwyAYulad2nZSOlo&s=R0zY1A\\_9bV8Xx5weKf-79z8GrTeuSws73G0vEK0NF8&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101502nasa-26r-3Demail-2Dac3f-26l-3D036-2D75f-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=jWN0jCo7Hg75c7fvBSIsvxz7V2xQwyAYulad2nZSOlo&s=R0zY1A_9bV8Xx5weKf-79z8GrTeuSws73G0vEK0NF8&e=>)> (10/14) "NASA's OSIRIS-REx launched at asteroid Bennu approx 4 years ago. After two landing rehearsals, OSIRIS-REx is ready for its long-awaited touchdown. Here's what NASA hopes to reveal with its samples."

#### Space Tech

#### NASA Makes A Significant Investment In On-Orbit Spacecraft Refueling

Ars Technica <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101502nasa-26r-3Demail-2Dac3f-26l-3D037-2Db7c-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=jWN0jCo7Hg75c7fvBSIsvxz7V2xQwyAYulad2nZSOlo&s=yJJICT3wXNU5ASO-YdnhNROc3ZeZ9FdlhcnDUSgU0IQ&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101502nasa-26r-3Demail-2Dac3f-26l-3D037-2Db7c-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=jWN0jCo7Hg75c7fvBSIsvxz7V2xQwyAYulad2nZSOlo&s=yJJICT3wXNU5ASO-YdnhNROc3ZeZ9FdlhcnDUSgU0IQ&e=>)>

3Fm-3D2020101502nasa-26r-3Demail-2Dac3f-26l-3D037-2D8f7-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-  
mHkTTiYCEf5ROyus&m=jWN0jCo7Hg75c7fvBSlsvxz7V2xQwyAYulad2nZSOlo&s=5MUqGIFM0giPpHa4NyS0X44iX9z3WbZ\_reJP7uworJ4&e=> (10/14, Berger) "If one wants to have Starships on Mars, one first has to refuel them in Earth orbit. NASA has reached an agreement with 14 US companies to develop technologies that will enable future modes of exploration in space and on the surface of the Moon. NASA says the value of these awards for 'Tipping Point' technologies is more than \$370 million."

#### NASA's Ridiculous Rover Concept Can Tackle Any Terrain

BGR <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101502nasa-26r-3Demail-2Dac3f-26l-3D038-2Db7f-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101502nasa-26r-3Demail-2Dac3f-26l-3D038-2Db7f-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=jWN0jCo7Hg75c7fvBSlsvxz7V2xQwyAYulad2nZSOlo&s=XcepDQjXEFHth9NQA7DcWSeUpBtXSQjmlhkFmMsuMlc&e=>)  
mHkTTiYCEf5ROyus&m=jWN0jCo7Hg75c7fvBSlsvxz7V2xQwyAYulad2nZSOlo&s=XcepDQjXEFHth9NQA7DcWSeUpBtXSQjmlhkFmMsuMlc&e=> (10/14, Wehner) "NASA just showed off one of its most incredible rover concepts ever. The rover is called DuAxel, and it's actually two rovers in one, along with a base station. The rovers can separate from each other and anchor themselves, allowing one another to explore hard-to-reach areas with safety."

#### A Taste Of James Webb's Potential

Cosmos Magazine (AUS) <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101502nasa-26r-3Demail-2Dac3f-26l-3D039-2D4b0-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101502nasa-26r-3Demail-2Dac3f-26l-3D039-2D4b0-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=jWN0jCo7Hg75c7fvBSlsvxz7V2xQwyAYulad2nZSOlo&s=_zMeWOAeRA703eOoXhUXV9KqsvuSg_V8XqctMmGFExl&e=>)  
mHkTTiYCEf5ROyus&m=jWN0jCo7Hg75c7fvBSlsvxz7V2xQwyAYulad2nZSOlo&s=\_zMeWOAeRA703eOoXhUXV9KqsvuSg\_V8XqctMmGFExl&e=> (10/14) "How good will NASA's new James Webb Space Telescope be? Good enough to uncover things never before seen by humanity, astronomers say. Two studies led by Madeline Marshall from Australia's ARC Centre of Excellence in All Sky Astrophysics in 3 Dimensions (ASTRO 3D) have found that the most powerful and complex space telescope ever built – due to launch late next year – will be able to reveal galaxies currently masked by powerful lights called quasars."

#### Simulations Show Webb Telescope Can Reveal Distant Galaxies Hidden In Quasars' Glare

Phys (UK) <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101502nasa-26r-3Demail-2Dac3f-26l-3D03a-2D70a-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101502nasa-26r-3Demail-2Dac3f-26l-3D03a-2D70a-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=jWN0jCo7Hg75c7fvBSlsvxz7V2xQwyAYulad2nZSOlo&s=wbafZUg_nAYB_zDChQE0OgpqoyRI6jWt-KpE4I5WVg&e=>)  
mHkTTiYCEf5ROyus&m=jWN0jCo7Hg75c7fvBSlsvxz7V2xQwyAYulad2nZSOlo&s=wbafZUg\_nAYB\_zDChQE0OgpqoyRI6jWt-KpE4I5WVg&e=> (10/14) "Quasars are the brightest objects in the universe and among the most energetic. They outshine entire galaxies of billions of stars. A supermassive black hole lies at the heart of every quasar, but not every black hole is a quasar. Only the black holes that are feeding most voraciously can power a quasar. Material falling into the supermassive black hole heats up, and causes a quasar to fiercely shine across the universe like a lighthouse beacon. ... A new study suggests that NASA's James Webb Space Telescope, set to launch in 2021, will be able to reveal the host galaxies of some distant quasars despite their small sizes and obscuring dust."

#### Podcast: Tech Talk On NASA's Dragonfly Mission To Titan

Aviation Week <[https://urldefense.proofpoint.com/v2/url?u=https-](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101502nasa-26r-3Demail-2Dac3f-26l-3D03a-2D70a-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=jWN0jCo7Hg75c7fvBSlsvxz7V2xQwyAYulad2nZSOlo&s=wbafZUg_nAYB_zDChQE0OgpqoyRI6jWt-KpE4I5WVg&e=>)

3A\_\_mailview.bulletinintelligence.com\_mailview.aspx-3Fm-3D2020101502nasa-26r-3Demail-2Dac3f-26l-3D03b-2D882-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=jWN0jCo7Hg75c7fvBSIsvxz7V2xQwyAYulad2nZSOlo&s=KbQGTdGXw9M\_tGC84rejmmvK4tPULrpH7cvKhoJdsSw&e=> (10/14, Morris) "Hello and welcome to this special Aviation Week Check 6 tech talk. I'm your host, Jeff Morris, the editor in chief of Aerospace Daily and Defense Report. And today we're joined by Dr. Elizabeth Turtle of the Johns Hopkins University applied physics laboratory. She's the principal investigator of NASA's upcoming Dragonfly mission, which seeks to explore the surface of Saturn's haze shrouded moon, Titan, with a novel Rotorcraft Lander."

Various

No content.

Other

Spacecraft May Hunt For Life As It Flies Past Venus This Week

Fox News <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101502nasa-26r-3Demail-2Dac3f-26l-3D03c-2D97d-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=jWN0jCo7Hg75c7fvBSIsvxz7V2xQwyAYulad2nZSOlo&s=rWQuPO50c2fVj1yb36DG7OQ4nyUY6gwNdTxv9DQUkkY&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101502nasa-26r-3Demail-2Dac3f-26l-3D03c-2D97d-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=jWN0jCo7Hg75c7fvBSIsvxz7V2xQwyAYulad2nZSOlo&s=rWQuPO50c2fVj1yb36DG7OQ4nyUY6gwNdTxv9DQUkkY&e=>) (10/14, Ciaccia) "Following the discovery of phosphine gas in the clouds of Venus last month, raising the prospects of life, a spacecraft is set to fly by the second planet in the solar system Wednesday. The craft, known as BepiColombo, is set to fly past the planet Wednesday night, reaching its closest point at 11:58 p.m. EST, according to the European Space Agency."

Virgin Galactic's Next Spaceflight Test Remains On Track To Launch In The Coming Weeks

CNBC <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101502nasa-26r-3Demail-2Dac3f-26l-3D03d-2D150-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=jWN0jCo7Hg75c7fvBSIsvxz7V2xQwyAYulad2nZSOlo&s=w74ZqBPJRIWys19fZ66QYDkMsaoYNI\\_btDFN5weUTAI&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101502nasa-26r-3Demail-2Dac3f-26l-3D03d-2D150-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=jWN0jCo7Hg75c7fvBSIsvxz7V2xQwyAYulad2nZSOlo&s=w74ZqBPJRIWys19fZ66QYDkMsaoYNI_btDFN5weUTAI&e=>) (10/14, Sheetz) "Space tourism venture Virgin Galactic on Wednesday said it remains on track to conduct its next test spaceflight in the coming weeks. 'We expect our first spaceflight from Spaceport America to occur later this fall and we are pleased to confirm that we are still on track to meet this timeframe,' the company said in a blog post."

Scientists Call For Serious Study Of 'Unidentified Aerial Phenomena'

LiveScience <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101502nasa-26r-3Demail-2Dac3f-26l-3D03e-2D526-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=jWN0jCo7Hg75c7fvBSIsvxz7V2xQwyAYulad2nZSOlo&s=wYual1zvu41dx9hyCEmUfbnpWVYTbRY-9CvJWszSpHA&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101502nasa-26r-3Demail-2Dac3f-26l-3D03e-2D526-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=jWN0jCo7Hg75c7fvBSIsvxz7V2xQwyAYulad2nZSOlo&s=wYual1zvu41dx9hyCEmUfbnpWVYTbRY-9CvJWszSpHA&e=>) (10/14, David) "The U.S. Navy recently admitted that, indeed, strangely behaving objects caught on video by jet pilots over the years are genuine head-scratchers. There are eyewitness accounts not only from pilots but from radar operators and technicians, too. ... Philippe Ailleris is a project controller at the European Space

Agency's Space Research and Technology Center in the Netherlands. He's also the primary force behind the Unidentified Aerospace Phenomena Observations Reporting Scheme, a project to facilitate the collection of UAP reports from both amateur and professional astronomers."

#### SpaceX Gets FCC Approval To Bid In \$16 Billion Rural-Broadband Auction

Ars Technica <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101502nasa-26r-3Demail-2Dac3f-26l-3D03f-2D3cb-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=jWN0jCo7Hg75c7fvBSIsvxz7V2xQwyAYulad2nZSOlo&s=c8bNXU-Cmv0QGCIYGFc2lw2X31rLjcQHF-b4AlzlzQ&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101502nasa-26r-3Demail-2Dac3f-26l-3D03f-2D3cb-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=jWN0jCo7Hg75c7fvBSIsvxz7V2xQwyAYulad2nZSOlo&s=c8bNXU-Cmv0QGCIYGFc2lw2X31rLjcQHF-b4AlzlzQ&e=>) (10/14, Brodtkin) "SpaceX is one of the 386 entities that have qualified to bid in a federal auction for rural-broadband funding. SpaceX has so far overcome the Federal Communications Commission's doubts about whether Starlink, its low-Earth orbit (LEO) satellite service, can provide latency of less than 100ms and thus qualify for the auction's low-latency tier."

#### How To Follow BepiColombo Spacecraft's Thrilling Venus Flyby Tonight

CNET News <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101502nasa-26r-3Demail-2Dac3f-26l-3D040-2Df23-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=jWN0jCo7Hg75c7fvBSIsvxz7V2xQwyAYulad2nZSOlo&s=ft8tRzVcz5HnoUqnIw23c3D-hb9mAtQ8VI6uITNgb1s&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101502nasa-26r-3Demail-2Dac3f-26l-3D040-2Df23-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=jWN0jCo7Hg75c7fvBSIsvxz7V2xQwyAYulad2nZSOlo&s=ft8tRzVcz5HnoUqnIw23c3D-hb9mAtQ8VI6uITNgb1s&e=>) (10/14, Kooser) "Venus is the star of the solar system right now after scientists discovered phosphine – a gas with possible biological origins – lurking in its clouds. Lucky for us, the BepiColombo spacecraft will be zooming past the planet this week on the way to its ultimate destination of Mercury. BepiColombo, a joint project of the European Space Agency (ESA) and Japanese space agency JAXA, will have some of its science instruments turned on as it makes a close approach to Venus on Wednesday night US time."

#### BepiColombo Spacecraft To Fly By Venus, Could Search For Life

Astronomy News <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101502nasa-26r-3Demail-2Dac3f-26l-3D041-2Dc8b-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=jWN0jCo7Hg75c7fvBSIsvxz7V2xQwyAYulad2nZSOlo&s=67hN63q124TpTilgDJrT9vLbyEREpSJTs\\_QSFGOtS0s&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101502nasa-26r-3Demail-2Dac3f-26l-3D041-2Dc8b-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=jWN0jCo7Hg75c7fvBSIsvxz7V2xQwyAYulad2nZSOlo&s=67hN63q124TpTilgDJrT9vLbyEREpSJTs_QSFGOtS0s&e=>) (10/14, Buongiorno) "In September, an international team of astronomers using ground-based radio telescopes showed evidence that Venus' cloud tops contain traces of phosphine. On Earth, only microbial life (and some industrial processes) create this toxic gas; there are no known non-biological processes that could make it on Venus. The observations thus raise the possibility of life on Venus. Or the gas could be due to some unknown chemical process — a less exciting but enticing alternative for scientists."

#### SpaceX To Explore Ways To Provide Weather Data To U.S. Military

Space News <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101502nasa-26r-3Demail-2Dac3f-26l-3D042-2D1ee-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=jWN0jCo7Hg75c7fvBSIsvxz7V2xQwyAYulad2nZSOlo&s=l5\\_fCUgBDqzHs79\\_Yj18Jr3VvfmLosnUX-s7OwrU29M&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101502nasa-26r-3Demail-2Dac3f-26l-3D042-2D1ee-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=jWN0jCo7Hg75c7fvBSIsvxz7V2xQwyAYulad2nZSOlo&s=l5_fCUgBDqzHs79_Yj18Jr3VvfmLosnUX-s7OwrU29M&e=>) (10/14, Erwin) "SpaceX is looking at ways it could provide weather data to the U.S. military. The company is working under a \$2 million six-month study contract from the U.S. Space Force's Space and Missile Systems Center."

Ron Baron, Who Made Billions Investing In Tesla, Thinks SpaceX 'Has A Chance To Be Just As Large'

CNBC <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101502nasa-26r-3Demail-2Dac3f-26l-3D043-2D5c4-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=jWN0jCo7Hg75c7fvBSIsvxz7V2xQwyAYulad2nZSOlo&s=HnGb7XHRaCYI-gYKumYfMMqvEDaGqxlo8CGCkPhj6LM&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101502nasa-26r-3Demail-2Dac3f-26l-3D043-2D5c4-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=jWN0jCo7Hg75c7fvBSIsvxz7V2xQwyAYulad2nZSOlo&s=HnGb7XHRaCYI-gYKumYfMMqvEDaGqxlo8CGCkPhj6LM&e=>) (10/14, Sheetz) "Billionaire investor Ron Baron, who says his stake in Tesla has made his firm 10 times its original investment, told CNBC on Wednesday that he expects similar growth from Elon Musk's space company. 'SpaceX I think has a chance to be just as large as Tesla,' Baron said on CNBC's 'Squawk Box.'"

SpaceX To Launch Satellite Tracking Rising Sea Levels

Bloomberg <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101502nasa-26r-3Demail-2Dac3f-26l-3D044-2D3f4-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=jWN0jCo7Hg75c7fvBSIsvxz7V2xQwyAYulad2nZSOlo&s=7YSr5R5xRKn6DlhS9XTSpDLm-x7\\_M20o7IPOVI-\\_lxA&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101502nasa-26r-3Demail-2Dac3f-26l-3D044-2D3f4-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=jWN0jCo7Hg75c7fvBSIsvxz7V2xQwyAYulad2nZSOlo&s=7YSr5R5xRKn6DlhS9XTSpDLm-x7_M20o7IPOVI-_lxA&e=>) (10/15, Tirone) "A new payload that Elon Musk's SpaceX will deliver into orbit next month will play a pivotal role in measuring sea level increases, potentially helping to spare economies from billions of euros in damages by the end of this century. The Sentinel-6 Michael Freilich satellite lifts off Nov. 10 aboard a Falcon 9 rocket that will be launched from Vandenberg Air Force Base in California. Its mission will be to track how the accelerating rise of sea levels are changing coastlines, threatening the habitat of more than a third of the world's population. The European Space Agency will provide details about the mission on Friday at 4 p.m. in Paris."

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## [EXTERNAL] NASA Morning Briefing for Tuesday, April 27, 2021

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Editor's Note

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False Alarm: No Space Junk Threat After All To SpaceX Crew

AP

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More Patrols, Fewer Boaters For SpaceX Splashdown Saturday

AP

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#### Jeff Bezos Challenges NASA Moon-contract Award To Elon Musk’s SpaceX

Washington Post

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#### Jeff Bezos’ Blue Origin Challenges NASA Contract Awarded To SpaceX For Artemis Moon Lander

CBS News

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#### NASA’s Mars Helicopter Takes Its Longest Flight

The Hill

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021042702nasa&r=email-e27f&l=007-962&t=c&data=04|01|randy.c.cruz@nasa.gov|3ee6e0429f364c05667e08d9096b72b1|7005d45845be48ae8140d43da96dd17b|0|0|637551179368690860|Unknown|TWFpbGZsb3d8eyJWljoicjQljoiv2luMzliLCJBTiI6Ikh1haWwiLCJXVCi6Mn0=|1000&sdata=o/yxNMYm0yLQcHIQsDTIDmwzKfbpYjnnWz84m/M7kik=&reserved=0>> (4/26, Romaine) “NASA’s Ingenuity helicopter continues to make history on Mars. On April 25, the helicopter took its third and longest flight on the Red Planet. Taking off at 4:31 a.m. EDT, or 12:33 p.m. Mars time, Ingenuity rose to a height of 16 feet, the same altitude as during its second flight, flying a distance of 164 feet, slightly more than half the length of a football field. Its top speed was 6.6 feet per second.”

## NASA Chief Nominee Bill Nelson Talks Artemis Program And More At Senate Hearing

### SPACE

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### Flight

## NASA Envisions Revived US Regional Air Transportation Network

### FlightGlobal

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021042702nasa&r=email-e27f&l=009-698&t=c&data=04|01|randy.c.cruz@nasa.gov|3ee6e0429f364c05667e08d9096b72b1|7005d45845be48ae8140d43da96dd17b|0|0|637551179368700817|Unknown|TWFPbGZsb3d8eyJWljoimc4wLjAwMDAiLCJQljoiv2luMzliLCJBTiI6I6k1haWwiLCJXVCi6Mn0=|1000&sdata=1fvooTxsMIBnL/ZleLTJZUEqo/ax1ny7I3+Ngz1/Z2A=&reserved=0>> (4/26, Hemmerdinger) “The USA’s many small, underused airports, combined with autonomous and electric-propulsion technologies, could enable a vast new US regional air transportation system. That is according to new NASA-published report that lays out a vision called ‘Regional Air Mobility’ – the idea that technology can make air travel between small US airports viable.”

### Earth

## Monday Night Presents The ‘Pink’ Supermoon, The Second Brightest Of The Year

### Washington Post

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## How To See The First Supermoon Of 2021

### Fortune

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021042702nasa&r=email-e27f&l=00b-f54&t=c&data=04|01|randy.c.cruz@nasa.gov|3ee6e0429f364c05667e08d9096b72b1|7005d45845be48ae8140d43da9>>

6dd17b|0|0|637551179368700817|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikl1haWwiLCJXVCi6Mn0=|1000&sdata=/DzYgxN06mZpPHXp8VYC6aG9Vvm3xDeBI1jXWVNMVFW=&reserved=0> (4/26, Hackett) “The first ‘supermoon’ of 2021 arrives Monday evening. ... ‘Different publications use slightly different thresholds for deciding which full moons qualify as supermoons, but for 2021 all agree the two full moons in April and May are supermoons,’ notes Gary Johnston, a program executive at NASA.”

#### A Full “Pink” Supermoon Will Illuminate The Night Sky Tonight

CBS News

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021042702nasa&r=email-e27f&l=00c-e12&t=c&data=04|01|randy.c.cruz@nasa.gov|3ee6e0429f364c05667e08d9096b72b1|7005d45845be48ae8140d43da96dd17b|0|0|637551179368710772|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikl1haWwiLCJXVCi6Mn0=|1000&sdata=GphXlgKDAL6n7Dwe/7C2tlg2CU/WpDYxO6Yf7kcqan0=&reserved=0>> (4/26, Lewis) “A bright, full moon will rise to illuminate the night sky Monday, and it’s not just any full moon — April marks the return of the ‘pink’ supermoon. ... ‘Different publications use slightly different thresholds for deciding which full moons qualify as supermoons, but for 2021 all agree the two full moons in April and May are supermoons,’ NASA’s Gordon Johnston said in a statement.”

#### Humans in Space

##### False Alarm: No Space Junk Threat After All To SpaceX Crew

AP

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021042702nasa&r=email-e27f&l=00d-7e4&t=c&data=04|01|randy.c.cruz@nasa.gov|3ee6e0429f364c05667e08d9096b72b1|7005d45845be48ae8140d43da96dd17b|0|0|637551179368710772|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikl1haWwiLCJXVCi6Mn0=|1000&sdata=nLbuaOn3L5i4Trqg1Ax/p9AhYkZbLmftFGO10JkY27k=&reserved=0>> (4/25, Dunn) “SpaceX’s four astronauts had barely settled into orbit last Friday when they were ordered back into their spacesuits because of a potential collision with orbiting junk. It turns out there was no object and no threat, the U.S. Space Command acknowledged Monday. The false alarm is under review.”

##### More Patrols, Fewer Boaters For SpaceX Splashdown Saturday

AP

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021042702nasa&r=email-e27f&l=00e-0d3&t=c&data=04|01|randy.c.cruz@nasa.gov|3ee6e0429f364c05667e08d9096b72b1|7005d45845be48ae8140d43da96dd17b|0|0|637551179368720729|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikl1haWwiLCJXVCi6Mn0=|1000&sdata=EHIYG3BYMT/yjkQ+oW9KXmjd8VIJgmBhlVfXekE8L8=&reserved=0>> (4/26, Dunn) “The astronauts flying SpaceX back to Earth this weekend urged boaters to stay safe by staying away from their capsule’s splashdown in the Gulf of Mexico. NASA and SpaceX are promising more Coast Guard patrols and fewer pleasure boaters for Saturday morning’s planned splashdown off the Florida coast — the company’s second return of a crew. The trip home for the four astronauts was delayed from Wednesday because of high winds forecast for the area.”

##### High Winds In Gulf Of Mexico Prompt Delay For Crew Dragon Return To Earth

CBS News

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021042702nasa&r=email-e27f&l=00e-0d3&t=c&data=04|01|randy.c.cruz@nasa.gov|3ee6e0429f364c05667e08d9096b72b1|7005d45845be48ae8140d43da96dd17b|0|0|637551179368720729|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikl1haWwiLCJXVCi6Mn0=|1000&sdata=EHIYG3BYMT/yjkQ+oW9KXmjd8VIJgmBhlVfXekE8L8=&reserved=0>>

42702nasa&r=email-e27f&l=00f-

fc0&t=c&data=04|01|randy.c.cruz@nasa.gov|3ee6e0429f364c05667e08d9096b72b1|7005d45845be48ae8140d43da96dd17b|0|0|637551179368720729|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQljojV2luMzliLCJBTiI6I6k1haWwiLCJXVCi6Mn0=|1000&sdata=gp5pxdzJ1JIUaVx0mpSFTQDMmQaydTAHzngoZnWVRo8=&reserved=0> (4/26, Harwood) "Four astronauts wrapping up a five-and-a-half-month stay aboard the International Space Station are delaying their return to Earth, from Wednesday to Saturday, because of predicted high winds in the Gulf of Mexico splashdown zone, NASA announced late Monday. Crew Dragon commander Michael Hopkins, Victor Glover, Shannon Walker and Japanese astronaut Soichi Noguchi, who launched last November 15 in the first operational flight of a SpaceX ferry ship — Crew-1 — now plan to undock from the lab on Friday at 5:55 p.m. ET. That will set up a splashdown in the Gulf of Mexico off the Florida Panhandle coast around 11:36 a.m. Saturday."

#### SpaceX Set For Busy Day Of Starlink Launch And Crew Dragon Splashdown

Florida Today

<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021042702nasa&r=email-e27f&l=010-cd4&t=c&data=04|01|randy.c.cruz@nasa.gov|3ee6e0429f364c05667e08d9096b72b1|7005d45845be48ae8140d43da96dd17b|0|0|637551179368730679|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQljojV2luMzliLCJBTiI6I6k1haWwiLCJXVCi6Mn0=|1000&sdata=pNDT3H41p2cYW6yZar/zW15pF/DxyFYwa0Hca1Vjj+s=&reserved=0> (4/26, Joy) "Update (Monday): Due to weather conditions, NASA and SpaceX are now targeting Saturday for the splashdown of Crew-1 astronauts, the agency said late Monday. Departure from the ISS is planned for 5:55 p.m. Eastern time Friday followed by Crew Dragon splashdown at 11:36 a.m. Saturday."

#### Get Ready For The NASA And SpaceX Crew-1 Splashdown

Discovery Channel

<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021042702nasa&r=email-e27f&l=011-2fc&t=c&data=04|01|randy.c.cruz@nasa.gov|3ee6e0429f364c05667e08d9096b72b1|7005d45845be48ae8140d43da96dd17b|0|0|637551179368730679|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQljojV2luMzliLCJBTiI6I6k1haWwiLCJXVCi6Mn0=|1000&sdata=Ky14uRr+EbYa8E4zn3DIdMHvfjOU1qfJqQT1ku7auc=&reserved=0> (4/26, Rosenfield) "The first operational crewed flight of the SpaceX Crew Dragon launched to the International Space Station from the Kennedy Space Center Launch Pad 39A on November 15, 2020. Crew-1 docked with the ISS the next day. It's now time for NASA astronauts Michael Hopkins, Victor Glover, Shannon Walker, and JAXA astronaut Soichi Noguchi to return home."

#### Watch SpaceX's Crew-1 Astronauts Plummet To An Ocean Landing On Saturday, Ending The Longest Human Spaceflight In NASA History

Insider

<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021042702nasa&r=email-e27f&l=012-642&t=c&data=04|01|randy.c.cruz@nasa.gov|3ee6e0429f364c05667e08d9096b72b1|7005d45845be48ae8140d43da96dd17b|0|0|637551179368740636|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQljojV2luMzliLCJBTiI6I6k1haWwiLCJXVCi6Mn0=|1000&sdata=fhT1SwmRM/o4KuINtIjamvsSzDsdTNp5sB6aGTcyO9c=&reserved=0> (4/26, McFall-Johnsen) "A gumdrop-shaped fireball is set to plummet to Earth on Saturday. SpaceX's Crew Dragon spaceship, carrying four astronauts for NASA, is scheduled to plow through the atmosphere at 25 times the speed of sound, deploy four parachutes as it approaches the coast of Florida, then glide to a gentle splashdown in the ocean at 11:36 a.m ET."

#### SpaceX Crew-1 Dragon Astronauts Prepare For April 28 Return To Earth

## Aviation Week

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“Keeping the International Space Station’s (ISS) U.S. segment steadily staffed at five astronauts is continuing to significantly contribute to the research and technology demonstrations underway aboard the orbiting science laboratory, says NASA astronaut Shannon Walker, whose second voyage to...”

## Spot The SpaceX Falcon 9 Rocket Part Hiding In This ISS Astronaut Photo

### CNET News

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021042702nasa&r=email-e27f&l=014-7c5&t=c&data=04|01|randy.c.cruz@nasa.gov|3ee6e0429f364c05667e08d9096b72b1|7005d45845be48ae8140d43da96dd17b|0|0|637551179368750596|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQljojV2luMzliLCJBTiI6Ikh1haWwiLCJXVCi6Mn0=|1000&sdata=+3AhYiNdx3Wh+AXnwIbc1cWocCdqSdQIVfSQosuuBdg=&reserved=0>> (4/26, Kooser) “European Space Agency astronaut Thomas Pesquet was treated to some spectacular sightseeing on his way to the ISS over the weekend. A member of the SpaceX Crew-2 mission, Pesquet shared a couple of mind-bending views of the journey that are like a space version of Where’s Waldo.”

## The SpaceX Crew Dragon Had A Near-miss With Space Junk

### BGR

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## SpaceX Dragon Rocket Has ‘Near Miss’ With Space Junk En Route To Space Station

### Daily Mirror (UK)

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021042702nasa&r=email-e27f&l=016-c1d&t=c&data=04|01|randy.c.cruz@nasa.gov|3ee6e0429f364c05667e08d9096b72b1|7005d45845be48ae8140d43da96dd17b|0|0|637551179368750596|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQljojV2luMzliLCJBTiI6Ikh1haWwiLCJXVCi6Mn0=|1000&sdata=+H1re+fYxRgdIsNedhgUsVB/+ernBuawzjBQuRmUG90=&reserved=0>> (4/26, Gilbody-Dickerson) “Footage of the moment a piece of space junk narrowly missed four astronauts on board the SpaceX’s Crew Dragon capsule has emerged. The spacecraft spectacularly docked at the station on Saturday, nearly 24 hours after its departure from the Kennedy Space Centre in Florida. But the NASA Crew-2 mission had a moment of suspense on Friday as the spacecraft escaped being missed by a piece of debris, known as conjunction, by a whisker.”

## NASA Crew-2 Reaches ISS: Here’s What’s Next For SpaceX

## SlashGear

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## Pomona Native Victor Glover, His NASA-SpaceX Crewmates Reflect On 6 Months At Space Station

### Los Angeles Daily News

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021042702nasa&r=email-e27f&l=018-b91&t=c&data=04|01|randy.c.cruz@nasa.gov|3ee6e0429f364c05667e08d9096b72b1|7005d45845be48ae8140d43da96dd17b|0|0|637551179368760552|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQljojV2luMzliLCJBTiI6Ikh1haWwiLCJXVCi6Mn0=|1000&sdata=Uxozdtus0S5AssnHO6RDBEacbYKQdNknHTFqILBAthM=&reserved=0>> (4/26, Rosenfeld) "The feeling that overcame astronaut and Pomona native Victor Glover when he looked back at Earth for the first time after the Resilience SpaceX Crew-1 Dragon safely reached orbit in November was one that he said he wanted to remember. So he pulled out his smartphone to record his thoughts, later posting the video on Twitter. 'It wasn't about the view,' he said during a media briefing Monday, April 26, 'but how the view made me feel. Every time I look out the window in the cupola (observatory module on the ISS), I feel the same way. Earth is amazing. It's beautiful. It protest us, so we should work hard to protect it.'"

## Astronauts Arrive At ISS

### KIAH-TV Houston

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021042702nasa&r=email-e27f&l=019-8f9&t=c&data=04|01|randy.c.cruz@nasa.gov|3ee6e0429f364c05667e08d9096b72b1|7005d45845be48ae8140d43da96dd17b|0|0|637551179368770507|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQljojV2luMzliLCJBTiI6Ikh1aWwiLCJXVCi6Mn0=|1000&sdata=Q8atWnbymLZrJjMxHxs7pegVe6P4dRx+0wBvdiiX9PM=&reserved=0>> (4/26)"Well over the weekend four astronauts on board the SpaceX Dragon capsule safely docked with the International Space Station. This comes after the capsule barely missed a piece of what's being called a UFO."

## Crew 1 Astronauts To Return To Earth

### KNBC-TV Los Angeles

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021042702nasa&r=email-e27f&l=01a-714&t=c&data=04|01|randy.c.cruz@nasa.gov|3ee6e0429f364c05667e08d9096b72b1|7005d45845be48ae8140d43da96dd17b|0|0|637551179368770507|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQljojV2luMzliLCJBTiI6Ikh1haWwiLCJXVCi6Mn0=|1000&sdata=3buBjdCSanjlyv9NboF3kWX32BdNcCMk1kOcTrTV67s=&reserved=0>> (4/26) "We are hearing from the four astronauts who will be leaving the International Space Station later this week. SpaceX Crew 1 mission astronauts Shannon Harper, Michael Hopkins, Victor Glover and Soichi Noguchi have docked."

## Moon to Mars

## Jeff Bezos Challenges NASA Moon-contract Award To Elon Musk's SpaceX

Washington Post

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021042702nasa&r=email-e27f&l=01b-4da&t=c&data=04|01|randy.c.cruz@nasa.gov|3ee6e0429f364c05667e08d9096b72b1|7005d45845be48ae8140d43da96dd17b|0|0|637551179368780462|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQljojV2luMzliLCJBTiI6I6k1haWwiLCJXVCi6Mn0=|1000&sdata=DcwjVc+jZoycZlaA8jcxB4Cxm0YNb6cG/Yrlnis7sfc=&reserved=0>> (4/26, Davenport) “Just over a week after it lost out on a high-profile and lucrative contract to build the next spacecraft that would land astronauts on the moon, Jeff Bezos’s Blue Origin filed a protest over NASA’s decision, saying it was flawed. NASA awarded Elon Musk’s SpaceX a \$2.9 billion contract to build the lunar lander, a huge victory that surprised many in the space industry.”

## Jeff Bezos' Blue Origin Files Protest Over SpaceX Lunar Contract

UPI

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021042702nasa&r=email-e27f&l=01c-934&t=c&data=04|01|randy.c.cruz@nasa.gov|3ee6e0429f364c05667e08d9096b72b1|7005d45845be48ae8140d43da96dd17b|0|0|637551179368780462|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQljojV2luMzliLCJBTiI6I6k1haWwiLCJXVCi6Mn0=|1000&sdata=B8ZYm20MNPUBfzpwzLnFeq2R3roTgEzMdBEt1KK5Tg=&reserved=0>> (4/26, Brinkmann) “Amazon founder Jeff Bezos’ rocket company, Blue Origin, filed a formal protest Monday over NASA’s April 16 decision to award Elon Musk’s SpaceX a \$2.9 billion lunar lander contract. Blue Origin lodged the protest with the U.S. Government Accountability Office, an independent, non-partisan agency that works for Congress.”

## Jeff Bezos' Blue Origin Protests NASA's \$2.9 Billion Moon Contract With SpaceX

The Verge

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021042702nasa&r=email-e27f&l=01d-8fb&t=c&data=04|01|randy.c.cruz@nasa.gov|3ee6e0429f364c05667e08d9096b72b1|7005d45845be48ae8140d43da96dd17b|0|0|637551179368790418|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQljojV2luMzliLCJBTiI6I6k1haWwiLCJXVCi6Mn0=|1000&sdata=GriHuAffI9Ax4TqvyP6FBQmINm6V99MMUskFXYGiepg=&reserved=0>> (4/26, Roulette) “Jeff Bezos’ space company Blue Origin is fighting NASA’s decision to award SpaceX \$2.9 billion to land astronauts on the Moon by 2024. NASA’s Human Landing System program, which funded the development of three rival lunar lander prototypes (including Blue Origin’s), was expected to pick two of those landers in April. But NASA opted for just one — SpaceX’s Starship — because of short funding from Congress.”

## Jeff Bezos' Blue Origin Challenges NASA Contract Awarded To SpaceX For Artemis Moon Lander

CBS News

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## Blue Origin Protests NASA Human Landing System Award

Space News

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## Blue Origin Files Protest Over NASA HLS Award To SpaceX

Aviation Week

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## Blue Origin Protests NASA's Awarding Of Moon Lander Contract To SpaceX

Reuters

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## Bezos's Rocket Maker Protests NASA's Moon Lander Award To SpaceX

Bloomberg

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the protest. Absent those problems, Blue Origin claimed that NASA would also have selected its proposal, which was submitted by a team that included Lockheed Martin Corp., Northrop Grumman Corp. and Draper, an engineering and avionics firm.”

#### Bezos' Blue Origin Protests NASA Awarding Astronaut Lunar Lander Contract To Musk's SpaceX

CNBC

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#### Blue Origin Is Challenging SpaceX’s Artemis Lander Contract From NASA

Engadget

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#### Jeff Bezos’ Rocket Company Challenges NASA Over SpaceX Moon Lander Deal

New York Times

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#### Elon Musk Teases Jeff Bezos ‘can’t Get It Up’ In Battle Over Space Contract

Fox Business

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18d&t=c&data=04|01|randy.c.cruz@nasa.gov|3ee6e0429f364c05667e08d9096b72b1|7005d45845be48ae8140d43da96dd17b|0|0|637551179368830245|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQljojV2luMzliLCJBTiI6lk1haWwiLCJXVCi6Mn0=|1000&sdata=1FxrYJsnT+OJKA+tUdUV8lh02sB44eTaGg/FGHoYcw=&reserved=0> (4/26, Lea) "Tesla and SpaceX CEO Elon Musk teased Amazon founder Jeff Bezos on Monday night after it was reported that Bezos' Blue Origin planned to contest a NASA award recently given to SpaceX. Musk said in a Twitter post that Bezos couldn't 'get it up' to orbit."

### Elon Musk Trolls Jeff Bezos' Blue Origin After It Challenges SpaceX's NASA Lunar Lander Contract

Insider

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b0b&t=c&data=04|01|randy.c.cruz@nasa.gov|3ee6e0429f364c05667e08d9096b72b1|7005d45845be48ae8140d43da96dd17b|0|0|637551179368830245|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQljojV2luMzliLCJBTiI6lk1haWwiLCJXVCi6Mn0=|1000&sdata=FtGQtP+5qQfHB3kVyixnpwkk1Ssvxcl0BeFmTEp+Ybg=&reserved=0> (4/26, Sonnemaker) "SpaceX CEO Elon Musk took another jab at rival billionaire Jeff Bezos' space startup, Blue Origin, on Monday amid a battle over a \$2.9 billion contract to build a lunar lander for NASA. The New York Times reported Monday Blue Origin had filed a protest with the Government Accountability Office to challenge NASA's decision to award the exclusive contract to SpaceX."

### Blue Origin Protests NASA's New \$2.9B Contract With SpaceX

Law360

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326&t=c&data=04|01|randy.c.cruz@nasa.gov|3ee6e0429f364c05667e08d9096b72b1|7005d45845be48ae8140d43da96dd17b|0|0|637551179368840202|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQljojV2luMzliLCJBTiI6lk1haWwiLCJXVCi6Mn0=|1000&sdata=rif0TPNtF5Dmh3BFPhY2gXOVfWkclEJSzHBn4TAVcNI=&reserved=0> (4/26) "Jeff Bezos' aerospace manufacturer Blue Origin on Monday protested NASA's recently awarded \$2.89 billion moon lander contract with rival SpaceX, arguing that the federal government's selection process was 'flawed and unreasonable' and should be set aside. Earlier this month, NASA announced that it had picked fellow billionaire Elon Musk's SpaceX as its sole contractor to help develop the first commercial human lander that will transport the next pair of American astronauts to the moon. A third company, Dynetics, had also competed for the contract."

### The Moon Is Going To Get Its Own 4G Network, Thanks To This Rugged Lunar Rover

ZDNet

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807&t=c&data=04|01|randy.c.cruz@nasa.gov|3ee6e0429f364c05667e08d9096b72b1|7005d45845be48ae8140d43da96dd17b|0|0|637551179368840202|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQljojV2luMzliLCJBTiI6lk1haWwiLCJXVCi6Mn0=|1000&sdata=EuOjH3PjKkt4Hjpi/0MqyP07ehRU9zfEjRlxKCozjzM=&reserved=0> (4/26, Leprince-Ringuet) "In addition to food, sleep or spacesuit design, equally as important to life in outer space is appropriate communication. From connecting offshore oil rigs and underground mines, to letting climbers livestream from 5,200 meters above sea level on Mount Everest: 4G networks are already capable of reaching some of the most remote spots on the planet. Now, the technology is gearing up for its next, extra-terrestrial challenge – to connect the Moon. NASA is planning to establish a sustainable human presence on the Moon by the end of the decade as part of its Artemis program, and with such a project inevitably comes a host of logistics issues."

### Elon Musk Says A 'Bunch Of People Will Probably Die' When Humans Fly To Mars: 'Volunteers Only'

## People

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## NASA’s Ingenuity Helicopter Sets New Speed Record During Third Flight On Mars

### CBS News

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## NASA’s Mars Helicopter Takes Its Longest Flight

### The Hill

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## NASA’s Ingenuity Helicopter On Mars Sets Speed Record In Third Flight

### CNET News

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## NASA Mars Ingenuity Helicopter Takes First Aerial Color Photos

## People

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NASA's Mars Helicopter Ingenuity Took Its First Aerial Color Photos Of The Red Planet's Surface. Take A Look.

## Insider

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Ingenuity Performs Third Mars Flight As Final, Most Challenging Tests Await

## Space News

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NASA's Ingenuity Helicopter Flew On Mars For The Third Time, And Perseverance Took A Video

## Mashable

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NASA's Mars Helicopter Just Took An Extremely Long Flight

BGR

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#### NASA's First Color Photo From The Mars Ingenuity Helicopter Shows Us The Red Planet's Reds

Mashable

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#### Ingenuity Helicopter Travels Faster, Farther During Third Mars Flight

Aviation Week

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#### The Space Review: With Starship, NASA Is Buying The Moon, But Investing In Mars

Space Review

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Planet—a true ‘Moon-to-Mars’ strategy if there ever was one.”

## NASA Chief Nominee Bill Nelson Talks Artemis Program And More At Senate Hearing

SPACE

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## How Many Moon Craters Are Named For Women? Fewer Than You’d Guess.

New York Times

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## Solar System and Beyond

### China Will Be First Country After America To Leave Solar System

Houston Chronicle

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### Hubble Shares A Photo Of One Of The Brightest Stars In The Milky Way

SlashGear

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42702nasa&r=email-e27f&l=039-f81&t=c&data=04|01|randy.c.cruz@nasa.gov|3ee6e0429f364c05667e08d9096b72b1|7005d45845be48ae8140d43da96dd17b|0|0|637551179368909890|Unknown|TWFpbGZsb3d8eyJWljoimc4wLjAwMDAiLCJQljoiv2luMzliLCJBTiI6Ik1haWwiLCJXVCi6Mn0=|1000&sdata=fyEzZ/FfJYmwMbVReNHfaieS/h1yY++EnKDoY2oR2ZU=&reserved=0> (4/26, McGlaun) "Hubble is celebrating over three decades orbiting the Earth and taking pictures of beautiful celestial objects scattered around the galaxy. To celebrate its 31st birthday, astronomers aimed Hubble at a star in the Milky Way galaxy called AG Carinae. ... NASA says stars like AG Carinae are very rare, with fewer than 50 residing in our local group of galaxies."

Space Tech

No content.

Various

The Space Review: A Message Of Continuity From NASA's Next Administrator

Space Review

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How This Fresno Student Caught The Attention Of NASA And Graduation Plans For 2021

Fresno (CA) Bee

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Other

Starship SN15 Conducts A Static Fire Test

NASA Space Flight

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Bergin) “Starship SN15 conducted a pre-launch Static Fire test Monday, tasked with setting the scene this week for a flight that could pave the way toward an orbital flight in the coming months. The groundwork for the push to orbit is taking place both at the Orbital Launch Site and elsewhere in Texas as a new dual-bay Raptor test stand nears completion.”

#### SpaceX Fires Up Starship SN15 Prototype To Prep For Test Flight

SPACE

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#### SpaceX Strikes Deal With Port Of Long Beach (For Real This Time, Mayor Says)

Los Angeles Times

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#### ULA Delta IV Heavy Launches NROL-82 National Security Mission

NASA Space Flight

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#### US Spy Satellite Launches Into Space From California

AP

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webcast until the second stage ignited and the protective cover over the satellite was jettisoned.”

## China's State Rocket Company Unveils Rendering Of A Starship Look-alike

Ars Technica

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## **[EXTERNAL] NASA Morning Briefing for Tuesday, July 28, 2020**

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### NASA's Next Mars Rover Is Brawniest And Brainiest One Yet

Associated Press <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D003-2D102-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=pQSJOqXTCZo5xRvM\\_qUOH\\_4mVaUXbpoHVTIft1upbPI&s=tXcQcFrMgWLZMTJoBOZoMXYSlpvhW0lqXGfCWtqjjIU&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D003-2D102-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=pQSJOqXTCZo5xRvM_qUOH_4mVaUXbpoHVTIft1upbPI&s=tXcQcFrMgWLZMTJoBOZoMXYSlpvhW0lqXGfCWtqjjIU&e=>) (7/27, Dunn) “With eight successful Mars landings, NASA is upping the ante with its newest rover. The spacecraft Perseverance – set for liftoff this week – is NASA’s brawniest and brainiest Martian rover yet.”

### How NASA Found The Ideal Hole On Mars To Land In

New York Times <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D004-2D93a-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=pQSJOqXTCZo5xRvM\\_qUOH\\_4mVaUXbpoHVTIft1upbPI&s=kH67IU2Ee2iwJPYz\\_sD6AYXTRr-YeJ4GA1Y67PSUDcw&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D004-2D93a-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=pQSJOqXTCZo5xRvM_qUOH_4mVaUXbpoHVTIft1upbPI&s=kH67IU2Ee2iwJPYz_sD6AYXTRr-YeJ4GA1Y67PSUDcw&e=>) (7/28, Chang) “Here was one of the places with clear signs that liquid water flowed when the planet was warmer and wetter. The image, taken by NASA’s Odyssey orbiter, showed a sinuous dried-up river channel leading into one side of the crater. On the other side of the crater, part of the rim has collapsed, as if it had been swept away by flowing water.”

### Too Much Mars? Let's Discuss Other Worlds

New York Times <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D005-2Dc10-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=pQSJOqXTCZo5xRvM\\_qUOH\\_4mVaUXbpoHVTIft1upbPI&s=yLjNhLpvZn\\_KTfp4hoqZAq5m16nOANtOTv0MGNOYpck&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D005-2Dc10-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=pQSJOqXTCZo5xRvM_qUOH_4mVaUXbpoHVTIft1upbPI&s=yLjNhLpvZn_KTfp4hoqZAq5m16nOANtOTv0MGNOYpck&e=>) (7/28, Boyle, Brown) “Three government space agencies around the world are getting ready to return to Mars this summer. Along with China and the United Arab Emirates, the United States plans to land the fifth NASA rover, Perseverance, on the red planet (along with a small, experimental helicopter, Ingenuity). But the rover’s most important job will be scooping up and caching some samples that humans or robots may eventually retrieve.”

### Splashdown Of NASA Astronauts Off The Coast Of Florida In Less Than A Week

Florida Today <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D006-2D9d5-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=pQSJOqXTCZo5xRvM\\_qUOH\\_4mVaUXbpoHVTIft1upbPI&s=v-WIeZV7SFqhDYyEsTEXb3ORZoTj9yltFSBzQmdHtns&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D006-2D9d5-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=pQSJOqXTCZo5xRvM_qUOH_4mVaUXbpoHVTIft1upbPI&s=v-WIeZV7SFqhDYyEsTEXb3ORZoTj9yltFSBzQmdHtns&e=>) (7/27) “What goes up must come down – in this case it will be astronauts Bob Behnken and Doug Hurley yielding to the laws of gravity as they return to Earth in the SpaceX Dragon spacecraft and splashdown in the ocean – a feat that hasn’t been done in 45 years since the last Apollo mission in 1975. The capsule, named Endeavor, plans to undock from the International Space Station on Saturday,

August 1 at 7:34 p.m. EDT and will come splashing down on Sunday, August 2 at 2:42 p.m. EDT.”

#### NASA Will Send A Balloon The Size Of A Football Field To Study How Stars Form

CNN <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D007-2D8e5-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=pQSJOqXTCZo5xRvM\\_qUOH\\_4mVaUXbpoHVTIf1upbPI&s=D82Odm7ViefTTxQVaHrjHNmrQzR093x2QoYlo5dvzMs&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D007-2D8e5-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=pQSJOqXTCZo5xRvM_qUOH_4mVaUXbpoHVTIf1upbPI&s=D82Odm7ViefTTxQVaHrjHNmrQzR093x2QoYlo5dvzMs&e=>) (7/27, Andrew) “NASA plans to send an enormous balloon to the edge of Earth’s stratosphere in search of secrets about how stars and planets form. The space agency’s ASTHROS mission will depart from Antarctica in December 2023 and spend three weeks in the stratosphere, the section of the atmosphere where the ozone layer sits. Its components include a balloon the size of a football field and a specialized far-infrared telescope designed to pick up light the human eye can’t detect.”

Flight

No content.

Earth

No content.

Humans in Space

#### Splashdown Of NASA Astronauts Off The Coast Of Florida In Less Than A Week

Florida Today <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D008-2D9ee-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=pQSJOqXTCZo5xRvM\\_qUOH\\_4mVaUXbpoHVTIf1upbPI&s=HRjArJOXTBR4TZN5wa4diX4N26nUX45DOr0PacfDTAE&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D008-2D9ee-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=pQSJOqXTCZo5xRvM_qUOH_4mVaUXbpoHVTIf1upbPI&s=HRjArJOXTBR4TZN5wa4diX4N26nUX45DOr0PacfDTAE&e=>) (7/27) “What goes up must come down – in this case it will be astronauts Bob Behnken and Doug Hurley yielding to the laws of gravity as they return to Earth in the SpaceX Dragon spacecraft and splashdown in the ocean – a feat that hasn’t been done in 45 years since the last Apollo mission in 1975. The capsule, named Endeavor, plans to undock from the International Space Station on Saturday, August 1 at 7:34 p.m. EDT and will come splashing down on Sunday, August 2 at 2:42 p.m. EDT.”

#### SpaceX Crew Dragon Demo-2: How To Watch NASA Astronauts Return To Earth

CNET News <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D009-2D337-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=pQSJOqXTCZo5xRvM\\_qUOH\\_4mVaUXbpoHVTIf1upbPI&s=MzqxrBSO-lbGcLYRXCW155gFU7R8i1tpcDcfOrzR-oU&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D009-2D337-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=pQSJOqXTCZo5xRvM_qUOH_4mVaUXbpoHVTIf1upbPI&s=MzqxrBSO-lbGcLYRXCW155gFU7R8i1tpcDcfOrzR-oU&e=>) (7/27, Kooser) “The SpaceX Crew Dragon Demo-2 mission has so far been a triumph for NASA’s Commercial Crew Program. Astronauts Bob Behnken and Doug Hurley had a smooth launch and ride to the International Space Station in late May. Now they’re ready to come back down.”

#### NASA, SpaceX Preparing To Bring Crew Dragon Home This Week

Ars Technica <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D009-2D337-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=pQSJOqXTCZo5xRvM\\_qUOH\\_4mVaUXbpoHVTIf1upbPI&s=MzqxrBSO-lbGcLYRXCW155gFU7R8i1tpcDcfOrzR-oU&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D009-2D337-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=pQSJOqXTCZo5xRvM_qUOH_4mVaUXbpoHVTIf1upbPI&s=MzqxrBSO-lbGcLYRXCW155gFU7R8i1tpcDcfOrzR-oU&e=>)



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FQIE3ZcuJp3Yk-w04tY&e=> (7/27) "Nearly two months have passed since a Crew Dragon spacecraft carrying two astronauts blasted off the face of the Earth and delivered NASA astronauts Doug Hurley and Bob Behnken into orbit. Now, it's time to come home. So far, this test flight of the SpaceX-built crew spacecraft has gone nearly flawlessly since its May 30 launch."

#### Top 10 Things To Know For NASA's SpaceX Demo-2 Return

Space Daily <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D00b-2Dead-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=pQSJOqXTCZo5xRvM\\_qUOH\\_4mVaUXbpoHVTIf1upbPI&s=07ncFfBT6jDOAKZkpaEZG5X9KgxuD2CApsewfqsO8m0&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D00b-2Dead-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=pQSJOqXTCZo5xRvM_qUOH_4mVaUXbpoHVTIf1upbPI&s=07ncFfBT6jDOAKZkpaEZG5X9KgxuD2CApsewfqsO8m0&e=>) (7/28) "History was made May 30 when NASA astronauts Robert Behnken and Douglas Hurley launched from American soil in a commercially built and operated American crew spacecraft on its way to the International Space Station. The SpaceX Dragon Endeavour spacecraft lifted off on the company's Falcon 9 rocket from Launch Complex 39A at NASA's Kennedy Space Center in Florida and docked with the space station on May 31."

#### Super Space Sunblock Made From Skin Pigment Could Shield Astronauts From Radiation

LiveScience <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D00c-2D1e3-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=pQSJOqXTCZo5xRvM\\_qUOH\\_4mVaUXbpoHVTIf1upbPI&s=1pUbXBnZoWXVnt5A7xwnS50CgO2QF4N4ILUYHZaaFI&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D00c-2D1e3-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=pQSJOqXTCZo5xRvM_qUOH_4mVaUXbpoHVTIf1upbPI&s=1pUbXBnZoWXVnt5A7xwnS50CgO2QF4N4ILUYHZaaFI&e=>) (7/27, Mann) "And just like beachgoers slathering on sunscreen, explorers on the moon or Mars may one day shield themselves using creams containing a new bioengineered material called selenomelanin, created by enriching the natural pigment melanin with the metal selenium. Outside the Earth's protective magnetic field, humans are exposed to many types of dangerous radiation, according to NASA."

#### Chernobyl Mold Could Shield Astronauts From Deep-space Radiation

Engadget <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D00d-2Df27-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=pQSJOqXTCZo5xRvM\\_qUOH\\_4mVaUXbpoHVTIf1upbPI&s=jcCRo9UA\\_p-MMd02w0d371tNvzUomgPILR4UOUOZe3Q&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D00d-2Df27-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=pQSJOqXTCZo5xRvM_qUOH_4mVaUXbpoHVTIf1upbPI&s=jcCRo9UA_p-MMd02w0d371tNvzUomgPILR4UOUOZe3Q&e=>) (7/27) "One of the biggest dangers of interplanetary travel is radiation exposure. In a single round trip to Mars, you may absorb 60 percent of the maximum recommend lifetime dosage. One surprising solution may be mold, according to researchers from Stanford and North Carolina universities. They discovered that fungus thriving in the nuclear fallout of Chernobyl blocked radiation on the international space station (ISS), and could be adapted for trips to the Moon and Mars."

#### Your Next Company Is A Starship

ZDNet <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D00e-2D4c4-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=pQSJOqXTCZo5xRvM\\_qUOH\\_4mVaUXbpoHVTIf1upbPI&s=jcCRo9UA\\_p-MMd02w0d371tNvzUomgPILR4UOUOZe3Q&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D00e-2D4c4-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=pQSJOqXTCZo5xRvM_qUOH_4mVaUXbpoHVTIf1upbPI&s=jcCRo9UA_p-MMd02w0d371tNvzUomgPILR4UOUOZe3Q&e=>)

8-mHkTTiYCEf5ROyus&m=pQSJOqXTCZo5xRvM\_qUOH\_4mVaUXbpoHVTIf1upbPI&s=gylBIYogW7uqAp-zDBI3ZmW5o\_IPcEa4n5riB9yWZ0o&e=> (7/27, Afshar) "The recent NASA and SpaceX launch of two astronauts to the International Space Station (ISS) marked a return, after nearly a decade of the USA's ability to send astronauts to space under its own terms and from within its own borders. It was also the first time that any private company has launched people into orbit."

#### How The Late John Lewis Saved NASA's International Space Station From Cancellation

The Hill <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D00f-2Dbc8-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=pQSJOqXTCZo5xRvM\\_qUOH\\_4mVaUXbpoHVTIf1upbPI&s=AWebioZavZqLeJB-xsTTcYEE0jSIZ3iLm6M9OZ2-f5l&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D00f-2Dbc8-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=pQSJOqXTCZo5xRvM_qUOH_4mVaUXbpoHVTIf1upbPI&s=AWebioZavZqLeJB-xsTTcYEE0jSIZ3iLm6M9OZ2-f5l&e=>) (7/27) "Then-Rep. Tim Roener (D-Ind.) tried to kill the ISS program with an amendment to the FY 1994 NASA Authorization Act, but his measure lost, thanks to Rep. Lewis, who cast the deciding vote to keep it alive. The vote was altogether remarkable, considering that the relationship between the space program and the African American community has been traditionally fraught."

#### Moon to Mars

##### NASA's Next Mars Rover Is Brawniest And Brainiest One Yet

Associated Press <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D010-2Dd4d-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=pQSJOqXTCZo5xRvM\\_qUOH\\_4mVaUXbpoHVTIf1upbPI&s=rkmlQQqa5a8-Rj-9\\_HsqiTFNhFdibSuABRc\\_7fz-7Kw&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D010-2Dd4d-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=pQSJOqXTCZo5xRvM_qUOH_4mVaUXbpoHVTIf1upbPI&s=rkmlQQqa5a8-Rj-9_HsqiTFNhFdibSuABRc_7fz-7Kw&e=>) (7/27, Dunn) "With eight successful Mars landings, NASA is upping the ante with its newest rover. The spacecraft Perseverance – set for liftoff this week – is NASA's brawniest and brainiest Martian rover yet."

##### NASA Rover Perseverance Will Prowl Ancient Lake Bed On Mars For Signs Of Life

Washington Post <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D011-2Dff0-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=pQSJOqXTCZo5xRvM\\_qUOH\\_4mVaUXbpoHVTIf1upbPI&s=OYYfgFMfv6RnqfIFu2DUfiYali gVKnEku-TzfmDMxM&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D011-2Dff0-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=pQSJOqXTCZo5xRvM_qUOH_4mVaUXbpoHVTIf1upbPI&s=OYYfgFMfv6RnqfIFu2DUfiYali gVKnEku-TzfmDMxM&e=>) (7/27, Achenbach) "A \$2.7 billion NASA rover is scheduled to blast off for Mars on Thursday on a mission that could help solve one of the greatest mysteries in all of science: the origin of life. If all goes as planned, the rover, named Perseverance, will collect rock and soil samples that would later be space-mailed back to Earth for close scrutiny."

##### This Summer, Multiple Spacecraft Are Launching To Mars. Here's Why

CNN <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D012-2Dc04-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=pQSJOqXTCZo5xRvM\\_qUOH\\_4mVaUXbpoHVTIf1upbPI&s=MUuX7bzfwATudM8hMEG6ri bBwBHblw\\_6JSsEUyunmr4&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D012-2Dc04-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=pQSJOqXTCZo5xRvM_qUOH_4mVaUXbpoHVTIf1upbPI&s=MUuX7bzfwATudM8hMEG6ri bBwBHblw_6JSsEUyunmr4&e=>) (7/27, Strickland) "To make a mission like this be successful, it takes a lot of

perseverance and a lot of brilliant hard work in the best of times,' said Michael Watkins, director of NASA's Jet Propulsion Laboratory, during a conversation hosted by the Space Foundation last week. 'And I don't think any of us anticipated this Covid pandemic right during the most busy time of the mission.'"

#### How To Watch Live As NASA's Mars Perseverance Rover Launches This Week

CNET News <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D013-2D90b-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=pQSJOqXTCZo5xRvM\\_qUOH\\_4mVaUXbpoHVTIft1upbPI&s=6Me3TYvLYW74e6gz4DL3rVo03E6LVQfP96tO338whYg&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D013-2D90b-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=pQSJOqXTCZo5xRvM_qUOH_4mVaUXbpoHVTIft1upbPI&s=6Me3TYvLYW74e6gz4DL3rVo03E6LVQfP96tO338whYg&e=>) (7/27, Kooser) "Launch day is just days away now. NASA's Perseverance rover is all packed away and ready to head for Mars on Thursday, July 30. NASA will livestream the event as the car-size rover takes off from Cape Canaveral Air Force Station in Florida on a United Launch Alliance (ULA) Atlas V rocket. Prelaunch coverage starts at 4 a.m. PT and the two-hour window opens at 4:50 a.m. PT."

#### 5 Reasons To Wake Up Early To Watch NASA's Mars Perseverance Rover Launch From Cape Canaveral

Florida Today <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D014-2D692-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=pQSJOqXTCZo5xRvM\\_qUOH\\_4mVaUXbpoHVTIft1upbPI&s=XHmUwo\\_15l9MW565z8bj8y-d6h74QH\\_PSMzFRCHtYMU&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D014-2D692-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=pQSJOqXTCZo5xRvM_qUOH_4mVaUXbpoHVTIft1upbPI&s=XHmUwo_15l9MW565z8bj8y-d6h74QH_PSMzFRCHtYMU&e=>) (7/27) "The year 2020 has proven to be a busy one for rockets launching off the Space Coast and this Thursday will mark another high-profile launch you will not want to miss. NASA is scheduled to launch its Mars Perseverance rover and Ingenuity helicopter atop United Launch Alliance's Atlas V rocket no earlier than 7:50 a.m. from Cape Canaveral Air Force Station Launch Complex 41."

#### NASA's Mars 2020 Perseverance Rover Will Use Some Of The Best Martian Maps Ever Made

SPACE <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D015-2D167-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=pQSJOqXTCZo5xRvM\\_qUOH\\_4mVaUXbpoHVTIft1upbPI&s=\\_4GuEunDjBremhQLFxsIvDnT8xSbLDfqZIQZvCDM9GU&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D015-2D167-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=pQSJOqXTCZo5xRvM_qUOH_4mVaUXbpoHVTIft1upbPI&s=_4GuEunDjBremhQLFxsIvDnT8xSbLDfqZIQZvCDM9GU&e=>) (7/27) "Mars 2020 will take advantage of two maps that United States Geological Survey (USGS) researchers created using imagery captured by NASA's Mars Reconnaissance Orbiter. The USGS Astrogeology Science Center generated this mosaic of Mars' Jezero Crater using Context Camera images from NASA's Mars Reconnaissance Orbiter."

#### It's Official: NASA's Next Mission To Mars Has Been Cleared For Launch This Thursday

AFP <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D016-2D363-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=pQSJOqXTCZo5xRvM\\_qUOH\\_4mVaUXbpoHVTIft1upbPI&s=H4Zm3XjKdHtlSK4gEBiLJ7vqcXORKUSrPa3wvhnPsQ&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D016-2D363-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=pQSJOqXTCZo5xRvM_qUOH_4mVaUXbpoHVTIft1upbPI&s=H4Zm3XjKdHtlSK4gEBiLJ7vqcXORKUSrPa3wvhnPsQ&e=>) (7/28) "NASA on Monday gave its latest Mars rover Perseverance the all clear to launch later this week on a mission to seek out signs of ancient microbial life. 'The launch readiness review is complete, and we are indeed go for launch,' administrator Jim Bridenstine said."

## Excitement Grows At NASA As Mars Launch Approaches

UPI <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D017-2Dc7c-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=pQSJOqXTCZo5xRvM\\_qUOH\\_4mVaUXbpoHVTIft1upbPI&s=\\_6HunUt192xs5rteT7CrPMOLlPesE01mqzoBRBHJS9E&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D017-2Dc7c-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=pQSJOqXTCZo5xRvM_qUOH_4mVaUXbpoHVTIft1upbPI&s=_6HunUt192xs5rteT7CrPMOLlPesE01mqzoBRBHJS9E&e=>) (7/27, Brinkmann) "Excitement is growing at NASA over the planned Mars 2020 mission liftoff from Florida on Thursday with an improved forecast for weather conditions. Officials with NASA and the rocket contractor, United Launch Alliance, completed a launch readiness review Monday and declared the mission a 'go' for as early as 7:30 a.m."

## Good Weather Predicted For NASA's Mars Rover Launch Thursday

Spaceflight Now <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D018-2D70e-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=pQSJOqXTCZo5xRvM\\_qUOH\\_4mVaUXbpoHVTIft1upbPI&s=S01thREtS10XyMpFaoNkT67nScTfFcSVgJb5v2Ti1Mo&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D018-2D70e-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=pQSJOqXTCZo5xRvM_qUOH_4mVaUXbpoHVTIft1upbPI&s=S01thREtS10XyMpFaoNkT67nScTfFcSVgJb5v2Ti1Mo&e=>) (7/27, Clark) "In the first official weather outlook the planned launch this week of NASA's Mars 2020 Perseverance rover, meteorologists predict an 80 percent chance of favorable conditions to allow liftoff of an Atlas 5 rocket from Cape Canaveral Thursday. United Launch Alliance ground crews plan to transfer the 197-foot-tall (60-meter) Atlas 5 rocket to its launch pad Tuesday morning to begin preparations for an early morning countdown Thursday."

## NASA's Mars 2020 Rover Perseverance Is 'Go' For Launch

SPACE <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D019-2D613-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=pQSJOqXTCZo5xRvM\\_qUOH\\_4mVaUXbpoHVTIft1upbPI&s=Ga3mCobMqOCyqCDFPhjUrq6HO1b4-nbnz5Tws--c6lM&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D019-2D613-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=pQSJOqXTCZo5xRvM_qUOH_4mVaUXbpoHVTIft1upbPI&s=Ga3mCobMqOCyqCDFPhjUrq6HO1b4-nbnz5Tws--c6lM&e=>) (7/27, Wall) "This morning (July 27), the \$2.7 billion Mars 2020 Perseverance rover passed its launch readiness review, the last big hurdle to clear before its planned liftoff Thursday (July 30) from Florida's Cape Canaveral Air Force Station. 'The launch readiness review is complete, and we are indeed go for launch,' NASA Administrator Jim Bridenstine said during a news conference today."

## Mars Rover Set To Launch From Florida In Search Of Ancient Life On The Red Planet

Orlando (FL) Sentinel <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D01a-2Da6a-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=pQSJOqXTCZo5xRvM\\_qUOH\\_4mVaUXbpoHVTIft1upbPI&s=OFY5MA0jXN1vNxAio7scFRkVShaJ0VjJiXy5iScvBw&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D01a-2Da6a-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=pQSJOqXTCZo5xRvM_qUOH_4mVaUXbpoHVTIft1upbPI&s=OFY5MA0jXN1vNxAio7scFRkVShaJ0VjJiXy5iScvBw&e=>) (7/28, Glenn) "In early March, when out of thousands of name ideas for NASA's new Mars rover 13-year-old Alexander Mather's suggestion of 'Perseverance' was chosen, no one foresaw the prescient message it would carry as the coronavirus pandemic capsized American life. 'We as humans evolved as creatures who can learn to adapt to any situation, no matter how harsh,' Alexander, a seventh-grader from Virginia, read aloud from his winning essay, with no way of knowing that COVID-19 would soon begin to take hold in the United States."

## Perseverance Rover To Be Guided By The Most Precise Mars Maps To Date

New Atlas <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D01b-2De4c-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=pQSJOqXTCZo5xRvM\\_qUOH\\_4mVaUXbpoHVTIf1upbPI&s=wHCGjj-NhPmn1BtcXB3riXs423B2xIMLKgtdN8jdg90&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D01b-2De4c-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=pQSJOqXTCZo5xRvM_qUOH_4mVaUXbpoHVTIf1upbPI&s=wHCGjj-NhPmn1BtcXB3riXs423B2xIMLKgtdN8jdg90&e=>) (7/28, Szondy) “When NASA’s Perseverance Mars rover touches down on the Red Planet on February 18, 2021, its descent stage will guide it autonomously to a (hopefully) safe landing thanks to a pair of the most precise Martian maps ever produced. Though spacecraft have been landing successfully on Mars since the 1970s, it’s still about as risky an exercise as one could imagine with a depressingly high failure rate.”

## How NASA Found The Ideal Hole On Mars To Land In

New York Times <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D01c-2D448-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=pQSJOqXTCZo5xRvM\\_qUOH\\_4mVaUXbpoHVTIf1upbPI&s=nQSQ0kHShFISNHARJOKHR5iSG3e30dPBLXqG2h9WJ\\_E&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D01c-2D448-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=pQSJOqXTCZo5xRvM_qUOH_4mVaUXbpoHVTIf1upbPI&s=nQSQ0kHShFISNHARJOKHR5iSG3e30dPBLXqG2h9WJ_E&e=>) (7/28, Chang) “Here was one of the places with clear signs that liquid water flowed when the planet was warmer and wetter. The image, taken by NASA’s Odyssey orbiter, showed a sinuous dried-up river channel leading into one side of the crater. On the other side of the crater, part of the rim has collapsed, as if it had been swept away by flowing water.”

## NASA Will Soon Try To Fly A Helicopter Over Mars: “It Really Is Like The Wright Brothers’ Moment”

CBS News <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D01d-2D323-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=pQSJOqXTCZo5xRvM\\_qUOH\\_4mVaUXbpoHVTIf1upbPI&s=9TN2HHj1vZvjaVYdHF4fQCBcBUJpKY\\_ItDaZepkqleY&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D01d-2D323-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=pQSJOqXTCZo5xRvM_qUOH_4mVaUXbpoHVTIf1upbPI&s=9TN2HHj1vZvjaVYdHF4fQCBcBUJpKY_ItDaZepkqleY&e=>) (7/27) “With eight successful Mars landings, NASA is upping the ante with the spacecraft Perseverance. Set for liftoff this week, the newest rover is taking a helicopter along for an otherworldly test flight. The 4-pound helicopter, Ingenuity, will travel to Mars clutching the rover’s belly and, a few months after touchdown, attempt to fly solo.”

## NASA’s Ingenuity – The First Ever Off-World Helicopter – Is Set For A ‘Wright Brothers Moment’ On Mars

Scientific American <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D01e-2D046-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=pQSJOqXTCZo5xRvM\\_qUOH\\_4mVaUXbpoHVTIf1upbPI&s=HQdPjB0Q2-PAomW26jx3tT7vus\\_zB4OV5QYVFEd1RIY&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D01e-2D046-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=pQSJOqXTCZo5xRvM_qUOH_4mVaUXbpoHVTIf1upbPI&s=HQdPjB0Q2-PAomW26jx3tT7vus_zB4OV5QYVFEd1RIY&e=>) (7/27, Klotz) “The SUV-sized Perseverance rover due to launch to Mars this week has a sidekick: a svelte four-pound helicopter with four-foot-long rotor blades that weigh as light as feathers. It will attempt to make the first powered flight on another planet, a potential game-changer for deep-space exploration.”

## A Helicopter Ride Over Mars? NASA’s About To Give It A Shot

Wired <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D01f-2Db18-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=pQSJOqXTCZo5xRvM\\_qUOH\\_4mVaUXbpoHVTIf1upbPI&s=pn83id-BEVm2\\_COhTL9B0JBE-j-Awcb513tx8RCKf0&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D01f-2Db18-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=pQSJOqXTCZo5xRvM_qUOH_4mVaUXbpoHVTIf1upbPI&s=pn83id-BEVm2_COhTL9B0JBE-j-Awcb513tx8RCKf0&e=>) (7/27, Oberhaus) "Later this week, NASA plans to launch its fourth Mars rover, Perseverance, on a six-month journey to the Red Planet. Perseverance will boot up a mission to collect samples of Martian dirt that might have traces of ancient life, so that they can be returned to Earth by another mission later this decade. It will also carry a payload unlike anything that's ever been boosted into space: a small autonomous helicopter called Ingenuity."

#### New Mars Rover

Scheduled To Launch On Thursday WKMG-TV Orlando (FL) <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D020-2Dae8-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=pQSJOqXTCZo5xRvM\\_qUOH\\_4mVaUXbpoHVTIf1upbPI&s=rLfCrDmwCCIDiW0038rQFW SxSdc8Nq7IU6tF3MltwiE&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D020-2Dae8-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=pQSJOqXTCZo5xRvM_qUOH_4mVaUXbpoHVTIf1upbPI&s=rLfCrDmwCCIDiW0038rQFW SxSdc8Nq7IU6tF3MltwiE&e=>) (7/27) "NASA is ready to launch its new mission to Mars. It's been almost nine years since the Curiosity rover headed to the red planet. And now Perseverance is scheduled to lift off on Thursday."

#### New Mars Rover Scheduled For Thursday Launch

WESH-TV Orlando (FL) <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D021-2D592-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=pQSJOqXTCZo5xRvM\\_qUOH\\_4mVaUXbpoHVTIf1upbPI&s=AzvYFqEPDZ7ZAzuBH2U1JD Q-FkJu7Yp\\_EbZp45QCaDU&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D021-2D592-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=pQSJOqXTCZo5xRvM_qUOH_4mVaUXbpoHVTIf1upbPI&s=AzvYFqEPDZ7ZAzuBH2U1JD Q-FkJu7Yp_EbZp45QCaDU&e=>) (7/27) "From Cape Canaveral Air Force Station, an Atlas V rocket will help carry Perseverance out of the Earth's atmosphere on a seven month cruise to Mars. It's been a while since we saw a space coast launch of a NASA rover headed for Mars. Thursday morning, Perseverance will start its trip to the planet where the NASA rover Curiosity has been working since 2012."

#### Perseverance Rover Scheduled To Launch On Thursday

WFTV-TV Orlando (FL) <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D022-2Df5d-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=pQSJOqXTCZo5xRvM\\_qUOH\\_4mVaUXbpoHVTIf1upbPI&s=e1iWmTNUqPtfBzC4eGBs1\\_cF2X6aRRpv4UsMQwXDQTM&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D022-2Df5d-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=pQSJOqXTCZo5xRvM_qUOH_4mVaUXbpoHVTIf1upbPI&s=e1iWmTNUqPtfBzC4eGBs1_cF2X6aRRpv4UsMQwXDQTM&e=>) (7/27) "The Mars Perseverance rover is scheduled to launch from Cape Canaveral Air Force Station. The plutonium-powered rover will collect and store rock and soil samples and a search for signs of past microbial life, as well as collect data on the planet's climate and geology paving the way for human exploration."

#### Mars 2020 Mission: NASA Engineer Discusses Martian Entry, Descent, And Landing

TechRepublic <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D023-2Df5d-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=pQSJOqXTCZo5xRvM\\_qUOH\\_4mVaUXbpoHVTIf1upbPI&s=e1iWmTNUqPtfBzC4eGBs1\\_cF2X6aRRpv4UsMQwXDQTM&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D023-2Df5d-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=pQSJOqXTCZo5xRvM_qUOH_4mVaUXbpoHVTIf1upbPI&s=e1iWmTNUqPtfBzC4eGBs1_cF2X6aRRpv4UsMQwXDQTM&e=>)

3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D023-2Df83-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=pQSJOqXTCZo5xRvM\_qUOH\_4mVaUXbpoHVTIft1upbPI&s=110FwR2u4qFojx\_qUG9QkvdypmoKSNdbXAIVHqd3fm4&e=> (7/27) "In the coming days, NASA will launch the Mars 2020 Mission to the Red Planet with the Perseverance rover in tow. The mission builds on the legacy laid and the lessons learned from its roving Martian predecessors. The rover is scheduled to enter the Martian atmosphere in February of next year."

#### Safety Panel Concerned About Quality Control On Boeing Crew Capsule

Spaceflight Now <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D024-2D79c-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=pQSJOqXTCZo5xRvM\\_qUOH\\_4mVaUXbpoHVTIft1upbPI&s=GCyy1CzHfyUgRcab1Uha-LffsMFFWuVpisl3cPOqX88&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D024-2D79c-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=pQSJOqXTCZo5xRvM_qUOH_4mVaUXbpoHVTIft1upbPI&s=GCyy1CzHfyUgRcab1Uha-LffsMFFWuVpisl3cPOqX88&e=>) (7/27) "Members of NASA's independent panel of aerospace safety advisors raised concerns last week about quality control problems that 'seemingly have plagued' Boeing's Starliner crew capsule program, while urging NASA to closely monitor SpaceX's plans to reuse Crew Dragon spaceships on astronaut flights to the International Space Station. An uncrewed test flight of Boeing's CST-100 Starliner spacecraft in December ended prematurely after a programming error in the capsule's mission elapsed timer caused the ship to burn too much fuel shortly after separating from its Atlas 5 rocket."

#### Too Much Mars? Let's Discuss Other Worlds

New York Times <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D025-2D258-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=pQSJOqXTCZo5xRvM\\_qUOH\\_4mVaUXbpoHVTIft1upbPI&s=cJCB5SHI3X5Q-cxGrMU9Sr0GIZc9Kq5vf3sXXPYc1nE&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D025-2D258-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=pQSJOqXTCZo5xRvM_qUOH_4mVaUXbpoHVTIft1upbPI&s=cJCB5SHI3X5Q-cxGrMU9Sr0GIZc9Kq5vf3sXXPYc1nE&e=>) (7/28, Boyle, Brown) "Three government space agencies around the world are getting ready to return to Mars this summer. Along with China and the United Arab Emirates, the United States plans to land the fifth NASA rover, Perseverance, on the red planet (along with a small, experimental helicopter, Ingenuity). But the rover's most important job will be scooping up and caching some samples that humans or robots may eventually retrieve."

#### As If Space Wasn't Dangerous Enough

Space Daily <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D026-2D7df-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=pQSJOqXTCZo5xRvM\\_qUOH\\_4mVaUXbpoHVTIft1upbPI&s=ma0Dlx\\_1QygnJoBLo02QC\\_r cwn5ogN4g0bIO8DEeGIE&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D026-2D7df-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=pQSJOqXTCZo5xRvM_qUOH_4mVaUXbpoHVTIft1upbPI&s=ma0Dlx_1QygnJoBLo02QC_r cwn5ogN4g0bIO8DEeGIE&e=>) (7/28) "And on July 30, we expect to see NASA's Mars Perseverance rover finally take off from Florida. For many nations and their people, space is becoming the ultimate frontier. But although we're gaining the ability to travel smarter and faster into space, much remains unknown about its effects on biological substances, including us."

#### Solar System and Beyond

NASA Will Send A Balloon The Size Of A Football Field To Study How Stars Form

CNN <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D027-2D86a-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=pQSJOqXTCZo5xRvM\\_qUOH\\_4mVaUXbpoHVTIft1upbPI&s=vwjN-G8RIIAchdbrfxAuZnk0y6Po9za0AYxqCetD\\_f8&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D027-2D86a-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=pQSJOqXTCZo5xRvM_qUOH_4mVaUXbpoHVTIft1upbPI&s=vwjN-G8RIIAchdbrfxAuZnk0y6Po9za0AYxqCetD_f8&e=>) (7/27, Andrew) "NASA plans to send an enormous balloon to the edge of Earth's stratosphere in search of secrets about how stars and planets form. The space agency's ASTHROS mission will depart from Antarctica in December 2023 and spend three weeks in the stratosphere, the section of the atmosphere where the ozone layer sits. Its components include a balloon the size of a football field and a specialized far-infrared telescope designed to pick up light the human eye can't detect."

#### NASA Is Building A Balloon As Big As A Football Stadium

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#### Why Is NASA Sending A Balloon The Size Of A Football Stadium Into The Atmosphere?

Miami Herald <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D029-2De86-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=pQSJOqXTCZo5xRvM\\_qUOH\\_4mVaUXbpoHVTIft1upbPI&s=Lchabgo\\_8EX7kIMUmBlgULsThGrNOUzOG1jthM2UJuQ&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D029-2De86-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=pQSJOqXTCZo5xRvM_qUOH_4mVaUXbpoHVTIft1upbPI&s=Lchabgo_8EX7kIMUmBlgULsThGrNOUzOG1jthM2UJuQ&e=>) (7/27) "NASA is planning to send an 8-foot telescope capable of detecting lights invisible to the human eye into the stratosphere in a balloon that's 400 feet wide – or about the size of a football stadium. The telescope, termed ASTHROS, will carry scientific equipment to measure the motion and speed of gas around newly formed stars to understand how different types of planets form in young solar systems, according to a news release."

#### Hubble Telescope Captures Stunningly Clear Image Of Summertime On Saturn

CNN <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D02a-2D6dc-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=pQSJOqXTCZo5xRvM\\_qUOH\\_4mVaUXbpoHVTIft1upbPI&s=2frC8gU-5B6UHn4Qf6tjluVVAZIFazpsTqOmxpcv-sg&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D02a-2D6dc-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=pQSJOqXTCZo5xRvM_qUOH_4mVaUXbpoHVTIft1upbPI&s=2frC8gU-5B6UHn4Qf6tjluVVAZIFazpsTqOmxpcv-sg&e=>) (7/27, Guy) "NASA's Hubble Space Telescope has beamed back an amazing photo showing summertime on Saturn. Hubble captured the image on July 4, when the giant planet was 839 million miles from Earth, according to a statement from NASA released Thursday. It shows what summertime is like in Saturn's northern hemisphere, which is pointed toward Earth, and a slight reddish haze can be seen over the area."

#### Stunningly Detailed Photo Shows Saturn's Summertime

New York Post <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D02b-2Dfe7-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=pQSJOqXTCZo5xRvM\\_qUOH\\_4mVaUXbpoHVTIft1upbPI&s=NaRmlQ5uH4EK-](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D02b-2Dfe7-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=pQSJOqXTCZo5xRvM_qUOH_4mVaUXbpoHVTIft1upbPI&s=NaRmlQ5uH4EK-)



0EkXBAMdVOnKs-mIVU3sp46MSZn\_Mg&e=> (7/27, Frishberg) "Saturn is a summer stunner, as evidenced by an incredible shot that NASA's Hubble Space Telescope captured of the ringed planet this month. Hubble took this gorgeous new photo of Saturn on July Fourth, during the summertime season in the planet's Northern Hemisphere. In addition to capturing the planet encircled in its famous rings, the exposure also shows two white dots in the sea of blackness. These are Saturn's icy moons: Mimas, on the right; and Enceladus, at bottom."

#### Hubble Is Still Snapping Gorgeous Images Despite Its Advanced Age

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#### Hubble Shows Saturn In The Middle Of Its Summer

Universe Today <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D02d-2D2c4-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=pQSJOqXTCZo5xRvM\\_qUOH\\_4mVaUXbpoHVTIft1upbPI&s=sdfd4asyz8Jq2eqCslVnJNuuyXY5ciEQU-jG1w9ozXU&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D02d-2D2c4-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=pQSJOqXTCZo5xRvM_qUOH_4mVaUXbpoHVTIft1upbPI&s=sdfd4asyz8Jq2eqCslVnJNuuyXY5ciEQU-jG1w9ozXU&e=>) (7/27) "If you want an iconic picture of the planet Saturn, it doesn't get any better than this. The latest picture from the Hubble Space Telescope shows a spectacular view of the ringed giant, taken on July 4, 2020. This shows a 'summertime' view of Saturn's northern hemisphere."

#### Hubble Space Telescope Spots Summertime On Saturn In New Image

Fox News <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D02e-2Dfb2-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=pQSJOqXTCZo5xRvM\\_qUOH\\_4mVaUXbpoHVTIft1upbPI&s=O9XSnsaG3Z6txzLXBX72IL6gTTxuNcP7w73IWef8rE&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D02e-2Dfb2-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=pQSJOqXTCZo5xRvM_qUOH_4mVaUXbpoHVTIft1upbPI&s=O9XSnsaG3Z6txzLXBX72IL6gTTxuNcP7w73IWef8rE&e=>) (7/27, Ciaccia) "Summertime on Earth is a little different than summer on Saturn. The Hubble Space Telescope captured a remarkably clear image of the ringed planet on July 4, when the planet was 839 million miles from Earth, according to a statement from NASA."

#### NASA's Hubble Snaps 'Ghostly' Galaxy

Daily Express (UK) <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D02f-2Db15-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=pQSJOqXTCZo5xRvM\\_qUOH\\_4mVaUXbpoHVTIft1upbPI&s=JQGBjpyKuD2sRRVgwL94pg5uZ9aenr2x603-jQ-cOSk&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D02f-2Db15-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=pQSJOqXTCZo5xRvM_qUOH_4mVaUXbpoHVTIft1upbPI&s=JQGBjpyKuD2sRRVgwL94pg5uZ9aenr2x603-jQ-cOSk&e=>) (7/27, Martin) "The galaxy known as NGC 4848 is packed full of young stars and spiralling 'arms', but it is the faint glow around it which intrigued NASA. Surrounding the galaxy, which is 316 million

light-years from the Milky Way, is a faint, ghostly glow. This is caused by gas and dust surrounding the galaxy reflecting on the immense light from the stars, giving it the 'ghostly' appearance."

#### Steampunk Venus Rover Ideas Win NASA Contest To 'Explore Hell' With Clockwork Robots

SPACE <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D030-2Dab8-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=pQSJOqXTCZo5xRvM\\_qUOH\\_4mVaUXbpoHVTIft1upbPI&s=fuLE8DEfXAUbLV6r6YvP3QlpKAmSj0GZ9\\_Jj9hMasdw&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D030-2Dab8-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=pQSJOqXTCZo5xRvM_qUOH_4mVaUXbpoHVTIft1upbPI&s=fuLE8DEfXAUbLV6r6YvP3QlpKAmSj0GZ9_Jj9hMasdw&e=>) (7/27) "A future Venus rover could be decked out with steampunk-esque rollers and fenders as it carefully explores a planet that is so hot that the environment has destroyed other spacecraft within mere minutes of landing. These ideas of using 'rollers and fenders,' which would replace traditional spacecraft sensors, were just some of the designs the public suggested after NASA's Jet Propulsion Laboratory asked for help this spring in designing the new Venusian machine."

#### What Is The Weird Black Cube On The Sun In This New NASA Image?

Vice <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D031-2D00d-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=pQSJOqXTCZo5xRvM\\_qUOH\\_4mVaUXbpoHVTIft1upbPI&s=jc1Oc3KS1gjYO8jn9qMvy8OpivQyRzpzp6A714VqDVvs&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D031-2D00d-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=pQSJOqXTCZo5xRvM_qUOH_4mVaUXbpoHVTIft1upbPI&s=jc1Oc3KS1gjYO8jn9qMvy8OpivQyRzpzp6A714VqDVvs&e=>) (7/27) "While our star is not particularly easy or safe to image, given that it is a blindingly bright ball of nuclear fusion, scientists have still managed to snap the closest pictures ever taken of it, as well as the most detailed shots of the solar surface, all within the past year. These new missions follow on the success of veteran shutterbugs such as the Solar and Heliospheric Observatory (SOHO), a spacecraft developed by NASA and the European Space Agency (ESA) that has been taking breathtaking images of the Sun since its launch in 1995."

#### School Girls In India Discover Earth-bound Asteroid

Reuters <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D032-2Ddac-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=pQSJOqXTCZo5xRvM\\_qUOH\\_4mVaUXbpoHVTIft1upbPI&s=tIKBv9mgIfXfZZOIkGLU39JoDmZ-E5jjZF0fwPeGcQc&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D032-2Ddac-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=pQSJOqXTCZo5xRvM_qUOH_4mVaUXbpoHVTIft1upbPI&s=tIKBv9mgIfXfZZOIkGLU39JoDmZ-E5jjZF0fwPeGcQc&e=>) (7/27, Khanna) "Two teenage girls from India have discovered an Earth-bound asteroid by poring through images from a University of Hawaii telescope, an Indian space education institute said on Monday. The asteroid is presently near Mars and its orbit is expected to cross that of Earth in about one million years' time, said SPACE India, a private institute where the two 14-year-old girls received training."

#### NASA Confirms 'Rare' Asteroid Discovered By Students That Is About To Pass By Earth

Tech Times <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D033-2Dd17-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=pQSJOqXTCZo5xRvM\\_qUOH\\_4mVaUXbpoHVTIft1upbPI&s=1CaSicuqIHabKjrV6yCZRLnjRHtPbULuHrEiDplsmN4&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D033-2Dd17-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=pQSJOqXTCZo5xRvM_qUOH_4mVaUXbpoHVTIft1upbPI&s=1CaSicuqIHabKjrV6yCZRLnjRHtPbULuHrEiDplsmN4&e=>) (7/27, Krisana E.) "Two Indian students dubbed as 'Surat Girls' discovered the existence of an asteroid, now named HLV2514 by NASA, that is set to pass by earth in the future. Hailed both from the province of Surat, Gujarat, the two students, Radhika Lakhani Pratulbhai and Vaidehi Vekariya Sanjaybhai discovered the near-

earth object (NEO) while involved in an international campaign called the 'All India Asteroid Search Campaign 2020.'"

There's An Asteroid Bound For Earth. It Was Discovered By Two 14-year-old Girls.

Mashable <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D034-2De68-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=pQSJOqXTCZo5xRvM\\_qUOH\\_4mVaUXbpoHVTIft1upbPI&s=dyWXhOPmdx-2yebdBA4VW8hDor1jVPX\\_i-Dun0k62b0&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D034-2De68-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=pQSJOqXTCZo5xRvM_qUOH_4mVaUXbpoHVTIft1upbPI&s=dyWXhOPmdx-2yebdBA4VW8hDor1jVPX_i-Dun0k62b0&e=>) (7/28) "And what if there was a giant asteroid hurtling its way to Earth? Well, two girls in India have discovered just that. An asteroid bound for Earth. Yes."

Asteroid News: Plane-sized Asteroid To Make Close Approach TOMORROW

Daily Express (UK) <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D035-2D4c1-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=pQSJOqXTCZo5xRvM\\_qUOH\\_4mVaUXbpoHVTIft1upbPI&s=g1AvA5t5ARf9jQ83A5TMnbiETbMBhYFMOvB9QqP028&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D035-2D4c1-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=pQSJOqXTCZo5xRvM_qUOH_4mVaUXbpoHVTIft1upbPI&s=g1AvA5t5ARf9jQ83A5TMnbiETbMBhYFMOvB9QqP028&e=>) (7/27, Martin) "Asteroid 2020 OR4 will loop by Earth, grazing our galactic neck of the woods at just 457,000 kilometres from our planet, only slightly further than the distance between us and the Moon (384,399km) – according to NASA's Center for Near Earth Object Studies (CNEOS). At 26 metres long, the asteroid is about the size of a commercial aeroplane."

Asteroid Alert: 'One MILLION Asteroids Out There That Could Hit Earth'

Daily Express (UK) <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D036-2D433-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=pQSJOqXTCZo5xRvM\\_qUOH\\_4mVaUXbpoHVTIft1upbPI&s=CcaO9MzAO1Bwrwqjit6NCAxJzySIJWr0psF4E4tz3r4&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D036-2D433-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=pQSJOqXTCZo5xRvM_qUOH_4mVaUXbpoHVTIft1upbPI&s=CcaO9MzAO1Bwrwqjit6NCAxJzySIJWr0psF4E4tz3r4&e=>) (7/27, Martin) "NASA has made great strides in discovering near-Earth objects that are over one kilometre in size, with 90 percent now accounted for. However, this means there is still 10 percent of dangerous asteroids that have not been spotted. While the chances of a major asteroid hitting Earth are small – NASA believes there is a one in 300,000 chance every year that a space rock which could cause regional damage will hit – the devastating prospect is not impossible."

New Approach Refines The Hubble's Constant And Age Of Universe

Space Daily <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D037-2D8ff-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=pQSJOqXTCZo5xRvM\\_qUOH\\_4mVaUXbpoHVTIft1upbPI&s=Jhddih70D3jrb3x85rw6sKNfXyW0HoirJcx-IAWveAw&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D037-2D8ff-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=pQSJOqXTCZo5xRvM_qUOH_4mVaUXbpoHVTIft1upbPI&s=Jhddih70D3jrb3x85rw6sKNfXyW0HoirJcx-IAWveAw&e=>) (7/28) "Using known distances of 50 galaxies from Earth to refine calculations in Hubble's constant, a research team led by a University of Oregon astronomer estimates the age of the universe at 12.6 billion years. Approaches to date the Big Bang, which gave birth to the universe, rely on mathematics and computational modeling, using distance estimates of the oldest stars, the behavior of galaxies and the rate of the universe's expansion. The idea is to compute how long it would take all objects to return to the beginning."

Space Tech

## Take A Flight Through The Most Detailed 3D Map Of The Universe Ever Made

Universe Today <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D038-2Df77-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=pQSJOqXTCZo5xRvM\\_qUOH\\_4mVaUXbpoHVTIft1upbPI&s=SN55dYcvwjbAi5EHKk0wrwlgqfjSi1x6lbFWTB-sp2U&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D038-2Df77-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=pQSJOqXTCZo5xRvM_qUOH_4mVaUXbpoHVTIft1upbPI&s=SN55dYcvwjbAi5EHKk0wrwlgqfjSi1x6lbFWTB-sp2U&e=>) (7/27) “That star highlighted in the photo is called M31\_V1 and resides in the Andromeda Galaxy. The Andromeda – AKA M31 – is the closest galaxy to our own Milky Way. But before it was known as a galaxy, it was called the Andromeda Nebula.”

## Unprecedented Look Into ‘Central Engine’ Powering A Solar Flare

Science Daily <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D039-2Dc0e-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=pQSJOqXTCZo5xRvM\\_qUOH\\_4mVaUXbpoHVTIft1upbPI&s=7mDqYX2GDdoRGYoFjQsg1ppFH96wxcPafaCZreEswFA&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D039-2Dc0e-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=pQSJOqXTCZo5xRvM_qUOH_4mVaUXbpoHVTIft1upbPI&s=7mDqYX2GDdoRGYoFjQsg1ppFH96wxcPafaCZreEswFA&e=>) (7/27) “In a study published in Nature Astronomy, an international team of researchers has presented a new, detailed look inside the ‘central engine’ of a large solar flare accompanied by a powerful eruption first captured on Sept. 10, 2017 by the Owens Valley Solar Array (EOVSA) – a solar radio telescope facility operated by New Jersey Institute of Technology’s (NJIT) Center for Solar-Terrestrial Research (CSTR).”

Various

## UT Students’ Idea: Carving Images On The Moon

Austin (TX) American Statesman <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D03a-2D9f2-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=pQSJOqXTCZo5xRvM\\_qUOH\\_4mVaUXbpoHVTIft1upbPI&s=05EPKd36dzYfiCO7JZNQc6MbbLWRTmXyVDxcpQrZME&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D03a-2D9f2-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=pQSJOqXTCZo5xRvM_qUOH_4mVaUXbpoHVTIft1upbPI&s=05EPKd36dzYfiCO7JZNQc6MbbLWRTmXyVDxcpQrZME&e=>) (7/27, Wu) “Want to leave a message on the moon’s surface? A group of University of Texas students have a vision that could – at least in theory – make that a possibility someday. The 10 UT engineering students devised a business plan to turn the idea into a moneymaker – and won awards for it at a NASA competition.”

Other

## U.S., Russia Hold Talks On Space Security

Wall Street Journal <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D03b-2D327-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=pQSJOqXTCZo5xRvM\\_qUOH\\_4mVaUXbpoHVTIft1upbPI&s=kF0DpSncqZgQWEserj-dbsLJAthYyqDQvfg8HtpZ61M&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D03b-2D327-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=pQSJOqXTCZo5xRvM_qUOH_4mVaUXbpoHVTIft1upbPI&s=kF0DpSncqZgQWEserj-dbsLJAthYyqDQvfg8HtpZ61M&e=>) (7/27, Gordon) reports that the US and Russia held space-security talks in Vienna,

their first since 2013, but neither side issued a statement after the meeting.

#### U.S. Space Force And U.K. Ministry Of Defense To Hold International Space Pitch Day

Space News <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D03c-2D1a5-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=pQSJOqXTCZo5xRvM\\_qUOH\\_4mVaUXbpoHVTIft1upbPI&s=0-ZGptES19baB6NBi1SHDHvb1Rg4tXrqOgu3INh-WiU&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D03c-2D1a5-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=pQSJOqXTCZo5xRvM_qUOH_4mVaUXbpoHVTIft1upbPI&s=0-ZGptES19baB6NBi1SHDHvb1Rg4tXrqOgu3INh-WiU&e=>) (7/27) “U.S. and U.K. defense agencies plan to award \$1 million to startups at the first International Space Pitch Day in November during the Defence Space Conference in London. The event, backed by the U.K. Defence Science and Technology Laboratory, Royal Air Force, U.S. Space Force and NATO, is designed to identify commercial technology with military space applications.”

#### Starship SN5 Survives Hanna, Waits For Static Fire Test

NASA Space Flight <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D03d-2Db87-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=pQSJOqXTCZo5xRvM\\_qUOH\\_4mVaUXbpoHVTIft1upbPI&s=tAHqhkVglEj15zJO7jmLxIVM FvR16qZgzdmGQNNn5fA&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D03d-2Db87-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=pQSJOqXTCZo5xRvM_qUOH_4mVaUXbpoHVTIft1upbPI&s=tAHqhkVglEj15zJO7jmLxIVM FvR16qZgzdmGQNNn5fA&e=>) (7/27) “Starship SN5 is aiming to succeed where its predecessors have failed by passing all the required testing required for the 150 meter hop. While Starhopper still holds the claim for being the only vehicle to take flight at Boca Chica, SN5 will be the first Starship prototype to take to the air, at least in a planned manner, should this coming week’s Static Fire test – which was slightly delayed, most recently by hunkering down during the passing of Hurricane Hanna – go to plan.”

#### Space Force Ranks And Insignia Decisions On Hold Pending Congressional Action

Space News <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D03e-2D49d-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=pQSJOqXTCZo5xRvM\\_qUOH\\_4mVaUXbpoHVTIft1upbPI&s=L6SNEZ-xgIkIVpgLmBVS9B4GZ84v8HeLU8QCcGRbY2k&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D03e-2D49d-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=pQSJOqXTCZo5xRvM_qUOH_4mVaUXbpoHVTIft1upbPI&s=L6SNEZ-xgIkIVpgLmBVS9B4GZ84v8HeLU8QCcGRbY2k&e=>) (7/27) “Legislation passed by the House of Representatives requiring the U.S. Space Force to use the Navy’s rank structure has thrown an unexpected twist into the space service’s plans to develop its own ranks and insignia. The use of Navy ranks was proposed by former Navy SEAL Rep. Dan Crenshaw (R-Texas) who introduced an amendment adopted in the House version of the 2021 National Defense Authorization Act.”

#### Dayton Meets First Step To Bring Space Command To Wright-Patt

Dayton (OH) Daily News <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D03f-2D6cb-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=pQSJOqXTCZo5xRvM\\_qUOH\\_4mVaUXbpoHVTIft1upbPI&s=q1u5IIVuDWvDCyxRmgXHT7tAcRDM2-FUNP2li9dd5jg&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D03f-2D6cb-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=pQSJOqXTCZo5xRvM_qUOH_4mVaUXbpoHVTIft1upbPI&s=q1u5IIVuDWvDCyxRmgXHT7tAcRDM2-FUNP2li9dd5jg&e=>) (7/27) “Ohio’s application to bring the U.S. Space Command to Wright-Patterson Air Force Base has met the Pentagon’s screening criteria and has moved forward to the evaluation phase, the U.S. Air Force told the Dayton Development Coalition. It’s a key step in the region’s quest to persuade Pentagon decision-makers to move the headquarters of Space Command from Colorado Springs, Colo. to Wright-Patterson.”

## Space Cataclysm: Earth's Closest Star Cluster Caught In 'Death Throes' Will Soon Disappear

Daily Express (UK) <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D040-2D2f1-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=pQSJOqXTCZo5xRvM\\_qUOH\\_4mVaUXbpoHVTIf1upbPI&s=A-tkzvYRCZnSLF6htpH0Tc8s\\_PiHsYD7Qz8tM2DgrfA&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D040-2D2f1-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=pQSJOqXTCZo5xRvM_qUOH_4mVaUXbpoHVTIf1upbPI&s=A-tkzvYRCZnSLF6htpH0Tc8s_PiHsYD7Qz8tM2DgrfA&e=>) (7/27, Kettley) "The Hyades cluster is losing mass at an accelerated rate and has entered its twilight years. Hyades is the closest open cluster to Earth, located only 150 light-years away. For comparison, the galactic centre of the Milky Way is about 26,000 light-years away – 152,844,260,000,000 miles."

## The Space Review: Irregular Disorder And The NASA Budget

Space Review <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D041-2D943-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=pQSJOqXTCZo5xRvM\\_qUOH\\_4mVaUXbpoHVTIf1upbPI&s=fAdwAbZz3R9omyybcDB2g4aenxSPMMMBM3KoKuxe\\_7s&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D041-2D943-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=pQSJOqXTCZo5xRvM_qUOH_4mVaUXbpoHVTIf1upbPI&s=fAdwAbZz3R9omyybcDB2g4aenxSPMMMBM3KoKuxe_7s&e=>) (7/27) "With no hearings about NASA's budget proposal by either House or Senate appropriators, the first sign of their views about the agency's budget had to wait until a few weeks ago. On July 7, the House Appropriations Committee released its draft of the commerce, justice, and science (CJS) spending bill that includes NASA. That bill provides \$22.6 billion for NASA, the same amount the agency received in 2020. "

## 'Unidentified Aerial Phenomena,' Better Known As UFOs, Deserve Scientific Investigation

Scientific American <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D042-2D3c4-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=pQSJOqXTCZo5xRvM\\_qUOH\\_4mVaUXbpoHVTIf1upbPI&s=E-kGKrv2vRDUGEr7Bc9baFfpXLJ6n0ilz-uNCvpyFu8&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D042-2D3c4-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=pQSJOqXTCZo5xRvM_qUOH_4mVaUXbpoHVTIf1upbPI&s=E-kGKrv2vRDUGEr7Bc9baFfpXLJ6n0ilz-uNCvpyFu8&e=>) (7/27, Kopparapu, Haqq-Misra) "UFOs have been back in the news because of videos initially leaked, and later confirmed, by the U.S. Navy and officially released by Pentagon that purportedly show 'unidentified aerial phenomena' (UAP) in our skies. Speculations about their nature have run the gamut from mundane objects like birds or balloons to visitors from outer space. It's difficult, if not impossible, to say what these actually are, however, without context."

## Elon Musk Appeared To Imply That Jeff Bezos Is Too Old And Blue Origin Is 'Too Slow' To Reach The Moon

Business Insider <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D043-2Dc4f-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=pQSJOqXTCZo5xRvM\\_qUOH\\_4mVaUXbpoHVTIf1upbPI&s=ijB2xcqD4dR26pAQH3XIF-hWNMzWcyB5OFcnONB5-Yc&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D043-2Dc4f-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=pQSJOqXTCZo5xRvM_qUOH_4mVaUXbpoHVTIf1upbPI&s=ijB2xcqD4dR26pAQH3XIF-hWNMzWcyB5OFcnONB5-Yc&e=>) (7/27, Hartmans) "Elon Musk has made another jab at Jeff Bezos, the latest escalation of a years-long feud between the two billionaires over their competing space ambitions. Over the weekend, The New York Times' Maureen Dowd published a wide-ranging interview with Musk that touched on everything from his girlfriend, Grimes, and their new baby, X, to the coronavirus and Musk's wealth."

## The Space Review: National Spaceports: The Future

Space Review <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D044-2Dfc8-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=pQSJOqXTCZo5xRvM\\_qUOH\\_4mVaUXbpoHVTIft1upbPI&s=JuPpxhZstzelUuv3MuHEHv2Mh2AYdggcgghnQ1TlxHTw&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D044-2Dfc8-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=pQSJOqXTCZo5xRvM_qUOH_4mVaUXbpoHVTIft1upbPI&s=JuPpxhZstzelUuv3MuHEHv2Mh2AYdggcgghnQ1TlxHTw&e=>) (7/27) “National spaceports: the past” explained how different organizational inclinations, as well as both Command and Air Force priorities and specific experiences, impacted the way different Air Force commands regarded and managed the Air Force test ranges that have become national spaceports. These attitudes and priorities had significant impacts on the way the spaceports were operated and planned.”

## SpaceX's Starlink Satellites Ruin Another Awesome Photo

BGR <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D045-2D53f-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=pQSJOqXTCZo5xRvM\\_qUOH\\_4mVaUXbpoHVTIft1upbPI&s=96rJSdkO\\_0ACPfb5scGKtXeDOOV64nTaTmiYEXSSp1Q&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D045-2D53f-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=pQSJOqXTCZo5xRvM_qUOH_4mVaUXbpoHVTIft1upbPI&s=96rJSdkO_0ACPfb5scGKtXeDOOV64nTaTmiYEXSSp1Q&e=>) (7/27, Wehner) “A horde of SpaceX Starlink satellites obscured the view of the comet nicknamed NEOWISE, ruining an otherwise awesome photo of the comet. SpaceX has launched hundreds of the satellites already, but plans to have tens of thousands of them in orbit before long.”

## Argentina Counts On New Satellite Technology To Guard Forests Day And Night

Reuters <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D046-2D42c-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=pQSJOqXTCZo5xRvM\\_qUOH\\_4mVaUXbpoHVTIft1upbPI&s=BMQrKw9zw8NN3vLu6j3leu9ENJuWss8JiyYLolyWOD0&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D046-2D42c-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=pQSJOqXTCZo5xRvM_qUOH_4mVaUXbpoHVTIft1upbPI&s=BMQrKw9zw8NN3vLu6j3leu9ENJuWss8JiyYLolyWOD0&e=>) (7/24, Valente) “Argentina plans to put into orbit a satellite with new precision technology in the coming days, to monitor felling of its native forests round the clock and accurately measure forest carbon stocks in a bid to help curb climate change, scientists said. The SAOCOM 1B satellite, manufactured in the South American country, is due to be launched between July 25 and 30 from Cape Canaveral in Florida, managed by experts from Argentina’s National Commission for Space Activities (CONAE).”

## Proton Rocket Rolled Out For Launch With Two Russian Communications Satellites

Spaceflight Now <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D047-2Daf5-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=pQSJOqXTCZo5xRvM\\_qUOH\\_4mVaUXbpoHVTIft1upbPI&s=XDPYLowyVT0fdMQnFIYJ-uLoWzxaRK1N1or3CEToOjI&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D047-2Daf5-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=pQSJOqXTCZo5xRvM_qUOH_4mVaUXbpoHVTIft1upbPI&s=XDPYLowyVT0fdMQnFIYJ-uLoWzxaRK1N1or3CEToOjI&e=>) (7/27, Clark) “Two satellites designed to beam radio and television broadcasts, Internet connectivity and other communications services across Russia have arrived at a launch pad at the Baikonur Cosmodrome in Kazakhstan for liftoff Wednesday on the first flight of a Russian Proton rocket this year. The Proton rocket rolled out to pad 39 at the Site 200 launch complex at Baikonur on Sunday, riding a railcar from a fueling station across the Kazakh steppe to the launch facility.”

## Virgin Galactic Will Give First Glimpse Inside Its SpaceShipTwo Cabin Tomorrow

Daily Mirror (UK) <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D048-2D810-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=pQSJOqXTCZo5xRvM\\_qUOH\\_4mVaUXbpoHVTlft1upbPI&s=kDNzvMaRa18dqizgiW-yweWVOfdxAQN2\\_wpFvu6jdN0&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020072802nasa-26r-3Demail-2De009-26l-3D048-2D810-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=pQSJOqXTCZo5xRvM_qUOH_4mVaUXbpoHVTlft1upbPI&s=kDNzvMaRa18dqizgiW-yweWVOfdxAQN2_wpFvu6jdN0&e=>) (7/27, Best) "From Virgin Galactic to SpaceX, several private space firms are racing to become the first to launch tourists into space. Now, Virgin Galactic is set to inch ahead of its rivals, by unveiling the interior cabin of its SpaceShipTwo. The unveiling will take place at 18:00 BST tomorrow, and will be streamed on Virgin Galactic's YouTube channel here."

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Editor's Note

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#### Top Stories

SLS Core Stage Mated To Boosters For Artemis I

#### Aviation Week

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 "The Boeing-built core stage for the long-awaited debut of NASA's Space Launch System (SLS) heavy-lift rocket was

hoisted onto its mobile launcher and attached to a pair of solid rocket boosters on June 13 in preparation for the Artemis I flight test around the Moon later this year...”

## NASA Soliciting Proposals For Two Private Astronaut Missions

### Space News

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## Why Does Jeff Bezos Want To Go To Space?

### Houston Chronicle

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### Flight

No content.

### Earth

## Dangerous Heat Wave Threatens Drought-stricken West

### CBS News

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## Florida Set To Have Incredible Orange Skies As Massive Saharan Dust Cloud Approaches

Newsweek

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“An enormous Saharan dust cloud is set to hit Florida this week, having traveled close to 5,000 miles all the way from the coast of Africa. ... Some of the nutrient-laden dust even reaches the Amazon region in South America where it sprinkles into the ocean, feeding the marine life, and similarly plant life once it makes landfall, according to NASA.”

#### How To Watch Rocket Launch From NASA's Wallops Virginia Flight Facility On Tuesday

Newsweek

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“A Minotaur I rocket will launch from NASA's Wallops Flight Facility in Virginia on Tuesday June 15. The rocket, which will be carrying three national security payloads for the National Reconnaissance Office, is scheduled to launch at 7 a.m. ET on Tuesday from the Mid-Atlantic Regional Spaceport's (MARS) Pad 0B—located at the southern tip of the flight facility—on Wallops Island.”

Humans in Space

#### Jeff Bezos Is Leaving Amazon For Adventures In Space

Bloomberg

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“Hi folks, it's Brad. Jeff Bezos's sprawling ranch in West Texas, about 40 miles northeast of the town of Van Horn, is more than just the launch site for his audacious trip into space, planned for July 20. Since Bezos and his lawyers started secretly buying parcels of ranch land there about 20 years ago, it's also been a private retreat—a place where he can pursue his personal interests and most expensive hobbies largely out of sight.”

#### Why Does Jeff Bezos Want To Go To Space?

Houston Chronicle

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021061502nasa&r=email-7c31&l=00a-b16&t=c&data=04|01|randy.c.cruz@nasa.gov|7ff1da66539549af9b1008d92fec6ab7|7005d45845be48ae8140d43da96dd17b|0|0|637593514729744621|Unknown|TWFPbGZsb3d8eyJWljoimc4wLjAwMDAiLCJQljoiv2luMzliLCJBTil6lk1haWwiLCJXVCI6Mn0=|1000&sdata=Jt+gTBIA6AsdPhMT9LL3GJGIPQ88vsxZ9yLty8qXQ9o=&reserved=0>> (6/14, Stahl)  
“Last week, Jeff Bezos announced that he would be among the first set of passengers to fly Blue Origin's New Shepard rocket into space. Alongside his brother, Mark, and a mystery elite who on Saturday won their ticket at auction for \$28 million, Mr. Bezos will be soaring 60 miles above the Earth come July 20. The question is: why?”

#### Plenty Of Elbow Room And The Largest Windows In Space: A Deeper Look At Jeff Bezos' Trip To Space

## USA Today

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021061502nasa&r=email-7c31&l=00b-b08&t=c&data=04|01|randy.c.cruz@nasa.gov|7ff1da66539549af9b1008d92fec6ab7|7005d45845be48ae8140d43da96dd17b|0|0|637593514729754578|Unknown|TWFPbGZsb3d8eyJWljoimc4wLjAwMDAiLCJQljoiv2luMzliLCJBTil6lk1haWwiLCJXVCI6Mn0=|1000&sdata=xQQyBvjVCibHzEJ9fvn96Jo0SPNKSaYyR5dtKAsi2qk=&reserved=0>> (6/14) “When Amazon billionaire Jeff Bezos and three others blast off to the edge of space on July 20, they’ll have lots more room and much bigger windows than the cramped modules of Apollo moon landing missions. Aboard Blue Origin’s New Shepard rocket will be Bezos, his brother Mark, and two other occupants – one unnamed, and the other who bid \$28 million for a ticket in a charity auction Saturday. For an 11-minute flight, that’s more than \$2.5 million per minute.”

## In Auction Frenzy, Winner Bids \$28M For Space Flight With Jeff Bezos

## The Hill

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021061502nasa&r=email-7c31&l=00c-c64&t=c&data=04|01|randy.c.cruz@nasa.gov|7ff1da66539549af9b1008d92fec6ab7|7005d45845be48ae8140d43da96dd17b|0|0|637593514729754578|Unknown|TWFPbGZsb3d8eyJWljoimc4wLjAwMDAiLCJQljoiv2luMzliLCJBTil6lk1haWwiLCJXVCI6Mn0=|1000&sdata=ug18n/UTxFcvqw5FcCIKiXMHUENrdSqshmc/mzyVyHQ=&reserved=0>> (6/14, Barnes) “An extra seat on Jeff Bezos’s New Shepard rocket slated to launch into space in July sold for \$28 million on Saturday after preliminary bidding reached nearly \$5 million. The 10-minute auction featured 20 active bidders, from an original pool of more than 7,600 registered participants across 159 countries, Blue Origin’s website.”

## New Shepard Suborbital July 20 Space Ride Sells For \$28 Million

## Aviation Week

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021061502nasa&r=email-7c31&l=00d-aea&t=c&data=04|01|randy.c.cruz@nasa.gov|7ff1da66539549af9b1008d92fec6ab7|7005d45845be48ae8140d43da96dd17b|0|0|637593514729754578|Unknown|TWFPbGZsb3d8eyJWljoimc4wLjAwMDAiLCJQljoiv2luMzliLCJBTil6lk1haWwiLCJXVCI6Mn0=|1000&sdata=p+PCc9+9gX9RekTFguIOy/poxXRxo+GDaYMNOMw6tlM=&reserved=0>> (6/14) “Bidding to ride on the first passenger flight of Blue Origin’s New Shepard suborbital spacecraft closed at \$28 million, with the unnamed winner to join company founder and funder Jeff Bezos, his brother and one other person, also not yet identified, for a ride slated for July 20.”

## How Much Would It Cost To Go To Space With Jeff Bezos? The Number Is Staggering

## Daily Caller

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## Coax, Bribe Or Mandate? Companies Wrestle With Employee Vaccinations.

## New York Times

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021061502nasa&r=email-7c31&l=00f-839&t=c&data=04|01|randy.c.cruz@nasa.gov|7ff1da66539549af9b1008d92fec6ab7|7005d45845be48ae8140d43da96dd17b|0|0|637593514729764535|Unknown|TWFpbGZsb3d8eyJWljoimC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTil6lk1haWwiLCJXVCi6Mn0=|1000&sdata=znWb1ZPccnz0aODqzP/Zazy/sB5PMBekYUIUOIqim0=&reserved=0>> (6/14) “The message from many companies to their office workers is clear. It will soon be time to shed the slippers for hard shoes and return to your desk. But many companies are still puzzling over a single quandary: What to do about vaccines. Should they require employees to get them? Encourage or cajole or bribe them? ... An auction winner paid more than \$28 million for an 11-minute ride into space alongside Jeff Bezos, on a reusable rocket launched by his space company, Blue Origin. Nearly 7,600 people from 159 countries registered to bid on the flight aboard the New Shepard — its first with passengers — which is expected to launch on July 20 from West Texas.”

#### NASA, SpaceX Aim For Halloween Launch For Crew-3 To The ISS

##### CNET News

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021061502nasa&r=email-7c31&l=010-284&t=c&data=04|01|randy.c.cruz@nasa.gov|7ff1da66539549af9b1008d92fec6ab7|7005d45845be48ae8140d43da96dd17b|0|0|637593514729774491|Unknown|TWFpbGZsb3d8eyJWljoimC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTil6lk1haWwiLCJXVCi6Mn0=|1000&sdata=KR4w7OdK+52rCzLvbmR2JmPTTM3el/aQ9BWJFgBK5aM=&reserved=0>> (6/14, Kooser) “Four astronauts might get quite the treat on Halloween this year. On Monday, NASA announced a new target launch date of Oct. 31 for SpaceX’s Crew-3 mission to the International Space Station. It nudges the launch back just a little from the previous date of Oct. 23. Crew-3 will follow on the success of SpaceX’s previous flights as part of NASA’s Commercial Crew Program. NASA astronauts Raja Chari, Tom Marshburn and Kayla Barron and European Space Agency astronaut Matthias Maurer are set to spend six months on the ISS. They will be flying on a new Crew Dragon spacecraft.”

#### NASA Soliciting Proposals For Two Private Astronaut Missions

##### Space News

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#### Are NASA Astronauts Funny? New ‘2 Funny Astronauts’ Podcast Is Pretty Convincing

##### Florida Today

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021061502nasa&r=email-7c31&l=012-3d7&t=c&data=04|01|randy.c.cruz@nasa.gov|7ff1da66539549af9b1008d92fec6ab7|7005d45845be48ae8140d43da96dd17b|0|0|637593514729784450|Unknown|TWFpbGZsb3d8eyJWljoimC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTil6lk1haWwiLCJXVCi6Mn0=|1000&sdata=8+e9BaJRfyNyDeF9WJpnIWOXoi1nVgyCcCFebV18jgc=&reserved=0>> (6/14, Kelly) “Former space shuttle astronauts Mike Massimino and Garrett Reisman are pretty sure their new podcast titled ‘2 Funny Astronauts’ is, well, pretty funny. ... The duo, both two-time NASA astronauts and longtime friends who flew separate missions between 2002 and 2010, recently teamed up to start recording their experiences, recall stories, and

discuss the latest happenings in space.”

## Blue Origin Seat Auctioned

KTLA-TV Los Angeles

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## Moon to Mars

### SLS Core Stage Mated To Boosters For Artemis I

Aviation Week

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021061502nasa&r=email-7c31&l=014-9e4&t=c&data=04|01|randy.c.cruz@nasa.gov|7ff1da66539549af9b1008d92fec6ab7|7005d45845be48ae8140d43da96dd17b|0|0|637593514729784450|Unknown|TWFPbGZsb3d8eyJWljoimc4wLjAwMDAiLCJQljoiv2luMzliLCJBTil6lk1haWwiLCJXVCI6Mn0=|1000&sdata=hvkk4y2kBeWe+/RyLkIBbXOZxE7Hys4fJMwB/mjBHeM=&reserved=0>> (6/14) “The Boeing-built core stage for the long-awaited debut of NASA’s Space Launch System (SLS) heavy-lift rocket was hoisted onto its mobile launcher and attached to a pair of solid rocket boosters on June 13 in preparation for the Artemis I flight test around the Moon later this year...”

Photos Shows NASA’s Newly Assembled Megarocket, Which Is Taller Than The Statue Of Liberty And Its Most Powerful Launch Vehicle Built Since The 1960s

Insider

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### SLS Core Stage Positioned Between Boosters

WAAY

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021061502nasa&r=email-7c31&l=016-06c&t=c&data=04|01|randy.c.cruz@nasa.gov|7ff1da66539549af9b1008d92fec6ab7|7005d45845be48ae8140d43da96dd17b|0|0|637593514729794402|Unknown|TWFPbGZsb3d8eyJWljoimc4wLjAwMDAiLCJQljoiv2luMzliLCJBTil6lk1haWwiLCJXVCI6Mn0=|1000&sdata=sUf/baeStOUVZO/cH+sgjXI/IWYYrV50IJis73vfFzA=&reserved=0>> (6/14)-TV Huntsville (AL)  
<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021061502nasa&r=email-7c31&l=017->



b66&t=c&data=04|01|randy.c.cruz@nasa.gov|7ff1da66539549af9b1008d92fec6ab7|7005d45845be48ae8140d43da96dd17b|0|0|637593514729804383|Unknown|TWfPbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiv2luMzliLCJBTil6lk1haWwiLCJXVCI6Mn0=|1000&sdata=Wo54BBJ3mFvZ9DgEHQTf3/eJ+cDIsxIU9JUupVoBRE=&reserved=0> (6/14)“NASA has reached another big step in its quest to return humans to the surface of the moon! This weekend, crews positioned the massive SLS Core stage between the two solid rocket boosters.”

See NASA’s Bonkers Giant Moon Rocket Standing Up Boosters And All

#### CNET News

<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021061502nasa&r=email-7c31&l=018-

833&t=c&data=04|01|randy.c.cruz@nasa.gov|7ff1da66539549af9b1008d92fec6ab7|7005d45845be48ae8140d43da96dd17b|0|0|637593514729804383|Unknown|TWfPbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiv2luMzliLCJBTil6lk1haWwiLCJXVCI6Mn0=|1000&sdata=vrJW9edIB2V17FqOkmsJFOE58HQEqC7Kj/h04vY3Cbs=&reserved=0> (6/14, Kooser) “Well that’s a big rocket. The Space Launch System is the most powerful rocket NASA has ever built, and it’s meant to launch spacecraft and astronauts to the moon as part of the Artemis program. We have our first look at the whole shebang now that the huge core stage has been lifted into place with its two hefty boosters at NASA’s Kennedy Space Center in Florida.”

#### Solar System and Beyond

This Week In Space: A ‘Blinking’ Star And Exploring Space In World’s Deepest Pool

#### Houston Chronicle

<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021061502nasa&r=email-7c31&l=019-

53b&t=c&data=04|01|randy.c.cruz@nasa.gov|7ff1da66539549af9b1008d92fec6ab7|7005d45845be48ae8140d43da96dd17b|0|0|637593514729804383|Unknown|TWfPbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiv2luMzliLCJBTil6lk1haWwiLCJXVCI6Mn0=|1000&sdata=L9616JCedUiN6EF3vXXpj8zrZYYzsZPFpv92qkFX8M=&reserved=0> (6/14, Stahl) “The largest indoor swimming pool in the world will be built in 2023, but to splash around in its deep end, you may have to be an astronaut—or at least a movie star. Called Blue Abyss, the £150 million facility was recently announced as a training ground for astronauts that will also double as a film set and research center.”

NASA Is Returning To Venus To Learn How It Became A Hot Poisonous Wasteland – And Whether The Planet Was Ever Habitable In The Past

#### Houston Chronicle

<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021061502nasa&r=email-7c31&l=01a-

adf&t=c&data=04|01|randy.c.cruz@nasa.gov|7ff1da66539549af9b1008d92fec6ab7|7005d45845be48ae8140d43da96dd17b|0|0|637593514729814326|Unknown|TWfPbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiv2luMzliLCJBTil6lk1haWwiLCJXVCI6Mn0=|1000&sdata=aa7o9gviJCQOF1/1jUnI5V39zKi2RFjSX9CluQrgYik=&reserved=0>/The (6/14, Byrne) Conversation “NASA is finally headed back to Venus. On June 2, 2021, NASA Administrator Bill Nelson announced that the agency had selected two winners of its latest Discovery class spacecraft mission competition, and both are headed to the second planet from the Sun.”

Titan Impact Craters Reveal Connections To Planetary Weather, Set The Stage For Dragonfly

#### NASA Space Flight

<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021061502nasa&r=email-7c31&l=01b-

bfb&t=c&data=04|01|randy.c.cruz@nasa.gov|7ff1da66539549af9b1008d92fec6ab7|7005d45845be48ae8140d43da96dd17b|0|0|637593514729814326|Unknown|TWfPbGZsb3d8eyJWljoimc4wLjAwMDAiLCJQljoiv2luMzliLCJBTil6lk1haWwiLCJXVCI6Mn0=|1000&sdata=MDFa3b/99VPSEV1SWrjzdnizN2OC21DJkflW7Ma0tk=&reserved=0> (6/14, Gebhardt) "Titan, the atmosphere-shrouded moon of Saturn, has captivated scientists' attention since its formal discovery on 25 March 1655. While in-situ observations of the moon ended in September 2017 when the Cassini spacecraft was purposely plunged into Saturn's atmosphere at the end of its mission, data from the 13 year scientific voyage continues to reveal information not just about Titan's past but about its future potential to harbor life as well."

#### Nasa Just Got Amazing Views Of Jupiter's Largest Moon

Popular Science

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021061502nasa&r=email-7c31&l=01c-8b2&t=c&data=04|01|randy.c.cruz@nasa.gov|7ff1da66539549af9b1008d92fec6ab7|7005d45845be48ae8140d43da96dd17b|0|0|637593514729824266|Unknown|TWfPbGZsb3d8eyJWljoimc4wLjAwMDAiLCJQljoiv2luMzliLCJBTil6lk1haWwiLCJXVCI6Mn0=|1000&sdata=31MXuCsq8N36nxm1ugCFdkdFSG7oYeb6yi/NKeQRvY4=&reserved=0>> (6/14, Sapunar) "In ancient mythology, the Roman god Jupiter uses a veil of clouds to conceal his mischief from his wife Juno. NASA's Juno spacecraft has spent three years looking beneath the clouds of our similarly secretive and distant planetary neighbor, Jupiter. But recently, Juno got up close and personal with a different celestial body."

#### Dad Who Helped NASA Discover New Planets Nurtures Son's Interest In Space

Newsweek

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021061502nasa&r=email-7c31&l=01d-60f&t=c&data=04|01|randy.c.cruz@nasa.gov|7ff1da66539549af9b1008d92fec6ab7|7005d45845be48ae8140d43da96dd17b|0|0|637593514729824266|Unknown|TWfPbGZsb3d8eyJWljoimc4wLjAwMDAiLCJQljoiv2luMzliLCJBTil6lk1haWwiLCJXVCI6Mn0=|1000&sdata=Z0ZsVpvuLRhZagdGWNAQens4AA4DMknhT7iVSOTy8qg=&reserved=0>> (6/14, Browne) "A dad who helped NASA discover two new planets as part of a public science project has said he wants to nurture his son's interest in space. Cesar Rubio is a California-based machinist who participates in the NASA-funded Planet Hunters TESS project. The project recruits citizen scientists from around the world to help pore over data from NASA's Transiting Exoplanet Survey Satellite, or TESS, which is designed to peer into space and find evidence of other worlds."

#### Mushballs And A Great Blue Spot: What Lies Beneath Jupiter's Pretty Clouds

New York Times

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021061502nasa&r=email-7c31&l=01e-41f&t=c&data=04|01|randy.c.cruz@nasa.gov|7ff1da66539549af9b1008d92fec6ab7|7005d45845be48ae8140d43da96dd17b|0|0|637593514729824266|Unknown|TWfPbGZsb3d8eyJWljoimc4wLjAwMDAiLCJQljoiv2luMzliLCJBTil6lk1haWwiLCJXVCI6Mn0=|1000&sdata=oMvpURo5f6rJVLtp+gFcDZs19A7N4S0Y4PRNRP+I6VQ=&reserved=0>> (6/14, Chang) "For something that was to have been done and thrown away three years ago, NASA's Juno spacecraft has a busy schedule ahead exploring Jupiter and its big moons. The spacecraft entered orbit around Jupiter on July 4, 2016, and has survived bombardment from intense radiation at the largest of the solar system's planets. It is now finishing its primary mission, but NASA has granted it a four-year extension and 42 more orbits. Last week, it zipped past Ganymede, Jupiter's largest moon."

#### Hubble Space Telescope Looks At NGC 3254

Sci-News

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#### Facing Cancellation, SOFIA Observatory Probes Star Formation

##### Aviation Week

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021061502nasa&r=email-7c31&l=020-acf&t=c&data=04|01|randy.c.cruz@nasa.gov|7ff1da66539549af9b1008d92fec6ab7|7005d45845be48ae8140d43da96dd17b|0|0|637593514729834224|Unknown|TWFpbGZsb3d8eyJWljoimc4wLjAwMDAiLCJQljoiv2luMzliLCJBTil6lk1haWwiLCJXVCI6Mn0=|1000&sdata=OD7QwxWFtSMQIWWv/onLyrKBarEURN3yM83pMJG/3A=&reserved=0>> (6/14) "A glowing nebula filled with clouds of hot gas and dust designated RCW 120 is providing possible new insight into how stars formed in the early universe, thanks to observations from the SOFIA airborne observatory. This could be final year of observations with SOFIA. The White House 2022 budget..."

##### Space Tech

#### NASA Pursues Greener, More Efficient Spacecraft Propulsion

##### UPI

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#### First Wooden Satellite Aims To Prove Plywood Can Survive Space Brutalities

##### CNET News

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021061502nasa&r=email-7c31&l=022-2c5&t=c&data=04|01|randy.c.cruz@nasa.gov|7ff1da66539549af9b1008d92fec6ab7|7005d45845be48ae8140d43da96dd17b|0|0|637593514729844191|Unknown|TWFpbGZsb3d8eyJWljoimc4wLjAwMDAiLCJQljoiv2luMzliLCJBTil6lk1haWwiLCJXVCI6Mn0=|1000&sdata=wZolgeO2fB56lbpuiQlZSB+kPtD3px8cJluTEJHXW9k=&reserved=0>> (6/14, Kooser) "Toothpicks. Tables. Crates. Spoons. And satellites? An ambitious project will send a tiny satellite made out of wood into orbit later this year to see if it can stand up to the brutal conditions in space. The WISA Woodsat is a 4-inch (10-centimeter) square satellite that's scheduled for a fall launch on a Rocket Lab Electron rocket in New Zealand. Getting to orbit is only part of the adventure. Once there, the team will monitor the little cube to see how its plywood build stands up to cold, heat, radiation and the vacuum of space."

## The World's First Wooden Satellite Will Launch This Year

### SPACE

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021061502nasa&r=email-7c31&l=023-f8b&t=c&data=04|01|randy.c.cruz@nasa.gov|7ff1da66539549af9b1008d92fec6ab7|7005d45845be48ae8140d43da96dd17b|0|0|637593514729844191|Unknown|TWFpbGZsb3d8eyJWljoimC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTil6lk1haWwiLCJXVCi6Mn0=|1000&sdata=nvF/QXhLwRduUOEzawZCN9dtiYVinXAmN+aG2GmwxYE=&reserved=0>> (6/14, Pultarova) "The world's first 'wooden satellite' is preparing to launch this year. WISA Woodsat, a nanosatellite that measures 4 by 4 by 4 inches (10 by 10 by 10 centimeters) and weighs about 2.2 lbs. (1 kilogram), uses a special type of coated plywood (called WISA) for its surface panels. ... This type of oxygen, created when strong UV radiation from the sun splits normal oxygen molecules, was first discovered after it damaged the thermal blankets of NASA's early Space Shuttle missions."

## New Space Telescope Could Spot Potentially Hazardous Asteroids Heading For Earth

### CNN

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021061502nasa&r=email-7c31&l=024-0bd&t=c&data=04|01|randy.c.cruz@nasa.gov|7ff1da66539549af9b1008d92fec6ab7|7005d45845be48ae8140d43da96dd17b|0|0|637593514729854141|Unknown|TWFpbGZsb3d8eyJWljoimC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTil6lk1haWwiLCJXVCi6Mn0=|1000&sdata=sXtHkH6hbFTMntKmpunYt8yJJPvnnFn2ctDPI8dwTfk=&reserved=0>> (6/14, Strickland) "A new space telescope that could spot potentially hazardous asteroids and comets heading for Earth is one step closer to reality. The Near-Earth Object Surveyor space telescope, or NEO Surveyor, has been approved by NASA to move forward to the design phase. The 20-foot-long (6-meter-long) infrared telescope would bolster planetary defense by helping astronomers find asteroids and comets that come within 30 million miles (48 million kilometers) of Earth's orbit."

### Various

## NASA To Study UFOs After High-speed Objects Spotted By Military Pilots

### Daily Mirror (UK)

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021061502nasa&r=email-7c31&l=025-74e&t=c&data=04|01|randy.c.cruz@nasa.gov|7ff1da66539549af9b1008d92fec6ab7|7005d45845be48ae8140d43da96dd17b|0|0|637593514729854141|Unknown|TWFpbGZsb3d8eyJWljoimC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTil6lk1haWwiLCJXVCi6Mn0=|1000&sdata=BsYbqo98Pgih9yZuzi7FiDgX/op7ZSX7csU/fhfw08=&reserved=0>> (6/14, Owen) "Are we alone in the universe? It is one of the most fundamental questions scientific and mathematical experts have been pondering for decades. And it is a topic that looks set to be high on the agenda once again this summer as the Pentagon prepares to publish a 'bombshell' report later this month into UFOs. At the same time, the new head of super space agency NASA is allowing researchers to study the phenomenon of unidentified flying objects."

## Trial Of Scientist Accused Of Hiding China Work Goes To Jury

### Wall Street Journal

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021061502nasa&r=email-7c31&l=026-fe7&t=c&data=04|01|randy.c.cruz@nasa.gov|7ff1da66539549af9b1008d92fec6ab7|7005d45845be48ae8140d43da96dd17b|0|0|637593514729864097|Unknown|TWFpbGZsb3d8eyJWljoimC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTil6lk1haWwiLCJXVCi6Mn0=|1000&sdata=nabKkde/khRHD3FVupd2yGdlUjHVmmzQSLRx/mglITWQ=&reserved=0>> (6/14,

Viswanatha) “Mr. Hu, who specializes in nanotechnology, is charged with wire fraud and lying to the government about his work in China when he sought and received two grants from the National Aeronautics and Space Administration.”

#### ‘Mercury Rising’ Explores The Beginning Of The U.S. Space Program

MSNBC

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021061502nasa&r=email-7c31&l=027-84d&t=c&data=04|01|randy.c.cruz@nasa.gov|7ff1da66539549af9b1008d92fec6ab7|7005d45845be48ae8140d43da96dd17b|0|0|637593514729864097|Unknown|TWfPbGZsb3d8eyJWljoimc4wLjAwMDAiLCJQljoiv2luMzliLCJBTil6lk1haWwiLCJXVCI6Mn0=|1000&sdata=LZszaPl1jIwKW4senSF7msN3NCEed+9RHw4h79jmqWA=&reserved=0>> (6/14)  
“Author Jeff Shesol joins Morning Joe to discuss his new book ‘Mercury Rising: John Glenn, John Kennedy, and the New Battleground of the Cold War’.”

Other

#### Read SpaceX President Gwynne Shotwell's Speech To 2021 Graduates, Urging US Educational Reforms

CNBC

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#### Space Force ‘Tactically Responsive’ Launch Quickly Puts Satellite In Orbit

UPI

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021061502nasa&r=email-7c31&l=029-35b&t=c&data=04|01|randy.c.cruz@nasa.gov|7ff1da66539549af9b1008d92fec6ab7|7005d45845be48ae8140d43da96dd17b|0|0|637593514729874058|Unknown|TWfPbGZsb3d8eyJWljoimc4wLjAwMDAiLCJQljoiv2luMzliLCJBTil6lk1haWwiLCJXVCI6Mn0=|1000&sdata=VaSp2mTr+g65ww3lYXmuD1zt6DZh0DUTkQ+MIPHgqwm=&reserved=0>> (6/14, Adamczyk) “A satellite, launched by a rocket fired from an aircraft, was put in orbit in a first-of-its-kind mission by the U.S. Space Force’s Space and Missile Center. The Tactically Responsive Launch-2 payload at Vandenberg Space Force Base, Calif., was launched into low earth orbit by a three-stage Pegasus XL rocket released at about 40,000 feet in altitude by a modified Northrop Grumman L-1011 ‘Stargazer’ aircraft on Sunday, the Space Force said in a statement.”

#### SpaceX Satellites Soaring Across Nevada Night Sky Leave Many Curious

USA Today

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021061502nasa&r=email-7c31&l=02a-008&t=c&data=04|01|randy.c.cruz@nasa.gov|7ff1da66539549af9b1008d92fec6ab7|7005d45845be48ae8140d43da96dd17b|0|0|637593514729874058|Unknown|TWfPbGZsb3d8eyJWljoimc4wLjAwMDAiLCJQljoiv2luMzliLCJBTil6lk1haWwiLCJXVCI6Mn0=|1000&sdata=zbqDx28aaYmM5uDMEKu9ccRqXMG4osxBFmR9aMYc/qA=&reserved=0>> (6/14, Bednarski) “If you have looked up at the night sky lately, you may have seen a string of lights blazing by. While these

may be an unidentified object to a lot of people, they are part of Elon Musk's goal of universal internet. These SpaceX satellites, known as Starlinks, are often as bright as an airplane and travel in packs of up to 60 satellites. They orbit the earth at one of the lowest elevations allowed for spacecraft, around 186 miles above earth's surface and up to almost 342 miles high."

#### China Launches Commercial Asteroid Hunter And 3 Other Satellites Into Space

SPACE

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#### Space Force Clears SpaceX To Launch Reused Rockets For Military Missions

CNBC

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## **[EXTERNAL] NASA Morning Briefing for Tuesday, June 29, 2021**

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Editor's Note

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## Top Stories

### China Releases First Videos Of Its Mars Rover, Including Eerie Noise As It Rolls Down A Ramp

#### Insider

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### No Hope For Life In Venus Clouds, But Maybe On Jupiter, Study Suggests

#### SPACE

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### No Quick Fix For Hubble Space Telescope’s Computer Glitch, NASA Says

#### SPACE

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### NASA Chief Says He Believes Aliens Are Real

#### Vice

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#### GAO Urges NASA To Step Up Cybersecurity Efforts

Fox Business

<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021062902nasa&r=email-7f5d&l=007-4fc&t=c&data=04|01|randy.c.cruz@nasa.gov|58a0154757d54556b6d908d93aecf624|7005d45845be48ae8140d43da96dd17b|0|0|637605611691690289|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQljojV2luMzliLCJBTiI6I6k1haWwiLCJXVCi6Mn0=|1000&sdata=dMbjD/VuYkuO8sZiOwoBS2ECpGQTAnE5ET0rc7tNZ9E=&reserved=0> (6/28, Manfredi) "The Government Accountability Office (GAO) is urging NASA to step up its cybersecurity efforts. 'We have designated information security as a government-wide, high-risk area since 1997 and subsequently expanded this high-risk area to include protecting cyber critical infrastructure and securing personally identifiable information,' GAO wrote in a June 21 letter to NASA administrator Bill Nelson."

Flight

No content.

Earth

#### The Pacific Northwest Heat Wave Is Shocking But Shouldn't Be A Surprise

Washington Post

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#### NASA Looks At Louisiana Delta System, Eyes Global Forecasts

AP

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students can stand on islands that emerged the year they were born. NASA is using high-tech airborne systems along with boats and mud-slogging work on islands for a \$15 million, five-year study of these adjacent areas of Louisiana.”

## Humans in Space

### Europe Considering Concepts For Human Spaceflight

#### Space News

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### China's President Calls Shenzhou 12 Astronauts On Space Station

#### SPACE

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### Op-Ed | Mind The Gap In Low Earth Orbit

#### Space News

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### NASA Sends Squid Into Space For Research

#### Voice of America

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96dd17b|0|0|637605611691730114|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQljojV2luMzliLCJBTiI6Ikl1haWwiLCJXVCi6Mn0=|1000&sdata=u/CW3EBuxozSMVb87V4v5+mx5/+Pa+aV1ZPmPdTaf40=&reserved=0> (6/28)  
"Some 128 baby squid from Hawaii are in space for a study. The baby Hawaiian bobtail squid came from the University of Hawaii's Kewalo Marine Laboratory. ... Foster is now a professor at the University of Florida. She also works at a NASA space agency program that researches how microgravity affects the relationships between animals and microbes."

#### Detergent Maker Helps NASA Explore Space Laundry

UPI

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#### Why Is Russia Launching A New Module To The Space Station If It's Pulling Out?

Ars Technica

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#### Wow! NASA Photographer Spots Space Station Crossing The Sun During Spacewalk (Video)

SPACE

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#### 'Go For Your Passion': Teacher Set To Fly With NASA

Houston Chronicle

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e06&t=c&data=04|01|randy.c.cruz@nasa.gov|58a0154757d54556b6d908d93aecf624|7005d45845be48ae8140d43da96dd17b|0|0|637605611691750033|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQljojV2luMzliLCJBTiI6I6k1haWwiLCJXVCi6Mn0=|1000&sdata=T4L1MQ/a8X8CCD9azA8CXzvFbV195Rn/51NMTCNQ3g=&reserved=0> (6/28)  
"After a year-long setback due to COVID-19 closures, Domina Stamas' dream is finally coming true: Flying into the stratosphere on a NASA mission. 'This is the closest thing I'll ever get to being an astronaut,' she says. Stamas was born and raised in Sacramento, California, and now is a teacher at the newly opened Westlake Charter High School in Natomas."

Moon to Mars

China Releases First Videos Of Its Mars Rover, Including Eerie Noise As It Rolls Down A Ramp

Insider

<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021062902nasa&r=email-7f5d&l=012-b63&t=c&data=04|01|randy.c.cruz@nasa.gov|58a0154757d54556b6d908d93aecf624|7005d45845be48ae8140d43da96dd17b|0|0|637605611691759984|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQljojV2luMzliLCJBTiI6I6k1haWwiLCJXVCi6Mn0=|1000&sdata=I5Cnd5Dga3TR1z1I3WQXTLBUN+DKXs6brxUVqqLnIIE=&reserved=0> (6/28, Guenot) "China has released video and sound clips from its rover exploring the surface of Mars. The files were published by China National Space Agency on Sunday. The sound is of the Zhurong rover leaving its lander before taking its first ride in May, and can be heard in the video below."

China Releases New Footage From Zhurong Mars Rover

CNN

<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021062902nasa&r=email-7f5d&l=013-b20&t=c&data=04|01|randy.c.cruz@nasa.gov|58a0154757d54556b6d908d93aecf624|7005d45845be48ae8140d43da96dd17b|0|0|637605611691769940|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQljojV2luMzliLCJBTiI6I6k1haWwiLCJXVCi6Mn0=|1000&sdata=3dAl6L0D8bPmyOBtlQlLbgg0W+LTEoe1c+1HRPiGNqY=&reserved=0> (6/28, Rahim, Yeung) "China's National Space Administration (CNSA) has released new images of Mars from its landmark Tianwen-1 probe. Tianwen-1, whose name means 'quest for heavenly truth,' is made up of an orbiter, lander and a six-wheeled rover carrying scientific instruments."

NASA Investigates Perplexing Mystery Of Lakes Under Mars Surface

CNET News

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NASA Mars Lander Powers Through Dust Issue, Can Keep Doing Science Work

#### CNET News

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#### Clays Found In Martian Crater Hint That The Planet Was Once Habitable

#### New Scientist

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021062902nasa&r=email-7f5d&l=016-cbf&t=c&data=04|01|randy.c.cruz@nasa.gov|58a0154757d54556b6d908d93aecf624|7005d45845be48ae8140d43da96dd17b|0|0|637605611691779894|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQljojV2luMzliLCJBTiI6Ikl1haWwiLCJXVCi6Mn0=|1000&sdata=vBAmCXRj40QmAkjeHkrHhasfQKZV+OORrB5tTapo7aA=&reserved=0>> (6/28, O’Callaghan) “Parts of Mars may have been habitable for thousands or even a million years, based on analysis of clays found in one of its craters that could only have formed in a stable life-friendly environment. In 2016, NASA’s Curiosity rover used its onboard drill to sample the Martian surface inside Gale Crater, which it is exploring. Studying the sample with X-rays using the rover’s onboard instruments, scientists found the presence of a particular clay mineral related to so-called glauconitic clays, which point to a period of habitability in the crater’s past.”

#### China’s Mars Mission Milestones So Far As Tianwen-1 Releases Videos

#### Newsweek

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#### Declining Power Supply Could End NASA’s InSight Mars Mission Next Year

#### Spaceflight Now

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021062902nasa&r=email-7f5d&l=018-075&t=c&data=04|01|randy.c.cruz@nasa.gov|58a0154757d54556b6d908d93aecf624|7005d45845be48ae8140d43da96dd17b|0|0|637605611691799806|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQljojV2luMzliLCJBTiI6Ikl1haWwiLCJXVCi6Mn0=|1000&sdata=NhqtR64Z0vor8pS2PKYvkjRcVI5D77R8xl/zkgHWopg=&reserved=0>> (6/27, Clark) “Without a fortuitous whirlwind to clear dust off its solar panels, NASA’s InSight lander could end its mission on Mars within a year due to dropping power levels, the project’s chief scientist said last week. ‘We have a two-year extended mission which should take us to the end of calendar year 2022 if we can stay alive that long on Mars,’ said Bruce Banerdt, InSight’s principal investigator.”

#### Artemis 1 SLS Stacking Work Running Long, Preps For Integrated Tests Continue In Parallel



## NASA Space Flight

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## When Will Regular People Be Able To Visit The Moon?

### Gizmodo

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021062902nasa&r=email-7f5d&l=01a-b88&t=c&data=04|01|randy.c.cruz@nasa.gov|58a0154757d54556b6d908d93aecf624|7005d45845be48ae8140d43da96dd17b|0|0|637605611691809763|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQljojV2luMzliLCJBTiI6Ikh aWwiLCJXVCi6Mn0=|1000&sdata=at+QrAcjBy99znykaTIR4Mj2LORXOKwmGZM0tBSjRLw=&reserved=0>> (6/28, Kowitz) “As a tourist destination, the Moon doesn’t have a lot to offer: no beaches, no museums, no oxygen. On the other hand, it does have the virtue of being the Moon. The fucking Moon! That’s reason enough, really, to justify a trip, but try booking a flight and you’ll quickly run into obstacles. You’ll be told that NASA more or less dismantled its sending-people-to-the-Moon capacities decades ago and is only now building them back up.”

## China’s Zhurong Rover Captures Remarkable Sights And Sounds On Mars

### Gizmodo

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021062902nasa&r=email-7f5d&l=01b-426&t=c&data=04|01|randy.c.cruz@nasa.gov|58a0154757d54556b6d908d93aecf624|7005d45845be48ae8140d43da96dd17b|0|0|637605611691809763|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQljojV2luMzliLCJBTiI6Ikh aWwiLCJXVCi6Mn0=|1000&sdata=JS5xQJFtZYSZKAda+2loozcgyEPYzbNxDspFaofAQs=&reserved=0>> (6/28, Dvorsky) “The China National Space Administration (CNSA) has released new footage of the ongoing Tianwen-1 mission, which includes sounds of the rover in action. Released by CNSA on Sunday, June 27, the footage shows the parachute deployment, descent, and landing, the deployment of the Zhurong rover to the surface, as well as a sweet shot of the six-wheeled vehicle backing away from its wireless camera. Launched in July 2020, the Tianwen-1 mission—China’s first to the Red Planet—arrived in orbit around Mars on February 10, 2021.”

## China Shares Footage Of Zhurong Rover Landing Process With Sound

### SlashGear

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on Mars.”

## NASA Details How The Perseverance Mars Rover Took A Selfie On The Red Planet

SlashGear

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## Solar System and Beyond

### Venus’ Clouds Too Dry, Acidic For Life

Ars Technica

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021062902nasa&r=email-7f5d&l=01e-65b&t=c&data=04|01|randy.c.cruz@nasa.gov|58a0154757d54556b6d908d93aecf624|7005d45845be48ae8140d43da96dd17b|0|0|637605611691829674|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikh1aWwiLCJXVCi6Mn0=|1000&sdata=1x2WqabuXcebAP0i63Q5V9vSZQnRePJouOCBPzJpwrY=&reserved=0>> (6/28, Timmer) “Last year, a study made waves by suggesting a chemical that had been proposed as a potential indicator of life was present in the atmosphere of Venus. While the hellish conditions on the planet’s surface preclude the existence of any sort of life there, it remained possible that a milder environment existed in the planet’s clouds, high above its surface. ... One was a study of life in extreme conditions on Earth, driven in part by a NASA effort to determine how best to protect Mars from contamination by the probes we were sending there.”

### Clouds On Venus Are Too Dry To Sustain Life As We Know It, New Research Suggests

Gizmodo

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### No Hope For Life In Venus Clouds, But Maybe On Jupiter, Study Suggests

SPACE

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96dd17b|0|0|637605611691839639|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQljojV2luMzliLCJBTiI6I6k1haWwiLCJXVCi6Mn0=|1000&sdata=i7ChvfBFfCk36JXuBtDa0BFpxFyH59LXOvXCuim3tGs=&reserved=0> (6/28, Pultarova) “The amount of water in the atmosphere of Venus is so low that even the most drought-tolerant of Earth’s microbes wouldn’t be able to survive there, a new study has found. The findings seem to wipe out the hope stirred by last year’s discovery of molecules potentially created by living organisms in the scorched planet’s atmosphere that were seen as an indication of the possible presence of life. ... NASA Ames astrobiologist Chris McKay, one of the co-authors of the paper, said in the news conference that the findings of the study were conclusive and the new fleet of space missions currently being prepared for Venus will not change anything about the hope for life on Earth’s closest neighbor.”

#### Study Nixes Life In Clouds Of Venus, But Maybe In Jupiter’s?

AP

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#### Life On Venus? Not So Fast, Scientists Say. However, What About Jupiter?

USA Today

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#### Venus Cannot Sustain Life In The Clouds, But Jupiter Has Potential

CNET News

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#### No Quick Fix For Hubble Space Telescope’s Computer Glitch, NASA Says

## SPACE

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## New Planet Discovered After It 'Photobombs' European Space Agency Mission

### Daily Mirror (UK)

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## NASA Preparing To Study Venus

### KFOR-TV Oklahoma City

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## NASA Preparing For Venus Mission

### WHNT-TV Huntsville (AL)

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021062902nasa&r=email-7f5d&l=027-0a9&t=c&data=04|01|randy.c.cruz@nasa.gov|58a0154757d54556b6d908d93aecf624|7005d45845be48ae8140d43da96dd17b|0|0|637605611691879462|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQljojV2luMzliLCJBTiI6Ikl1haWwiLCJXVCi6Mn0=|1000&sdata=pFkl6O1cv76YOdSw4Kmx9g1KcnyqKjfaPdsjMLnfvEI=&reserved=0>> (6/28) "After finding major success with missions on other planets and beyond, NASA says it is gearing up for a new challenge."

## NASA Scientists Say Extrasolar Earths Could Be 50 Percent More Plentiful Than Thought

### Forbes

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021062902nasa&r=email-7f5d&l=028->

c62&t=c&data=04|01|randy.c.cruz@nasa.gov|58a0154757d54556b6d908d93aecf624|7005d45845be48ae8140d43da96dd17b|0|0|637605611691889417|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6I1k1haWwiLCJXVCi6Mn0=|1000&sdata=lrCo9wbMO3Ew0PeMfO2sqHPG9zNjQJQWs2dXrsgzuKA=&reserved=0> (6/29, Dorminey) “Extrasolar Earth-sized planets may be as much as 50 percent more plentiful than previously estimated, say NASA Ames Research Center scientists working with an international group of astronomers using ground-based telescopes at Gemini Observatory and Kitt Peak National Observatory. The team started with hundreds of stars first discovered as potential exoplanet hosts by NASA’S TESS (Transiting Exoplanet Survey Satellite) spacecraft. These stars had initially appeared to be single points of light until they were observed at higher resolution with instruments on the Gemini Observatory’s two 8.1 meter telescopes, says the National Science Foundation’s (NSF) *NoirLab*.”

Space Tech

No content.

Various

NASA Chief Says He Believes Aliens Are Real

Vice

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Equilibrium/Sustainability — Presented By NextEra Energy — NASA Head Doesn’t Think Humans ‘Alone’ In Universe

The Hill

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The Space Review: Before You Go, Administrator Nelson

Space Review

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haWwiLCJXVCI6Mn0=|1000&sdata=5EXXyJ1wZCmK5DGU3iz3uIVXiR3u30dwm8OFAbQ5Flw=&reserved=0> (6/28)  
“Every NASA administrator has an expiration date when they enter office, just like Major League Baseball managers or NBA coaches. The boundaries on their tenure can come with the end of the appointing president’s tenure: surviving across administrations is possible but usually limited to until a successor is nominated. More likely, the administrator either will leave office when the president does, or earlier due to issues with the administration—especially White House staff—or of their own volition.”

#### NASA Awards \$2.5B Enterprise IT Contract To Leidos

FedScoop

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#### House Passes Bills To Boost Science Competitiveness With China

The Hill

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#### GAO Urges NASA To Step Up Cybersecurity Efforts

Fox Business

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021062902nasa&r=email-7f5d&l=02e-044&t=c&data=04|01|randy.c.cruz@nasa.gov|58a0154757d54556b6d908d93aecf624|7005d45845be48ae8140d43da96dd17b|0|0|637605611691919287|Unknown|TWFpbGZsb3d8eyJWljoic4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikl1haWwiLCJXVCI6Mn0=|1000&sdata=uFxDDBbutUn7Ww6jWe3CLSKTnJmAhPKBqv9RMssDqmL4=&reserved=0>> (6/28, Manfredi) “The Government Accountability Office (GAO) is urging NASA to step up its cybersecurity efforts. ‘We have designated information security as a government-wide, high-risk area since 1997 and subsequently expanded this high-risk area to include protecting cyber critical infrastructure and securing personally identifiable information,’ GAO wrote in a June 21 letter to NASA administrator Bill Nelson.”

Other

#### Get Ready For Sonic Booms: SpaceX Rocket To Launch, Then Booster Will Return To Cape Canaveral

Florida Today

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=20210>

62902nasa&r=email-7f5d&l=02f-

648&t=c&data=04|01|randy.c.cruz@nasa.gov|58a0154757d54556b6d908d93aecf624|7005d45845be48ae8140d43da96dd17b|0|0|637605611691929238|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQljojV2luMzliLCJBTiI6I6k1haWwiLCJXVCi6Mn0=|1000&sdata=sJaeR7M7ETUaxLPI2io+DJs+whHHJNzdg5ze6/cVgc=&reserved=0> (6/28, Kelly) "A rarely heard cannonade of sonic booms will reverberate across the Space Coast Tuesday, the result of a SpaceX Falcon 9 rocket launch and subsequent landing at Cape Canaveral Space Force Station. After a 2:56 p.m. liftoff from Launch Complex 40, the rocket's 162-foot booster will separate from the payload-hauling second stage, flip around, and begin an autonomous descent toward nearby Landing Zone 1. Though it will have flown to an altitude hundreds of thousands of feet above Earth's surface, the booster will touch down just five-and-a-half miles from where it started."

Watch A SpaceX Rocket Ace Landing On A Drone Ship In Stunning New Video

SPACE

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d88&t=c&data=04|01|randy.c.cruz@nasa.gov|58a0154757d54556b6d908d93aecf624|7005d45845be48ae8140d43da96dd17b|0|0|637605611691929238|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQljojV2luMzliLCJBTiI6I6k1haWwiLCJXVCi6Mn0=|1000&sdata=8lIdo9Vq98LF/xEtyNLZYxR1Qjq5zuumjT6alp2QKCI=&reserved=0> (6/28, Howell) "SpaceX's latest rocket landing on a drone ship was so smooth that if you blink while watching the video, you could miss the touchdown. SpaceX posted the five-second clip on Twitter on June 21. In the video, a Falcon 9 rocket's first stage successfully kisses the deck of the Just Read the Instructions drone ship on June 17, off the coast of eastern Florida. Minutes before, the rocket successfully boosted the GPS III SV05 navigation satellite to orbit, for the company's 19th launch of the year from the Space Coast."

SpaceX Launch This Week Will Feature First Onshore Rocket Landing Since December

Spaceflight Now

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d00&t=c&data=04|01|randy.c.cruz@nasa.gov|58a0154757d54556b6d908d93aecf624|7005d45845be48ae8140d43da96dd17b|0|0|637605611691939204|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQljojV2luMzliLCJBTiI6I6k1haWwiLCJXVCi6Mn0=|1000&sdata=IBfNJKP04EqSMq267ZhsAHDsrUOf0pEm6oBmd9EXTZo=&reserved=0> (6/28, Clark) "SpaceX is scheduled to launch a Falcon 9 rocket on a southerly coast-hugging trajectory from Cape Canaveral Tuesday to place 88 small satellites into a polar orbit. The Falcon 9's first stage booster will return to Florida's Space Coast for the first onshore rocket landing at Cape Canaveral since December."

Musk Set To Tout Starlink Progress As Cost, Demand Hurdles Linger

Reuters

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2e1&t=c&data=04|01|randy.c.cruz@nasa.gov|58a0154757d54556b6d908d93aecf624|7005d45845be48ae8140d43da96dd17b|0|0|637605611691939204|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQljojV2luMzliLCJBTiI6I6k1haWwiLCJXVCi6Mn0=|1000&sdata=VmMV7MwShcaF3S0AbCLf3MRrJj8D1xKEVEt8/v/4kG8=&reserved=0> (6/29) "Don Joyce, a Nokia director working from home at a remote lake cottage in Canada, recently abandoned his painfully slow phone-line internet in favor of satellite broadband service Starlink, offered by Elon Musk's SpaceX. Starlink, which cost him C\$600 dollars (US\$486) for hardware and a lofty C\$150 monthly subscription, provides 'blindingly fast' speeds when uploading videos or streaming movies, he said."

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## [EXTERNAL] NASA Morning Briefing for Tuesday, March 23, 2021

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Tuesday, March 23, 2021 7:00 AM EDT

### Editor's Note

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## Top Stories

Mars Helicopter Ingenuity Gets 1st Taste Of Red Planet Air (Video)

### SPACE

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NASA's Commercial Partnering To Include Space Communications

### Aviation Week

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OPINION EXCHANGE | Former U.S. Senator Is A Solid But Unexciting NASA Pick

### Minneapolis Star Tribune

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021032302nasa&r=email-ebc0&l=005-279&t=c&data=04|01|randy.c.cruz@nasa.gov|ad86cd6d4bec4fbaeda808d8edea6acb|7005d45845be48ae8140d43da96dd17b|0|0|637520938386054671|Unknown|TWFpbGZsb3d8eyJWljoic4wLjAwMDAiLCJQIjoiV2luMzliLCJBTil6Ik1hYWwiLCJXVCi6Mn0=|1000&sdata=0HTIk3gXk9pHOUaZz6MxLRNuAQY1PXbeZEbtpRKFhjo=&reserved=0>> (3/22) "Bill Nelson was a fine congressman and an even better senator, probably the last true statesman to hold office in Florida. He's a decent man, and he lives right here in Orlando. We're proud of him and what he's done. But following

President Joe Biden's nomination of his former Senate colleague to be the next NASA administrator, we have to conclude Nelson was not the best choice. The agency needs an innovator in charge. Someone like Elon Musk, but without the personality defects."

#### There's Nothing Historic About Biden's NASA Pick

Government Executive

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021032302nasa&r=email-ebc0&l=006-e68&t=c&data=04|01|randy.c.cruz@nasa.gov|ad86cd6d4bec4fbaeda808d8edea6acb|7005d45845be48ae8140d43da96dd17b|0|0|637520938386054671|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ik1hYWwiLCJXVCi6Mn0=|1000&sdata=zPigcnRVNKKCXBwXcQg06bGwSrKfdWzHN5ZJ14xpiE8=&reserved=0>> (3/22, Koren) "Since the Apollo era, when every astronaut was white, and a man, NASA has worked to expand its vision of who participates in space exploration. Women used to sew spacesuits; now they wear them. Women, especially Black women, once weren't credited for their contributions; now they serve in the agency's upper echelons. President Joe Biden could have chosen the first woman to lead NASA in its 62-year history. Many people in the space community expected him to do exactly that."

#### Sanders: Musk Should 'Focus On Earth' Instead Of Space

The Hill

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Flight

No content.

Earth

#### Talking About Climate Change Is No Longer Enough: NASA Hints The Time Is Now Urgent

Forbes

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Humans in Space

No content.

Moon to Mars

Mars Helicopter Ingenuity Gets 1st Taste Of Red Planet Air (Video)

SPACE

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Perseverance Mars Rover Goes For A Test Drive Amid Detailed Checkouts

Astronomy Now (UK)

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See NASA Mars Rover’s First Look At The Helicopter Tucked Into Its Belly

CNET News

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Rocks And Other Features At Perseverance’s Landing Site Are Getting Navajo Names

Universe Today

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6dd17b|0|0|637520938386084539|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6I6k1h  
aWwiLCJXVCI6Mn0=|1000&sdata=i6Jp19ajUwmNy6Da1GGIC3PnP3GwDKV2qV1tEX8PPck=&reserved=0> (3/22,  
Williams) “On Feb. 18th, 2021, after spending six months in transit, the Perseverance rover landed in the Jezero  
Crater on Mars. By March 4th, it began driving short distances and calibrating its instruments in preparation for all the  
science operations it will conduct. ... This is in keeping with NASA’s tradition of giving features nicknames so that the  
mission team (which can number in the thousands) has a common name for them.”

#### NASA’s New Mars Rover Is About To Spawn A Tiny Helicopter

The Verge

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aWwiLCJXVCI6Mn0=|1000&sdata=/whM0pUoerPxSRD1cxYuu8I8bh+FUVx6D1Jz9iYasRg=&reserved=0>](https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021032302nasa&r=email-ebc0&l=00d-164&t=c&data=04|01|randy.c.cruz@nasa.gov|ad86cd6d4bec4fbaeda808d8edea6acb|7005d45845be48ae8140d43da96dd17b|0|0|637520938386084539|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6I6k1h<br/>aWwiLCJXVCI6Mn0=|1000&sdata=/whM0pUoerPxSRD1cxYuu8I8bh+FUVx6D1Jz9iYasRg=&reserved=0>) (3/22,  
Roulette) “NASA’s Perseverance rover is getting ready to deploy a mini-helicopter named Ingenuity on Mars. The four-  
pound, four-blade rotorcraft will attempt the first flight of its kind on another planet, and in the process, it will test a new  
mode of mobility that could transform the way we Earthlings remotely explore other worlds.”

#### Mars Helicopter Ingenuity Could Usher In New Era Of Exploration

UPI

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aWwiLCJXVCI6Mn0=|1000&sdata=BbMmk+aQefSg1e0TkA6jXEMQkP9afsq56RYDTzCjubi=&reserved=0>](https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021032302nasa&r=email-ebc0&l=00e-f3d&t=c&data=04|01|randy.c.cruz@nasa.gov|ad86cd6d4bec4fbaeda808d8edea6acb|7005d45845be48ae8140d43da96dd17b|0|0|637520938386084539|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6I6k1h<br/>aWwiLCJXVCI6Mn0=|1000&sdata=BbMmk+aQefSg1e0TkA6jXEMQkP9afsq56RYDTzCjubi=&reserved=0>) (3/22)  
“NASA’s plan to fly a helicopter on Mars for the first time in a few weeks could start a new era of interplanetary  
exploration like the space agency’s little Sojourner rover did in the 1990s, according to several experts. The Mars  
helicopter, Ingenuity, will be dropped from the Perseverance rover soon, but NASA hasn’t determined the exact date.  
The rover ejected a shield that covered the helicopter over the weekend.”

#### NASA’s Mars Helicopter Is Looking Good

BGR

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aWwiLCJXVCI6Mn0=|1000&sdata=SufJ5hp2UHGgBOtOvCW+93XYZEFz9bBIE7b5fpYww7g=&reserved=0>](https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021032302nasa&r=email-ebc0&l=00f-f9a&t=c&data=04|01|randy.c.cruz@nasa.gov|ad86cd6d4bec4fbaeda808d8edea6acb|7005d45845be48ae8140d43da96dd17b|0|0|637520938386094497|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6I6k1h<br/>aWwiLCJXVCI6Mn0=|1000&sdata=SufJ5hp2UHGgBOtOvCW+93XYZEFz9bBIE7b5fpYww7g=&reserved=0>) (3/22,  
Wehner) “NASA’s newest Mars mission has been going great. The space agency just barely managed to launch the  
mission in 2020 before the launch window closed, but everything since has been gone just about as well as anyone at  
NASA could have imagined. The rover successfully landed on Mars, tested all of its sensitive, high-tech instruments,  
and is already rolling on the Red Planet. But the rover isn’t the only vehicle that recently arrived on Mars. The Mars  
Ingenuity Helicopter was also along for the ride, and NASA just shared the first image of it in its new home.”

#### Photo Shows Mars Rover’s Ingenuity Helicopter For First Time On Red Planet Ahead Of Flight

Newsweek

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aWwiLCJXVCI6Mn0=|1000&sdata=SufJ5hp2UHGgBOtOvCW+93XYZEFz9bBIE7b5fpYww7g=&reserved=0>](https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021032302nasa&r=email-ebc0&l=010-f9a&t=c&data=04|01|randy.c.cruz@nasa.gov|ad86cd6d4bec4fbaeda808d8edea6acb|7005d45845be48ae8140d43da96dd17b|0|0|637520938386094497|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6I6k1h<br/>aWwiLCJXVCI6Mn0=|1000&sdata=SufJ5hp2UHGgBOtOvCW+93XYZEFz9bBIE7b5fpYww7g=&reserved=0>)

46d&t=c&data=04|01|randy.c.cruz@nasa.gov|ad86cd6d4bec4fbaeda808d8edea6acb|7005d45845be48ae8140d43da96dd17b|0|0|637520938386094497|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ik1h aWwiLCJXVCI6Mn0=|1000&sdata=9lZwtc5lhIngVSRPAy23/nxz+Bf14i84wghWK6pSqBY=&reserved=0> (3/22, Georgiou) “NASA has released an image showing its Mars helicopter Ingenuity on the Red Planet for the first time ahead of its historic maiden flight. Ingenuity is attached to the belly of the Perseverance rover, which landed in Mars’ Jezero Crater on February 18. The helicopter was covered by a shield to protect the vehicle during descent and landing. But this shield has now detached from the rover, revealing the aerial vehicle.”

### Viral Mars Conspiracy Theory Video Claims Humans Lived On Mars, Destroyed It In Nuclear War

Newsweek

<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021032302nasa&r=email-ebc0&l=011-02d&t=c&data=04|01|randy.c.cruz@nasa.gov|ad86cd6d4bec4fbaeda808d8edea6acb|7005d45845be48ae8140d43da96dd17b|0|0|637520938386094497|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ik1h aWwiLCJXVCI6Mn0=|1000&sdata=8yrX4K6nIVH+4iUFHLGczsan98DxGeLt/RNAinqqQ88=&reserved=0> (3/22, Browne) “A video in which a TikTok user claims humans once lived on Mars but rendered it uninhabitable in a nuclear war has gone viral. The false but entertaining theory also states this war would have caused a nuclear winter which is responsible for Mars’ popular red color. It has currently been liked more than 230,000 times and shared nearly 10,000 times. ... NASA scientists think the reason Mars is covered in iron oxide and the Earth is not may be to do with the fact that Mars is smaller than Earth and has weaker gravity.”

### The Mysterious Core Of Mars Is On The Large Side, NASA’s InSight Lander Data Suggests

SPACE

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### Revealed: Why We Should Look For Ancient Alien Spacecraft On The Moon, Mars And Mercury According To NASA Scientists

Forbes

<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021032302nasa&r=email-ebc0&l=013-738&t=c&data=04|01|randy.c.cruz@nasa.gov|ad86cd6d4bec4fbaeda808d8edea6acb|7005d45845be48ae8140d43da96dd17b|0|0|637520938386104451|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ik1h aWwiLCJXVCI6Mn0=|1000&sdata=PAQaEhWOKoedZzMWq1z1iZs6ooV1hh3OYRNqdpKDi2g=&reserved=0> (3/22, Carter) “From UFO crash sites on other planets and aliens ‘lurking’ on asteroids to a permanent radio telescope on the far side of the Moon, a new NASA-funded study into the search for intelligent extraterrestrial life (SETI) details how future NASA missions could purposefully look for the ‘technosignatures’ of advanced alien civilizations.”

### Mars Water Loss Shaped By Seasons And Storms



Phys (UK)

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Rocket Lab Launches Photon Pathfinder On They Go Up So Fast

NASA Space Flight

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Solar System and Beyond

See The Jumbo Asteroid That Just Flew Safely Past Earth

CNET News

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Powerful Protostars May Not Be Responsible For Ending Their Own Growth

New Atlas

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with NASA's Hubble telescope and the now-defunct Spitzer observatory.”

#### Hubble Captures Re-energized Planetary Nebula

Phys (UK)

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“Located around 5,000 light-years away in the constellation of Cygnus (the Swan), Abell 78 is an unusual type of planetary nebula. After exhausting the nuclear fuel in their cores, stars with a mass of around 0.8 to eight times the mass of our Sun collapse to form dense and hot white dwarf stars. As this process occurs, the dying star will throw off its outer layers of material, forming an elaborate cloud of gas and dust known as a planetary nebula.”

Space Tech

#### NASA's Commercial Partnering To Include Space Communications

Aviation Week

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“NASA's nearly two-decade-long push to establish game-changing commercial partnerships in low Earth orbit operations to expand human exploration and scientific research and grow the economy is broadening its scope to include a new role for private sector communications and navigation assets...”

#### Spaceflight Secures Launch Service Contract For NASA's LLITED Mission

Aerospace Technology

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“Spaceflight has secured a contract from NASA to provide integration and launch services for the Low-Latitude Ionosphere/Thermosphere Enhancements in Density (LLITED) mission. Under this contract, Spaceflight will launch the two identical 1.5U CubeSats to low-Earth orbit at the end of the year.”

Various

#### OPINION EXCHANGE | Former U.S. Senator Is A Solid But Unexciting NASA Pick

Minneapolis Star Tribune

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Nelson was a fine congressman and an even better senator, probably the last true statesman to hold office in Florida. He's a decent man, and he lives right here in Orlando. We're proud of him and what he's done. But following President Joe Biden's nomination of his former Senate colleague to be the next NASA administrator, we have to conclude Nelson was not the best choice. The agency needs an innovator in charge. Someone like Elon Musk, but without the personality defects."

#### Can The Infrastructure Package Fix The Lead Pipe Problem?

Politico

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"Editor's Note: Morning Energy is a free version of POLITICO Pro Energy's morning newsletter, which is delivered to our subscribers each morning at 6 a.m. The POLITICO Pro platform combines the news you need with tools you can use to take action on the day's biggest stories. Act on the news with POLITICO Pro. ... NELSON AT NASA: Things seem to be looking up for former Sen. Bill Nelson, whom Biden nominated to head NASA on Friday. Senators from both sides of the aisle appeared supportive of the Floridian serving as NASA administrator."

#### Former Astronaut Bill Nelson Nominated To Be Next NASA Chief

USA Today

<[https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021032302nasa&r=email-ebc0&l=01d-](https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021032302nasa&r=email-ebc0&l=01d-398&t=c&data=04|01|randy.c.cruz@nasa.gov|ad86cd6d4bec4fbaeda808d8edea6acb|7005d45845be48ae8140d43da96dd17b|0|0|637520938386134316|Unknown|TWFPbGZsb3d8eyJWljoimc4wLjAwMDAiLCJQljoiv2luMzliLCJBTil6lk1haWwiLCJXVCI6Mn0=|1000&sdata=O0qZggpv20S0DEdej0+bBcnCQ8KzII9y4xDznQqYoMM=&reserved=0)

398&t=c&data=04|01|randy.c.cruz@nasa.gov|ad86cd6d4bec4fbaeda808d8edea6acb|7005d45845be48ae8140d43da96dd17b|0|0|637520938386134316|Unknown|TWFPbGZsb3d8eyJWljoimc4wLjAwMDAiLCJQljoiv2luMzliLCJBTil6lk1haWwiLCJXVCI6Mn0=|1000&sdata=O0qZggpv20S0DEdej0+bBcnCQ8KzII9y4xDznQqYoMM=&reserved=0> (3/22)

"Former astronaut Bill Nelson nominated to be next NASA chief"

#### Nelson's Nomination To Head NASA Draws Both Cheers And Jeers

Florida Today

<[https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021032302nasa&r=email-ebc0&l=01e-](https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021032302nasa&r=email-ebc0&l=01e-7f9&t=c&data=04|01|randy.c.cruz@nasa.gov|ad86cd6d4bec4fbaeda808d8edea6acb|7005d45845be48ae8140d43da96dd17b|0|0|637520938386144270|Unknown|TWFPbGZsb3d8eyJWljoimc4wLjAwMDAiLCJQljoiv2luMzliLCJBTil6lk1haWwiLCJXVCI6Mn0=|1000&sdata=LOPuiY4Anxley9N2OPI5uJbgagTCPGKHY7P+HYvwqgY=&reserved=0)

7f9&t=c&data=04|01|randy.c.cruz@nasa.gov|ad86cd6d4bec4fbaeda808d8edea6acb|7005d45845be48ae8140d43da96dd17b|0|0|637520938386144270|Unknown|TWFPbGZsb3d8eyJWljoimc4wLjAwMDAiLCJQljoiv2luMzliLCJBTil6lk1haWwiLCJXVCI6Mn0=|1000&sdata=LOPuiY4Anxley9N2OPI5uJbgagTCPGKHY7P+HYvwqgY=&reserved=0> (3/22, Joy) "He grew up on the Space Coast of Florida, before it was the Space Coast. The Kennedy Space Center sits partly on land that had been his grandparents' homestead. He even orbited the Earth on the Space Shuttle. Now Bill Nelson is set to be the next NASA administrator while the agency prepares to send the first woman to the lunar surface."

#### There's Nothing Historic About Biden's NASA Pick

Government Executive

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545&t=c&data=04|01|randy.c.cruz@nasa.gov|ad86cd6d4bec4fbaeda808d8edea6acb|7005d45845be48ae8140d43da96dd17b|0|0|637520938386144270|Unknown|TWFPbGZsb3d8eyJWljoimc4wLjAwMDAiLCJQljoiv2luMzliLCJBTil6lk1haWwiLCJXVCI6Mn0=|1000&sdata=BN0s/CBj00zA9Z4VI2K1VDTICwBzEt7RNoSyhHsCw1A=&reserved=0> (3/22, Koren) "Since the Apollo era, when every astronaut was white, and a man, NASA has worked to expand its vision of

who participates in space exploration. Women used to sew spacesuits; now they wear them. Women, especially Black women, once weren't credited for their contributions; now they serve in the agency's upper echelons. President Joe Biden could have chosen the first woman to lead NASA in its 62-year history. Many people in the space community expected him to do exactly that."

#### Lego Marks First Space Shuttle Flight With New Set Featuring Discovery And Hubble Space Telescope

CNN

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#### Lego Reveals Space Shuttle Discovery Set Featuring Hubble Space Telescope

SPACE

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#### Lego Launches Epis 2,354-Piece NASA Space Shuttle Discovery Set

CNET News

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#### Lego Is Launching A Space Shuttle Discovery Set With More Than 2,300 Pieces

USA Today

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021032302nasa&r=email-ebc0&l=023-1ba&t=c&data=04|01|randy.c.cruz@nasa.gov|ad86cd6d4bec4fbaeda808d8edea6acb|7005d45845be48ae8140d43da96dd17b|0|0|637520938386164193|Unknown|TWFPbGZsb3d8eyJWljojoiMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikh1aWwiLCJXVCi6Mn0=|1000&sdata=1tHbQXz9oPfcJ03n8ejjWq1mzg3y96ebUhOMBc73PkQ=&reserved=0>>

aWwiLCJXVCI6Mn0=|1000&sdata=CwgDEB2BAKRGEX3waHo0+VFszUKVvbtXegjn03pcldM=&reserved=0> (3/22, Molina) “Lego’s latest space-themed set is ready to take flight. The toymaker announced Monday it will launch a NASA Space Shuttle Discovery set on April 1. The 2,354-piece set commemorates the 40th anniversary since the space shuttle’s first flight.”

#### Lego Announces Its Biggest And Most Detailed Space Shuttle Set Yet

The Verge

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#### Legendary NASA Flight Director Glynn Lunney Dies

Aviation Week

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021032302nasa&r=email-ebc0&l=025-3e8&t=c&data=04|01|randy.c.cruz@nasa.gov|ad86cd6d4bec4fbaeda808d8edea6acb|7005d45845be48ae8140d43da96dd17b|0|0|637520938386164193|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikh1aWwiLCJXVCI6Mn0=|1000&sdata=kPV2JpnWZVUstCxp3U9h5kX+4iFdDsKhbZonxxPWVVRU=&reserved=0>> (3/22) “Glynn Lunney, a member of the Space Task Group that launched NASA’s human spaceflight operations and the flight director remembered for leading the safe return of the Apollo 13 crew, died at his Houston...”

#### Glynn Lunney, NASA Flight Director, Dies At 84

Houston Chronicle

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#### Glynn Lunney Dies At 84

WRDQ-TV Orlando (FL)

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the way to the moon.”

## This 12-year-old Is Now A College Student, And She Wants To Work At NASA

BGR

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021032302nasa&r=email-ebc0&l=028-52f&t=c&data=04|01|randy.c.cruz@nasa.gov|ad86cd6d4bec4fbaeda808d8edea6acb|7005d45845be48ae8140d43da96dd17b|0|0|637520938386174146|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikh1aWwiLCJXVCi6Mn0=|1000&sdata=cFLQmqo+5sFqWUJkkBgGsTGJbo+ZRId5wR+/H4lu1lw=&reserved=0>> (3/22, Wehner) “If you were to see 12-year-old Alena Wicker wearing her Arizona State University hoodie you might assume that she got it from an older sibling or even a parent. I mean, a 12-year-old obviously isn’t a student at the prestigious school... right? ... Now, the 12-year-old is on course to become the youngest black woman ever to hold a NASA position and hopes to be working with the space agency by the time she turns 16.”

Other

## Sanders: Musk Should ‘Focus On Earth’ Instead Of Space

The Hill

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## Bernie Sanders Criticizes Elon Musk And SpaceX

redOrbit

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## Bernie Sanders Disses Elon Musk’s Wealth, Space Plans As He Calls For ‘Progressive’ Taxes

Fox Business

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Lea) “Sen. Bernie Sanders, I-Vt., hit back at Tesla and SpaceX CEO Elon Musk on Twitter Monday, saying the U.S. needs to focus on residents’ needs before it concentrates on space exploration. The Independent senator said that included implementing a more progressive tax system.”

#### Bernie Sanders Tells Elon Musk: ‘We Need To Focus On Earth’

People

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#### Bernie Sanders Says ‘Focus On Earth’ After Elon Musk Tweets About ‘Multiplanetary’ Life

Newsweek

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#### Starship SN11 Returns To Pre-launch Testing

NASA Space Flight

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#### Europe Is Starting To Freak Out About The Launch Dominance Of SpaceX

Ars Technica

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transportation solutions.' Basically, the agency provided about \$600,000, each, to three companies—ArianeGroup, Avio, and Rocket Factory Augsburg—to study competitive launch systems from 2030 onward.”

#### ESA Lunar Pathfinder Mission Will Use Advanced Satellite Navigation

SlashGear

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McGlaun) “The ESA is talking about its Lunar Pathfinder mission to the moon. That mission will carry an advanced satellite navigation receiver and will perform the first satnav positioning fix in lunar orbit. The ESA says the experimental payload is a preliminary step in its plan to expand reliable satnav coverage and communication links to explorers around and on the moon during the decade.”

#### SpaceX’s Starlink Satellite Internet In Talks For A Place In The UK’s \$6.9 Billion ‘Project Gigabit’

CNBC

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Sheetz, Kopack) “Elon Musk’s SpaceX is in talks with the United Kingdom for the company’s Starlink satellite unit to potentially to earn funding as a part of the government’s new \$6.9 billion internet infrastructure program, CNBC confirmed. U.K. Minister for Digital Infrastructure Matt Warman recently met with Starlink leadership, a person familiar with the talks told CNBC, as a part of ongoing discussions with a number of technology communications companies for the ‘Project Gigabit’ plan rolled out on Friday.”

#### Weather Looks Good For SpaceX’s Next Starlink Launch From Cape Canaveral

Florida Today

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Kelly) “Conditions should be solidly favorable for SpaceX’s upcoming launch early Wednesday, a mission slated to boost the next batch of Starlink internet satellites from Cape Canaveral Space Force Station. Weather was calculated at 90% ‘go’ for Falcon 9’s 4:58 a.m. ascent from Launch Complex 40, the Space Force said Monday, adding that other factors like upper-level winds and the drone ship’s at-sea conditions should pose little risk. This flight will mark the ninth for the Space Coast this year and 23rd for Starlink overall.”

#### A Little Love From The Air Force Can Put A Space Business On The Map

Space News

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(3/22, Kelly) “Conditions should be solidly favorable for SpaceX’s upcoming launch early Wednesday, a mission slated to boost the next batch of Starlink internet satellites from Cape Canaveral Space Force Station. Weather was calculated at 90% ‘go’ for Falcon 9’s 4:58 a.m. ascent from Launch Complex 40, the Space Force said Monday, adding that other factors like upper-level winds and the drone ship’s at-sea conditions should pose little risk. This flight will mark the ninth for the Space Coast this year and 23rd for Starlink overall.”



aWwiLCJXVCI6Mn0=|1000&sdata=HKzZVleVIUpPcBxDQePV1Rs0BP7XN8spUH7R4woQt0l=&reserved=0> (3/22, Erwin) “The Pentagon’s renewed focus on space and the standup of the U.S. Space Force are boosting demand for technologies being developed by commercial companies. The Air Force technology accelerator known as AFWERX is responding by creating new opportunities for space entrepreneurs.”

#### GAO To Review Space Command Headquarters Decision

Federal Times

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SpaceX Hopes To Launch And Land A New Prototype Of Its Starship Mega-rocket This Week. The Last 3 Exploded.

Business Insider

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Soyuz Launch Marks First Full-commercial Mission Of Russia’s GK Launch Services

Space News

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d12&t=c&data=04|01|randy.c.cruz@nasa.gov|ad86cd6d4bec4fbaeda808d8edea6acb|7005d45845be48ae8140d43da96dd17b|0|0|637520938386233884|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTil6Ik1haWwiLCJXVCi6Mn0=|1000&sdata=5IVlhRgVIHAXSzPEEOFLP211mL0Ewvwy9siamMB19Jw=&reserved=0>. The NASA Morning Briefing is published five days a week by Bulletin Intelligence, which creates custom briefings for government and corporate leaders. We can be found on the Web at [BulletinIntelligence.com](http://BulletinIntelligence.com), or called at (703) 483-6100.

## **[EXTERNAL] NASA Morning Briefing for Tuesday, March 24, 2020**

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#### Top Stories

##### White House Announces Supercomputing Consortium To Tackle Coronavirus

The Hill <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020032402nasa-26r-3Demail-2D0242-26l-3D003-2D0ec-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=tuWFDnSEqUdfzg8u\\_WjS\\_an\\_dFljhJZoavF99JtLW8&s=QIRV44USVu2-h\\_Aawuv9TPlMFsac0-5Z3MsYE\\_Uwrm4&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020032402nasa-26r-3Demail-2D0242-26l-3D003-2D0ec-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=tuWFDnSEqUdfzg8u_WjS_an_dFljhJZoavF99JtLW8&s=QIRV44USVu2-h_Aawuv9TPlMFsac0-5Z3MsYE_Uwrm4&e=>)> (3/23, Rodrigo) "The White House is launching a public-private consortium tasked with harnessing supercomputing resources to tackle the spread of the novel coronavirus. The group will be led by the White House Office of Science and Technology Policy, the Department of Energy and IBM. The COVID-19 High Performance Computing Consortium counts Amazon Web Services, Microsoft, Google Cloud, MIT and NASA among its members."

##### Trump Admin Using Nation's Supercomputers To Fight Coronavirus In Partnership With Private Sector

Washington Times <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020032402nasa-26r-3Demail-2D0242-26l-3D004-2D335-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=tuWFDnSEqUdfzg8u\\_WjS\\_an\\_dFljhJZoavF99JtLW8&s=OkWE7TrbWHwQQ-7d3EYp3vYd16sRHfA97wEyrbjucGM&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020032402nasa-26r-3Demail-2D0242-26l-3D004-2D335-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=tuWFDnSEqUdfzg8u_WjS_an_dFljhJZoavF99JtLW8&s=OkWE7TrbWHwQQ-7d3EYp3vYd16sRHfA97wEyrbjucGM&e=>)> (3/23, Lovelace) "The Trump administration has partnered with the private sector to make the nation's supercomputing capabilities available to researchers fighting the coronavirus. The White House Office of Science and Technology and the Department of Energy formed the new partnership on Sunday with Amazon Web Services, Google Cloud, IBM and Microsoft. Also participating in the COVID-19 High Performance Computing Consortium are the Energy Department's five national laboratories, the National Aeronautics and Space

Administration (NASA), the National Science Foundation, the Massachusetts Institute of Technology, and Rensselaer Polytechnic Institute.”

#### Astronauts Quarantined Ahead Of Journey To International Space Station

Reuters <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020032402nasa-26r-3Demail-2D0242-26l-3D005-2D8ae-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=tuWFDnSEqUdfzg8u\\_WjS\\_an\\_dFlfjhJZoavF99JtLW8&s=zUJ80d6WwtWMV1rGlpGzZFYAQFnnE-OswGLNAhvefDY&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020032402nasa-26r-3Demail-2D0242-26l-3D005-2D8ae-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=tuWFDnSEqUdfzg8u_WjS_an_dFlfjhJZoavF99JtLW8&s=zUJ80d6WwtWMV1rGlpGzZFYAQFnnE-OswGLNAhvefDY&e=>)> (3/23, Roulette) “Two Russian cosmonauts and a U.S. astronaut were spending their final weeks on Earth in quarantine before they are scheduled to blast off on April 9 for the International Space Station for six months as the coronavirus pandemic sweeps Earth. Launching from a pad in Kazakhstan, the Expedition 63 crew will depart Earth without much of the usual fanfare at the Baikonur cosmodrome and ceremonies in Moscow, as the world attempts to curb the spread of the COVID-19 disease through social distancing and citywide lockdowns. ‘We are ready to go, we are healthy, we’ve been tested very well with the medical teams,’ U.S. astronaut Chris Cassidy said Monday in a video from quarantine.”

#### Retired NASA Astronaut Scott Kelly Shares Isolation Tips From Spending A Year In Space

ABC News <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020032402nasa-26r-3Demail-2D0242-26l-3D006-2D7e6-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=tuWFDnSEqUdfzg8u\\_WjS\\_an\\_dFlfjhJZoavF99JtLW8&s=5ddM9ykrbe9B\\_D21pDyV6acTcxwUjW8mBRmrEJcY3nl&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020032402nasa-26r-3Demail-2D0242-26l-3D006-2D7e6-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=tuWFDnSEqUdfzg8u_WjS_an_dFlfjhJZoavF99JtLW8&s=5ddM9ykrbe9B_D21pDyV6acTcxwUjW8mBRmrEJcY3nl&e=>)> (3/23, Kindelan) “Retired NASA Astronaut Scott Kelly spent 340 days on the International Space Station (ISS) where he experienced what Americans are collectively taking part in now: isolation. At least 11 states across the U.S. have implemented or announced statewide closures of all non-essential business to try to stop the spread of the novel coronavirus and local governments across the country are trying to encourage and even enforce stay-at-home measures.”

#### The Coronavirus Pandemic Argues For More Funding For NASA’s Artemis Program, Not Less

The Hill <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020032402nasa-26r-3Demail-2D0242-26l-3D007-2D0c9-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=tuWFDnSEqUdfzg8u\\_WjS\\_an\\_dFlfjhJZoavF99JtLW8&s=VlzhvrZmvjzk7Iri4jDVsz0wcbk1n0-XWio7RIkcG0&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020032402nasa-26r-3Demail-2D0242-26l-3D007-2D0c9-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=tuWFDnSEqUdfzg8u_WjS_an_dFlfjhJZoavF99JtLW8&s=VlzhvrZmvjzk7Iri4jDVsz0wcbk1n0-XWio7RIkcG0&e=>)> (3/23, Whittington) “Recently, space journalist Eric Berger posed an interesting question on Twitter. “Will be interesting to see how NASA gins up billions more for Artemis in the midst of a deep recession, in an election year, with the only near-term goal of the program a mad-dash to the lunar surface by 2024, which everyone agrees is technically very unlikely, while teleworking.” Berger asks a serious question. Imagine that next fall the United States is in a recession brought on by the coronavirus.”

#### Boeing To Shut Down All Puget Sound Operations For Two Weeks After Employee Who Had Coronavirus Dies

Washington Post <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020032402nasa-26r-3Demail-2D0242-26l-3D008-2Dedb-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=tuWFDnSEqUdfzg8u\\_WjS\\_an\\_dFlfjhJZoavF99JtLW8&s=VlzhvrZmvjzk7Iri4jDVsz0wcbk1n0-XWio7RIkcG0&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020032402nasa-26r-3Demail-2D0242-26l-3D008-2Dedb-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=tuWFDnSEqUdfzg8u_WjS_an_dFlfjhJZoavF99JtLW8&s=VlzhvrZmvjzk7Iri4jDVsz0wcbk1n0-XWio7RIkcG0&e=>)>

mHkTTiYCEf5ROyus&m=tuWFDnSEqUdfzg8u\_WjS\_an\_dFlfjhJZoavF99JtLW8&s=7cdsw8\_wXuoGJ1KWOGZuVzlrJzvwCmlIwiMDnPjqOA&e=> (3/23, Gregg, Davenport) "Boeing will halt all production activities in the Puget Sound region of Washington state, an early national hotspot for coronavirus, for two weeks following the reported death of an employee. ... Its facilities in Mississippi and Louisiana, where Boeing has been working on NASA's Space Launch System rocket, are temporarily closed due to direction from the space agency."

Flight

No content.

Earth

#### White House Announces Supercomputing Consortium To Tackle Coronavirus

The Hill <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020032402nasa-26r-3Demail-2D0242-26l-3D009-2Dab9-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=tuWFDnSEqUdfzg8u\\_WjS\\_an\\_dFlfjhJZoavF99JtLW8&s=9QgP8pqS-gk5lg9pBprXZbPIVCLpvSDGZowcScSqqLw&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020032402nasa-26r-3Demail-2D0242-26l-3D009-2Dab9-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=tuWFDnSEqUdfzg8u_WjS_an_dFlfjhJZoavF99JtLW8&s=9QgP8pqS-gk5lg9pBprXZbPIVCLpvSDGZowcScSqqLw&e=>) (3/23, Rodrigo) "The White House is launching a public-private consortium tasked with harnessing supercomputing resources to tackle the spread of the novel coronavirus. The group will be led by the White House Office of Science and Technology Policy, the Department of Energy and IBM. The COVID-19 High Performance Computing Consortium counts Amazon Web Services, Microsoft, Google Cloud, MIT and NASA among its members."

#### Trump Admin Using Nation's Supercomputers To Fight Coronavirus In Partnership With Private Sector

Washington Times <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020032402nasa-26r-3Demail-2D0242-26l-3D00a-2D280-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=tuWFDnSEqUdfzg8u\\_WjS\\_an\\_dFlfjhJZoavF99JtLW8&s=15\\_TCGJubKR0TKP70vUQRMKVx7q7PRsXPawIErS0Frs&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020032402nasa-26r-3Demail-2D0242-26l-3D00a-2D280-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=tuWFDnSEqUdfzg8u_WjS_an_dFlfjhJZoavF99JtLW8&s=15_TCGJubKR0TKP70vUQRMKVx7q7PRsXPawIErS0Frs&e=>) (3/23, Lovelace) "The Trump administration has partnered with the private sector to make the nation's supercomputing capabilities available to researchers fighting the coronavirus. The White House Office of Science and Technology and the Department of Energy formed the new partnership on Sunday with Amazon Web Services, Google Cloud, IBM and Microsoft. Also participating in the COVID-19 High Performance Computing Consortium are the Energy Department's five national laboratories, the National Aeronautics and Space Administration (NASA), the National Science Foundation, the Massachusetts Institute of Technology, and Rensselaer Polytechnic Institute."

#### NASA Supercomputers Join Fight Against Coronavirus

SPACE <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020032402nasa-26r-3Demail-2D0242-26l-3D00b-2Dd7d-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=tuWFDnSEqUdfzg8u\\_WjS\\_an\\_dFlfjhJZoavF99JtLW8&s=ZcMT8pApXRH2DMIQGOiK9SjcbCnqcvSxnZhlgiyQwJs&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020032402nasa-26r-3Demail-2D0242-26l-3D00b-2Dd7d-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=tuWFDnSEqUdfzg8u_WjS_an_dFlfjhJZoavF99JtLW8&s=ZcMT8pApXRH2DMIQGOiK9SjcbCnqcvSxnZhlgiyQwJs&e=>) (3/23, Bartels) "As the U.S. scrambles to respond to the spreading COVID-19 pandemic, NASA supercomputers are joining the effort to look for potential treatment and vaccine candidates. A new initiative brings together NASA and the National Science Foundation as well as a host of Department of Energy laboratories, companies and academic institutions. The White House announced the effort, meant to divert spare computing



resources to research aimed at slowing the pandemic, today (March 23).”

#### America’s Supercomputers Are Now Helping Scientists Fight Coronavirus

Vice <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020032402nasa-26r-3Demail-2D0242-26l-3D00c-2Da42-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=tuWFDnSEqUdfzg8u\\_WjS\\_an\\_dFIjfhJZoavF99JtLW8&s=UdPUH2nXSIGbFB285b7p-xvMIE3T5in7qNi6ntKzE2U&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020032402nasa-26r-3Demail-2D0242-26l-3D00c-2Da42-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=tuWFDnSEqUdfzg8u_WjS_an_dFIjfhJZoavF99JtLW8&s=UdPUH2nXSIGbFB285b7p-xvMIE3T5in7qNi6ntKzE2U&e=>)> (3/23, Bender) “The White House announced the creation of a supercomputing consortium on Monday that will pool resources to aid in researching and modeling Covid-19. Fourteen different organizations, both federal and private, will give teams of scientists free access to time on their high-powered computing clusters and support from staff. ... NASA will be sharing its High-End Computing Capability Portfolio, which the organization uses for large-scale modeling and simulations, while Rensselaer Polytechnic Institute will enlist AiMOS, a supercomputer designed to explore applications of artificial intelligence.”

#### Coronavirus WAR: NASA Offers Supercomputers To Join Fight Against Virus

Daily Express (UK) <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020032402nasa-26r-3Demail-2D0242-26l-3D00d-2D3f2-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=tuWFDnSEqUdfzg8u\\_WjS\\_an\\_dFIjfhJZoavF99JtLW8&s=BTnbFKR5JRzzhFzvYoF4SEw2FnilmKL-w5qzQxh2JCM&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020032402nasa-26r-3Demail-2D0242-26l-3D00d-2D3f2-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=tuWFDnSEqUdfzg8u_WjS_an_dFIjfhJZoavF99JtLW8&s=BTnbFKR5JRzzhFzvYoF4SEw2FnilmKL-w5qzQxh2JCM&e=>)> (3/23, Day) “NASA’s supercomputers are joining the effort to look for potential treatment and vaccine candidates for COVID-19. It comes as the US struggles to grapple with the outbreak as it spreads through the country at an alarming rate. A new initiative bringing together NASA and the National Science Foundation as well as hosting the Department of Energy laboratories, companies and academic institutions is looking to come up with solutions faster than humans are capable of.”

#### Scientists Just Discovered A Massive New Vulnerability In The Antarctic Ice Sheet

Washington Post <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020032402nasa-26r-3Demail-2D0242-26l-3D00e-2D74f-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=tuWFDnSEqUdfzg8u\\_WjS\\_an\\_dFIjfhJZoavF99JtLW8&s=KcmO2rYTCyJevvhSa4Dkx\\_fDrSiTjXljicqq5g6hYpE&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020032402nasa-26r-3Demail-2D0242-26l-3D00e-2D74f-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=tuWFDnSEqUdfzg8u_WjS_an_dFIjfhJZoavF99JtLW8&s=KcmO2rYTCyJevvhSa4Dkx_fDrSiTjXljicqq5g6hYpE&e=>)> (3/23, Mooney) “Scientists have found a new point of major vulnerability in the Antarctic ice sheet, in a region that already appears to be changing as the climate warms and has the potential to raise sea levels by nearly five feet over the long term. ... ‘The configuration of the bed of the glacier makes this one of the weakest spots in east Antarctica,’ said Virginia Brancato, a NASA scientist who was the lead author of the new study in Geophysical Research Letters.”

#### Humans in Space

#### Astronauts Quarantined Ahead Of Journey To International Space Station

Reuters <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020032402nasa-26r-3Demail-2D0242-26l-3D00f-2Da13-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=tuWFDnSEqUdfzg8u\\_WjS\\_an\\_dFIjfhJZoavF99JtLW8&s=Bn3ayxCGFviW60GxkE-](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020032402nasa-26r-3Demail-2D0242-26l-3D00f-2Da13-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=tuWFDnSEqUdfzg8u_WjS_an_dFIjfhJZoavF99JtLW8&s=Bn3ayxCGFviW60GxkE-)>

M98c7TFTEIIAoVoA4yAUqtQ0&e=> (3/23, Roulette) "Two Russian cosmonauts and a U.S. astronaut were spending their final weeks on Earth in quarantine before they are scheduled to blast off on April 9 for the International Space Station for six months as the coronavirus pandemic sweeps Earth. Launching from a pad in Kazakhstan, the Expedition 63 crew will depart Earth without much of the usual fanfare at the Baikonur cosmodrome and ceremonies in Moscow, as the world attempts to curb the spread of the COVID-19 disease through social distancing and citywide lockdowns. 'We are ready to go, we are healthy, we've been tested very well with the medical teams,' U.S. astronaut Chris Cassidy said Monday in a video from quarantine."

#### While We Were Stockpiling, Here's What Astronauts Were Up To In Space Last Week

CNN <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020032402nasa-26r-3Demail-2D0242-26l-3D010-2Db13-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=tuWFDnSEqUdfzg8u\\_WjS\\_an\\_dFlfjhJZoavF99JtLW8&s=IdT1lgFiePLMmzfbxd9855VFVA9Mc6lvB0EvFvcScp8&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020032402nasa-26r-3Demail-2D0242-26l-3D010-2Db13-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=tuWFDnSEqUdfzg8u_WjS_an_dFlfjhJZoavF99JtLW8&s=IdT1lgFiePLMmzfbxd9855VFVA9Mc6lvB0EvFvcScp8&e=>) (3/23, Strickland) "For astronauts living on the International Space Station, their life is a type of quarantine. They can't go outside unless it's on a planned spacewalk in very specific gear and they remain in the same confined space for six months or longer. While many of us are practicing social distancing, working from home or living in quarantine-like and isolated situations, life goes on as normal for the space station-dwelling astronauts. Here's how NASA protects astronauts and the International Space Station from coronavirus."

#### Retired NASA Astronaut Scott Kelly Shares Isolation Tips From Spending A Year In Space

ABC News <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020032402nasa-26r-3Demail-2D0242-26l-3D011-2D689-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=tuWFDnSEqUdfzg8u\\_WjS\\_an\\_dFlfjhJZoavF99JtLW8&s=eM70ylAkuGOHf7wtqD2eLGnf7kAgE-JSx3Of-IP1b0l&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020032402nasa-26r-3Demail-2D0242-26l-3D011-2D689-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=tuWFDnSEqUdfzg8u_WjS_an_dFlfjhJZoavF99JtLW8&s=eM70ylAkuGOHf7wtqD2eLGnf7kAgE-JSx3Of-IP1b0l&e=>) (3/23, Kindelan) "Retired NASA Astronaut Scott Kelly spent 340 days on the International Space Station (ISS) where he experienced what Americans are collectively taking part in now: isolation. At least 11 states across the U.S. have implemented or announced statewide closures of all non-essential business to try to stop the spread of the novel coronavirus and local governments across the country are trying to encourage and even enforce stay-at-home measures."

#### He Spent A Year In Space. Hear How He Coped With Isolation

CNN <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020032402nasa-26r-3Demail-2D0242-26l-3D012-2D918-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=tuWFDnSEqUdfzg8u\\_WjS\\_an\\_dFlfjhJZoavF99JtLW8&s=U4rFedAhhe5GjsteGDRgrZ7ZROVXphvOBm2OJCCMKQI&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020032402nasa-26r-3Demail-2D0242-26l-3D012-2D918-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=tuWFDnSEqUdfzg8u_WjS_an_dFlfjhJZoavF99JtLW8&s=U4rFedAhhe5GjsteGDRgrZ7ZROVXphvOBm2OJCCMKQI&e=>) (3/23) "Retired astronaut Scott Kelly spent 520 days in space during his time at NASA. Hear his tips for coping with isolation."

#### Astronaut Scott Kelly Gives Isolation Tips During Coronavirus Outbreak

People <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020032402nasa-26r-3Demail-2D0242-26l-3D013-2Dd36-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=tuWFDnSEqUdfzg8u\\_WjS\\_an\\_dFlfjhJZoavF99JtLW8&s=P4qjaTcQznZI\\_Wj7hUE\\_N64VhA7](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020032402nasa-26r-3Demail-2D0242-26l-3D013-2Dd36-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=tuWFDnSEqUdfzg8u_WjS_an_dFlfjhJZoavF99JtLW8&s=P4qjaTcQznZI_Wj7hUE_N64VhA7)

iar7cDjJAvb8GhyU&e=> (3/23, DeSantis) “Retired NASA astronaut Scott Kelly knows a thing or two about living in isolation. Kelly, 56, spent 340 consecutive days in space on the International Space Station — and now that much of the world has been forced to isolate themselves in their homes due to the coronavirus outbreak, he’s sharing some of the tips and tricks he’s learned along the way.”

#### 5 Tips NASA Astronauts Use When Living In ‘Confinement’ In Space To Stay Happy And Productive

CNBC <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020032402nasa-26r-3Demail-2D0242-26l-3D014-2Df39-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=tuWFDnSEqUdfzg8u\\_WjS\\_an\\_dFIjfhJZoavF99JtLW8&s=JnQ3kMAqz89qZlDcDE3cpigN95O8cqME-0U6Qb\\_Mwj0&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020032402nasa-26r-3Demail-2D0242-26l-3D014-2Df39-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=tuWFDnSEqUdfzg8u_WjS_an_dFIjfhJZoavF99JtLW8&s=JnQ3kMAqz89qZlDcDE3cpigN95O8cqME-0U6Qb_Mwj0&e=>) (3/23, Stieg) “If working from home during the COVID-19 pandemic has you feeling cabin fever, isolation or boredom, NASA has some advice. On Sunday, NASA astronaut Anne McClain shared a Twitter thread of expert skills that astronauts implement when working and living in confinement to ensure that they stay happy, productive and successful. The tips are often referred to as ‘expeditionary behaviors,’ or ‘EB,’ and they can be applied to any situation that involves working remotely as a group, according to a blog on NASA’s website.”

#### Retired Astronaut Who Spent 665 Days In Space Gives Advice On Pandemic Isolation: Remember “Bigger Purpose”

CBS News <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020032402nasa-26r-3Demail-2D0242-26l-3D015-2D05b-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=tuWFDnSEqUdfzg8u\\_WjS\\_an\\_dFIjfhJZoavF99JtLW8&s=vRGp-tJfe9B2N2fOuy1CPr7FrXaAE48TPXg6Dz79\\_TA&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020032402nasa-26r-3Demail-2D0242-26l-3D015-2D05b-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=tuWFDnSEqUdfzg8u_WjS_an_dFIjfhJZoavF99JtLW8&s=vRGp-tJfe9B2N2fOuy1CPr7FrXaAE48TPXg6Dz79_TA&e=>) (3/23, Brown) “Retired NASA astronaut Peggy Whitson, who spent 665 days on the International Space Station, advised people feeling isolated while staying home during the coronavirus pandemic to remember the ‘bigger purpose’ everyone shares. By social distancing and quarantining, people are ‘saving lives,’ she said. Whitson said NASA trains astronauts on the skills needed to interact with the same people 24/7, which could be helpful for people staying in now.”

#### Astronaut Gives Advice On Handling Isolation During Coronavirus Crisis

CBS News <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020032402nasa-26r-3Demail-2D0242-26l-3D016-2D0d4-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=tuWFDnSEqUdfzg8u\\_WjS\\_an\\_dFIjfhJZoavF99JtLW8&s=cAkKY3Tb17sbZluzkllprl3WqMBXk80Ao8-QcxhGFNY&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020032402nasa-26r-3Demail-2D0242-26l-3D016-2D0d4-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=tuWFDnSEqUdfzg8u_WjS_an_dFIjfhJZoavF99JtLW8&s=cAkKY3Tb17sbZluzkllprl3WqMBXk80Ao8-QcxhGFNY&e=>) (3/23) “NASA’s Peggy Whitson has spent more time aboard the International Space Station than any other American. She’s spent 665 days in space, including a stretch lasting longer than nine months, earning her the nickname the ‘Space Ninja.’ Whitson joins ‘CBS This Morning’ to give tips on handling isolation during the coronavirus pandemic.”

#### NASA Astronauts Give Tips On Handling Isolation Amid Coronavirus Outbreak

Florida Today <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020032402nasa-26r-3Demail-2D0242-26l-3D017-2Daf9-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=tuWFDnSEqUdfzg8u\\_WjS\\_an\\_dFIjfhJZoavF99JtLW8&s=HQv7HT4iMrFzB8Bri\\_JusvwL1Z\\_HH8FO0QYCiT7LoJY&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020032402nasa-26r-3Demail-2D0242-26l-3D017-2Daf9-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=tuWFDnSEqUdfzg8u_WjS_an_dFIjfhJZoavF99JtLW8&s=HQv7HT4iMrFzB8Bri_JusvwL1Z_HH8FO0QYCiT7LoJY&e=>) (3/23, Jaramillo) “Need some tips on how to survive — and thrive — while you are physically cut off from the rest of the world? Who better to turn to than astronauts? Astronauts, who venture into the

dark abyss of space, know a thing or two about isolation, especially those who spend months aboard the International Space Station. 'COVID-19 gives us a very higher purpose, much like being in space does,' retired NASA astronaut Peggy Whitson said on CBS This Morning on Monday."

#### Astronauts, The True Experts Of Isolation, Give Tips For COVID-19 Social Distancing

Houston Chronicle <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020032402nasa-26r-3Demail-2D0242-26l-3D018-2Df1b-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=tuWFDnSEqUdfzg8u\\_WjS\\_an\\_dFlfjhJZoavF99JtLW8&s=EDDkT\\_89TxKhY7PKIbTqJDr2GAR\\_SFdVYjbNWfVhFkA&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020032402nasa-26r-3Demail-2D0242-26l-3D018-2Df1b-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=tuWFDnSEqUdfzg8u_WjS_an_dFlfjhJZoavF99JtLW8&s=EDDkT_89TxKhY7PKIbTqJDr2GAR_SFdVYjbNWfVhFkA&e=>) (3/23, Leinfelder) "Feeling cooped up? At least you can walk the dog while social distancing. Imagine floating more than 200 miles above Earth with just a handful of companions for months at a time. There's no stepping outside for fresh air. Astronauts on the International Space Station are the true masters of social distancing. And they know microgravity can affect more than bone and muscle mass. Upon returning from 328 days in space, Astronaut Christina Koch recently discussed being away from family and friends and how she focused on 'the unique aspects of my life that one day I would just wish I could have back' instead of what she was missing at home."

#### NASA Gives 5 Tips To Survive Social Distancing Through Techniques Developed In Space

Tech Times <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020032402nasa-26r-3Demail-2D0242-26l-3D019-2D6c9-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=tuWFDnSEqUdfzg8u\\_WjS\\_an\\_dFlfjhJZoavF99JtLW8&s=uR8cICd6JG9CrIKYIdeOPAATxsm3PxbxyIOCeJxMRws&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020032402nasa-26r-3Demail-2D0242-26l-3D019-2D6c9-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=tuWFDnSEqUdfzg8u_WjS_an_dFlfjhJZoavF99JtLW8&s=uR8cICd6JG9CrIKYIdeOPAATxsm3PxbxyIOCeJxMRws&e=>) (3/23) "Now that everyone is urged to stay at home and only leave the house when absolutely necessary, the boredom and isolation felt by NASA come close to what the masses are starting to feel amidst this pandemic. How do NASA astronauts deal with this? A thread has been published on Twitter quite recently by NASA astronaut Anne McClain which included a list of expert skills that astronauts implement when they are working and living in extreme confinement to make sure that they remain happy, productive, and most of all, successful."

#### Al Worden: Apollo 15 Astronaut And First Person To Spacewalk In Deep Space

SPACE <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020032402nasa-26r-3Demail-2D0242-26l-3D01a-2D7c9-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=tuWFDnSEqUdfzg8u\\_WjS\\_an\\_dFlfjhJZoavF99JtLW8&s=Ce7YcCw7Brv7MxgOd4s2BZw\\_ok5fmc6YQGKWVv7Z1GQ&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020032402nasa-26r-3Demail-2D0242-26l-3D01a-2D7c9-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=tuWFDnSEqUdfzg8u_WjS_an_dFlfjhJZoavF99JtLW8&s=Ce7YcCw7Brv7MxgOd4s2BZw_ok5fmc6YQGKWVv7Z1GQ&e=>) (3/23, Howell, Pearlman) "Al Worden was a NASA astronaut who flew above the moon with Apollo 15, then performed the first-ever spacewalk in deep space on his return trip from the moon in 1971. Worden was part of NASA's fifth class of astronauts, selected in 1966. His first and only trip to space was as the command module pilot for Apollo 15, the fourth mission to land humans on the moon."

#### Astronaut About To Escape From Earth Into Space: "Good Luck To Everyone"

Ars Technica <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020032402nasa-26r-3Demail-2D0242-26l-3D01b-2D1c9-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=tuWFDnSEqUdfzg8u\\_WjS\\_an\\_dFlfjhJZoavF99JtLW8&s=Ce7YcCw7Brv7MxgOd4s2BZw\\_ok5fmc6YQGKWVv7Z1GQ&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020032402nasa-26r-3Demail-2D0242-26l-3D01b-2D1c9-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=tuWFDnSEqUdfzg8u_WjS_an_dFlfjhJZoavF99JtLW8&s=Ce7YcCw7Brv7MxgOd4s2BZw_ok5fmc6YQGKWVv7Z1GQ&e=>)

mHkTTiYCEf5ROyus&m=tuWFDnSEqUdfzg8u\_WjS\_an\_dFlfjhJZoavF99JtLW8&s=mcO6kYotEQ7A4sTGN6Yi\_O2KqzDLG-T8UxSb-do-j98&e=> (3/23, Berger) "While much of the world's business has ground to a halt amid the COVID-19 pandemic, spaceflight has been moving along in fits and starts. Most spaceports remain active, and in the United States, launch companies have been classified as 'essential' businesses, meaning they are continuing operations, at least to some extent. And at NASA, they're still flying to the International Space Station. Much of the space agency, including Johnson Space Center, is presently at Stage 3 of NASA's pandemic response plan."

#### NASA Coronavirus Tips: How Astronauts Survive In Isolation

Daily Express (UK) <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020032402nasa-26r-3Demail-2D0242-26l-3D01c-2D4b0-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=tuWFDnSEqUdfzg8u\\_WjS\\_an\\_dFlfjhJZoavF99JtLW8&s=OT3BLIXxUdk25Y-InTcrt3-XEdqBv7pBAilYo4z7pA&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020032402nasa-26r-3Demail-2D0242-26l-3D01c-2D4b0-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=tuWFDnSEqUdfzg8u_WjS_an_dFlfjhJZoavF99JtLW8&s=OT3BLIXxUdk25Y-InTcrt3-XEdqBv7pBAilYo4z7pA&e=>)> (3/23, Martin) "Much of the world has now been placed under strict isolation rules due to the COVID-19 virus, and NASA has shared its tips on how astronauts can survive in the loneliness of space. NASA astronauts have to undergo extreme psychological tests in order to survive on the International Space Station (ISS) and on journeys to celestial bodies such as the Moon."

#### The Space Review: Space In Uncertain Times

Space Review <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020032402nasa-26r-3Demail-2D0242-26l-3D01d-2D9a5-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=tuWFDnSEqUdfzg8u\\_WjS\\_an\\_dFlfjhJZoavF99JtLW8&s=fi6ZNIk2j3Z7VEByNpSM0QG3WC h8u0G0wdvY7qOEPfo&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020032402nasa-26r-3Demail-2D0242-26l-3D01d-2D9a5-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=tuWFDnSEqUdfzg8u_WjS_an_dFlfjhJZoavF99JtLW8&s=fi6ZNIk2j3Z7VEByNpSM0QG3WC h8u0G0wdvY7qOEPfo&e=>)> (3/23, Foust) "Last month, even as the coronavirus epidemic was ravaging China and making inroads in other nations, the space industry's concerns were elsewhere. There were debates about a NASA authorization bill in the House that would reshape NASA's Artemis program even as the agency sought more money for it, the ongoing review into the flawed test flight of Boeing's CST-100 Starliner commercial crew vehicle, renewed concerns about orbital debris after a close call between two defunct satellites, and discussions about the viability and sustainability of satellite constellations like OneWeb and SpaceX's Starlink as both moved into full-scale deployment."

#### Moon to Mars

#### Boeing To Shut Down All Puget Sound Operations For Two Weeks After Employee Who Had Coronavirus Dies

Washington Post <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020032402nasa-26r-3Demail-2D0242-26l-3D01e-2D897-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=tuWFDnSEqUdfzg8u\\_WjS\\_an\\_dFlfjhJZoavF99JtLW8&s=tPX8RIhZhhHOscYf4-9j2ORd8NySHshqontQQ4bqmu8&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020032402nasa-26r-3Demail-2D0242-26l-3D01e-2D897-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=tuWFDnSEqUdfzg8u_WjS_an_dFlfjhJZoavF99JtLW8&s=tPX8RIhZhhHOscYf4-9j2ORd8NySHshqontQQ4bqmu8&e=>)> (3/23, Gregg, Davenport) "Boeing will halt all production activities in the Puget Sound region of Washington state, an early national hotspot for coronavirus, for two weeks following the reported death of an employee. ... Its facilities in Mississippi and Louisiana, where Boeing has been working on NASA's Space Launch System rocket, are temporarily closed due to direction from the space agency."

#### The Coronavirus Pandemic Argues For More Funding For NASA's Artemis Program, Not Less

The Hill <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-)

3D2020032402nasa-26r-3Demail-2D0242-26l-3D01f-2D70a-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=tuWFDnSEqUdfzg8u\_WjS\_an\_dFIjfhJZoavF99JtLW8&s=IfiGf-NF-ACJ79FNoJiKa2y47IL1C6JW6RQryJn0zY&e=> (3/23, Whittington) “Recently, space journalist Eric Berger posed an interesting question on Twitter. ‘Will be interesting to see how NASA gins up billions more for Artemis in the midst of a deep recession, in an election year, with the only near-term goal of the program a mad-dash to the lunar surface by 2024, which everyone agrees is technically very unlikely, while teleworking.’ Berger asks a serious question. Imagine that next fall the United States is in a recession brought on by the coronavirus.”

#### NASA Completes First Covid-19 Impact Assessment On Missions

Aerospace Technology <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020032402nasa-26r-3Demail-2D0242-26l-3D020-2D432-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=tuWFDnSEqUdfzg8u\\_WjS\\_an\\_dFIjfhJZoavF99JtLW8&s=5QS\\_fOvoQL2kt3mJSGfv8mni-a08o5A6PrziR8uTu0l&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020032402nasa-26r-3Demail-2D0242-26l-3D020-2D432-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=tuWFDnSEqUdfzg8u_WjS_an_dFIjfhJZoavF99JtLW8&s=5QS_fOvoQL2kt3mJSGfv8mni-a08o5A6PrziR8uTu0l&e=>) (3/23) “Nasa has completed the first coronavirus (Covid-19) impact assessment of work underway across all missions, projects and programmes. The move is part of the agency’s plan to protect and preserve the health and safety of its workforce amid the pandemic.”

#### NASA Moon Mission Postponed: NASA Suspends Work On Mission Due To Coronavirus Outbreak

Daily Express (UK) <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020032402nasa-26r-3Demail-2D0242-26l-3D021-2Da3a-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=tuWFDnSEqUdfzg8u\\_WjS\\_an\\_dFIjfhJZoavF99JtLW8&s=5jwGPprW89cpgyEiojgNPcBoWeDa7etDSDoNQSrzo5E&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020032402nasa-26r-3Demail-2D0242-26l-3D021-2Da3a-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=tuWFDnSEqUdfzg8u_WjS_an_dFIjfhJZoavF99JtLW8&s=5jwGPprW89cpgyEiojgNPcBoWeDa7etDSDoNQSrzo5E&e=>) (3/23, Martin) “NASA had plans to return humans to the Moon in 2024 for the first time since 1972, where it was to establish the lunar base. The mission would see astronauts study the lunar surface in close detail, but also to use the Moon as a checkpoint between Earth and Mars – the space agency’s ultimate goal for humans.”

#### Another Incredible Picture Of Mars, This Time From A Region Just Outside Valles Marineris

Universe Today <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020032402nasa-26r-3Demail-2D0242-26l-3D022-2D087-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=tuWFDnSEqUdfzg8u\\_WjS\\_an\\_dFIjfhJZoavF99JtLW8&s=fi2-Nx2vYxPhTIkQBRuGIpi6lt7OjihkM2v2Tx4CJw&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020032402nasa-26r-3Demail-2D0242-26l-3D022-2D087-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=tuWFDnSEqUdfzg8u_WjS_an_dFIjfhJZoavF99JtLW8&s=fi2-Nx2vYxPhTIkQBRuGIpi6lt7OjihkM2v2Tx4CJw&e=>) (3/23, Williams) “The Mars Reconnaissance Orbiter (MRO) delivers once again! Using its advanced imaging instrument, the High Resolution Imaging Experiment (HiRISE) camera, the orbiter captured a breathtaking image (shown below) of the plains north of Juventae Chasma. This region constitutes the southwestern part of Valles Marineris, the gigantic canyon system that runs along the Martian equator.”

#### NASA Curiosity Rover Took A Gorgeous Mars Selfie To Mark A Daring Climb

CNET News <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020032402nasa-26r-3Demail-2D0242-26l-3D023-2Def0-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=tuWFDnSEqUdfzg8u\\_WjS\\_an\\_dFIjfhJZoavF99JtLW8&s=fi2-Nx2vYxPhTIkQBRuGIpi6lt7OjihkM2v2Tx4CJw&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020032402nasa-26r-3Demail-2D0242-26l-3D023-2Def0-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=tuWFDnSEqUdfzg8u_WjS_an_dFIjfhJZoavF99JtLW8&s=fi2-Nx2vYxPhTIkQBRuGIpi6lt7OjihkM2v2Tx4CJw&e=>)

8-mHkTTiYCEf5ROyus&m=tuWFDnSEqUdfzg8u\_WjS\_an\_dFlfjhJZoavF99JtLW8&s=inQ0F85A8JXz1K-19le8Br6o9UozM7gj5QAFUNiGQc4&e=> (3/23, Kooser) "NASA's Curiosity rover is on top of the world. That world happens to be Mars, and "the top" is a perch on a sloping rock layer called Greenheugh Pediment. Before the rover attempted the daring climb up the pediment, it took a moment to mark the occasion with a new selfie snapped on Feb. 26."

#### NASA Mulls Best Platforms To Close Mars Capability Gaps

Aviation Week <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020032402nasa-26r-3Demail-2D0242-26I-3D024-2D76f-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=tuWFDnSEqUdfzg8u\\_WjS\\_an\\_dFlfjhJZoavF99JtLW8&s=xUBtfWq3-fHUAihwfsfApEhUf6MLzWPHhhXqntaQW8l&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020032402nasa-26r-3Demail-2D0242-26I-3D024-2D76f-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=tuWFDnSEqUdfzg8u_WjS_an_dFlfjhJZoavF99JtLW8&s=xUBtfWq3-fHUAihwfsfApEhUf6MLzWPHhhXqntaQW8l&e=>) (3/23) "Looking to close dozens of capability gaps for reaching Mars with human explorers, NASA expects to rely on activities aboard the International Space Station and future lunar-orbiting Gateway, as well as terrestrial work in locations that can act as analogs for the red planet."

#### NASA News: Curiosity Rover Shows Us How To Self Isolate With Lonely Pic From Mars

Daily Express (UK) <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020032402nasa-26r-3Demail-2D0242-26I-3D025-2D572-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=tuWFDnSEqUdfzg8u\\_WjS\\_an\\_dFlfjhJZoavF99JtLW8&s=pNLKWW898FqGAtRnopT6XlaQcR37q1NORM9y3Qz3o7k&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020032402nasa-26r-3Demail-2D0242-26I-3D025-2D572-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=tuWFDnSEqUdfzg8u_WjS_an_dFlfjhJZoavF99JtLW8&s=pNLKWW898FqGAtRnopT6XlaQcR37q1NORM9y3Qz3o7k&e=>) (3/23, Martin) "Most countries, particularly those in Europe which has now become the epicentre of the COVID-19 outbreak, have enforced strict isolation and social distancing guidelines to beat the spread of coronavirus. And while many of us struggle to come to grips with our new, hopefully temporary, lifestyle, NASA's Curiosity Rover is facing no such difficulties."

#### Coronavirus Will Delay Some NASA Projects, Agency Announces

BGR <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020032402nasa-26r-3Demail-2D0242-26I-3D026-2Dbf3-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=tuWFDnSEqUdfzg8u\\_WjS\\_an\\_dFlfjhJZoavF99JtLW8&s=slivDhXhd02f6G-650e0Pguz9p0n5BVUsTKSz5ILW--c&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020032402nasa-26r-3Demail-2D0242-26I-3D026-2Dbf3-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=tuWFDnSEqUdfzg8u_WjS_an_dFlfjhJZoavF99JtLW8&s=slivDhXhd02f6G-650e0Pguz9p0n5BVUsTKSz5ILW--c&e=>) (3/23, Wehner) "Coronavirus will likely delay several NASA projects, with the Mars 2020 still on schedule but facing the possibility of a significant delay. The James Webb Space Telescope will almost certainly be pushed back even further than it already was, and NASA's Artemis missions could see delays and perhaps even push the return of humans to the Moon past 2024."

#### As Coronavirus Pandemic Continues, NASA Will 'Assess The Potential Impact On Our Missions'

Fox News <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020032402nasa-26r-3Demail-2D0242-26I-3D027-2D9ec-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=tuWFDnSEqUdfzg8u\\_WjS\\_an\\_dFlfjhJZoavF99JtLW8&s=EyS5FcEv7t7LxpolqC2ozz7wHH\\_z1LiNpZr\\_w-\\_U\\_Jc&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020032402nasa-26r-3Demail-2D0242-26I-3D027-2D9ec-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=tuWFDnSEqUdfzg8u_WjS_an_dFlfjhJZoavF99JtLW8&s=EyS5FcEv7t7LxpolqC2ozz7wHH_z1LiNpZr_w-_U_Jc&e=>) (3/23, Ciaccia) "As the coronavirus pandemic continues to wreak havoc on the globe, NASA Administrator Jim Bridenstine told Fox News the space agency will "continue to assess the potential impact on our missions as the situation unfolds." In an email to Fox News, Bridenstine said the agency's main priority is the safety of

its workers – while noting the benefits of space exploration to the U.S. economy.”

#### Perseverance Still On Track For July Launch

KHOU-TV Houston <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020032402nasa-26r-3Demail-2D0242-26l-3D028-2De34-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=tuWFDnSEqUdfzg8u\\_WjS\\_an\\_dFlfjhJZoavF99JtLW8&s=qxjwIMRVJVxUiaKon7sT8lgw2dOAhX9qfEaw0e-\\_gkw&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020032402nasa-26r-3Demail-2D0242-26l-3D028-2De34-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=tuWFDnSEqUdfzg8u_WjS_an_dFlfjhJZoavF99JtLW8&s=qxjwIMRVJVxUiaKon7sT8lgw2dOAhX9qfEaw0e-_gkw&e=>)> (3/23) “Good news for NASA, the Mars rover, Perseverance, is living up to its name amidst the COVID-19 outbreak. The rover is still on track to launch in July.”

#### Orion Spacecraft Headed To Florida

WKYC-TV Cleveland <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020032402nasa-26r-3Demail-2D0242-26l-3D029-2D0ee-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=tuWFDnSEqUdfzg8u\\_WjS\\_an\\_dFlfjhJZoavF99JtLW8&s=t6Zyyf9bySpj7siwTJ1RPonalfXo6rMVsrJnyapPr2c&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020032402nasa-26r-3Demail-2D0242-26l-3D029-2D0ee-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=tuWFDnSEqUdfzg8u_WjS_an_dFlfjhJZoavF99JtLW8&s=t6Zyyf9bySpj7siwTJ1RPonalfXo6rMVsrJnyapPr2c&e=>)> (3/23) “NASA’s newest spacecraft, the Orion, heads to Florida where it will launch later this year.”

#### Solar System and Beyond

##### Look To The Sky! NASA Finds Six Asteroids Approaching Earth This Week!

Tech Times <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020032402nasa-26r-3Demail-2D0242-26l-3D02a-2Df61-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=tuWFDnSEqUdfzg8u\\_WjS\\_an\\_dFlfjhJZoavF99JtLW8&s=F8SDKitY3DZb2L5i2zBUCHpXn0NizdktSqvnaG3OdYM&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020032402nasa-26r-3Demail-2D0242-26l-3D02a-2Df61-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=tuWFDnSEqUdfzg8u_WjS_an_dFlfjhJZoavF99JtLW8&s=F8SDKitY3DZb2L5i2zBUCHpXn0NizdktSqvnaG3OdYM&e=>)> (3/23, Tingson) “NASA’s Center for Near-Earth Object Studies or CNEO has confirmed that there are indeed six new asteroids approaching the Earth this week. According to CNEO, the first asteroid that will be close enough to Earth’s orbit is the smallest of the six asteroids and is called the 2020 FF, which has an estimated diameter of 85 feet and travels at a speed of 13,000 miles per hour.”

##### NASA Explains Why Weird, Wheel-Like Blip In Space Images Is Not A UFO

CNET News <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020032402nasa-26r-3Demail-2D0242-26l-3D02b-2D6d6-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=tuWFDnSEqUdfzg8u\\_WjS\\_an\\_dFlfjhJZoavF99JtLW8&s=pzUACXjykpqSywuFCmlsF1czMarSNfOzrBE06RdX6fs&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020032402nasa-26r-3Demail-2D0242-26l-3D02b-2D6d6-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=tuWFDnSEqUdfzg8u_WjS_an_dFlfjhJZoavF99JtLW8&s=pzUACXjykpqSywuFCmlsF1czMarSNfOzrBE06RdX6fs&e=>)> (3/23, Kooser) “UFO aficionados recently got excited about a strange shape that appeared in images captured by NASA’s Stereo mission. Was it aliens? Nope. It was a reflection. Stereo, short for Solar Terrestrial Relations Observatory, launched as twin space observatories in 2006 on a mission to study the sun and coronal mass ejections. One of the spacecraft is still in operation. Its HI2 telescope captured a nifty view that included Venus and Earth in late February. That’s when the mysterious wheel-like shape appeared.”



## NASA Is About To Grab An Asteroid Sample And Bring It Home

Air & Space Smithsonian Magazine <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020032402nasa-26r-3Demail-2D0242-26l-3D02c-2D6e8-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=tuWFDnSEqUdfzg8u\\_WjS\\_an\\_dFIjfhJZoavF99JtLW8&s=KVd0gXctE-VADkYF17IluEGNKCYdBnavccVblEvP2Sc&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020032402nasa-26r-3Demail-2D0242-26l-3D02c-2D6e8-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=tuWFDnSEqUdfzg8u_WjS_an_dFIjfhJZoavF99JtLW8&s=KVd0gXctE-VADkYF17IluEGNKCYdBnavccVblEvP2Sc&e=>) (3/23, Boyle) “A typical spacecraft, when it arrives someplace in our solar system, comes in hot. Screaming through the void at thousands of miles per hour, an orbiter or lander begins slowing down after rocket thrusters fire, parachutes and sky-cranes unfurl, and landing legs and airbags deploy. Despite meticulous planning, there is little elegance in all of this. ... None of this, however, will be true for Osiris-Rex.”

## Bennu In Unprecedented Detail

Cosmos Magazine (AUS) <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020032402nasa-26r-3Demail-2D0242-26l-3D02d-2D2cc-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=tuWFDnSEqUdfzg8u\\_WjS\\_an\\_dFIjfhJZoavF99JtLW8&s=AMVyLg3WmzlkOOS27WnXh0GN0912v3ZJbRg2hBlIq4A&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020032402nasa-26r-3Demail-2D0242-26l-3D02d-2D2cc-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=tuWFDnSEqUdfzg8u_WjS_an_dFIjfhJZoavF99JtLW8&s=AMVyLg3WmzlkOOS27WnXh0GN0912v3ZJbRg2hBlIq4A&e=>) (3/24) “This global map of the asteroid Bennu is a mosaic of 2155 PolyCam images stitched together and corrected. They were collected by NASA’s OSIRIS-REx spacecraft between 7 March and 19 April, 2019, at distances ranging from 3.1 to five kilometres above the surface.”

## NASA’s New View Of Asteroid Bennu Transports Us Far Away From Our Troubles

Gizmodo <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020032402nasa-26r-3Demail-2D0242-26l-3D02e-2D9cf-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=tuWFDnSEqUdfzg8u\\_WjS\\_an\\_dFIjfhJZoavF99JtLW8&s=Kbh9izTgp5b7iv2JrBzwe0E7a\\_HEG3hcRkKI7XM9dxE&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020032402nasa-26r-3Demail-2D0242-26l-3D02e-2D9cf-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=tuWFDnSEqUdfzg8u_WjS_an_dFIjfhJZoavF99JtLW8&s=Kbh9izTgp5b7iv2JrBzwe0E7a_HEG3hcRkKI7XM9dxE&e=>) (3/23, Dvorsky) “To prepare for OSIRIS-REx’s pending touchdown onto the surface of Bennu, NASA used the spacecraft to photograph every nook and cranny of the weirdly shaped asteroid. The purpose of this exercise was to catalog potentially hazardous geological features, but a side benefit is that we have a gorgeous new view of the asteroid’s tortured surface.”

## NASA Chooses 4 New Astronomy Space Missions For Additional Study

Universe Today <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020032402nasa-26r-3Demail-2D0242-26l-3D02f-2Dcd5-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=tuWFDnSEqUdfzg8u\\_WjS\\_an\\_dFIjfhJZoavF99JtLW8&s=74xf\\_G3Us5UVdlbaZXIz6x5rn-YHSFhUU0ORutiXCaQ&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020032402nasa-26r-3Demail-2D0242-26l-3D02f-2Dcd5-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=tuWFDnSEqUdfzg8u_WjS_an_dFIjfhJZoavF99JtLW8&s=74xf_G3Us5UVdlbaZXIz6x5rn-YHSFhUU0ORutiXCaQ&e=>) (3/23, Williams) “Since 1958, the NASA Explorer Program has conducted low-cost missions that were deemed relevant to the goals of the Science Mission Directorate (SMD), particularly where the study of our Sun and the deeper cosmic mysteries are concerned. Recently, the Explorer Program selected four missions that they considered to be well-suited to these goals, two of which will be selected for launch in the coming years.”

## Stunning NASA Image Shows Center Of Milky Way

Fox News <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020032402nasa-26r-3Demail-2D0242-26l-3D030-2De9e-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=tuWFDnSEqUdfzg8u\\_WjS\\_an\\_dFlfjhJZoavF99JtLW8&s=2WQvHO3r4F\\_UGB8MdEm-Di2TZKC5ReMWigR8t3BOMxA&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020032402nasa-26r-3Demail-2D0242-26l-3D030-2De9e-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=tuWFDnSEqUdfzg8u_WjS_an_dFlfjhJZoavF99JtLW8&s=2WQvHO3r4F_UGB8MdEm-Di2TZKC5ReMWigR8t3BOMxA&e=>) (3/23, Carbone) "NASA on Monday released a gorgeous image of the center of our galaxy. The central region of our galaxy, the Milky Way, contains an exotic collection of objects, according to the space agency."

#### Birth Of Massive Stars And Quasar Tsunamis Among NASA's Hubble Space Telescopes Latest Finds!

Tech Times <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020032402nasa-26r-3Demail-2D0242-26l-3D031-2Df4e-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=tuWFDnSEqUdfzg8u\\_WjS\\_an\\_dFlfjhJZoavF99JtLW8&s=DvKBoPEV0fYIIGBB3UfeF3VKcn02\\_p17gnhWEPTbvKw&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020032402nasa-26r-3Demail-2D0242-26l-3D031-2Df4e-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=tuWFDnSEqUdfzg8u_WjS_an_dFlfjhJZoavF99JtLW8&s=DvKBoPEV0fYIIGBB3UfeF3VKcn02_p17gnhWEPTbvKw&e=>) (3/23, Tingson) "NASA and ESA's Hubble Space Telescope has yet again captured two amazing events from space: the birth of massive stars and an image of quasar tsunamis that are 'ripping through galaxies.' The first image is that of LHA 120-N 150--a rather uninspiring name for a spectacular region in the outskirts of the Tarantula Nebula, the biggest known stellar nursery in the local universe, which is located at over 160,000 light-years away from a dwarf galaxy that orbits us, known as the Large Magellanic Cloud."

#### Astronomers Test String Theory Using NASA's Chandra X-ray Space Telescope

SPACE <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020032402nasa-26r-3Demail-2D0242-26l-3D032-2Dd32-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=tuWFDnSEqUdfzg8u\\_WjS\\_an\\_dFlfjhJZoavF99JtLW8&s=\\_VJBbv1rN-X4VJqykA5qBsYsQc3F\\_DglBCE2Q2PAi\\_g&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020032402nasa-26r-3Demail-2D0242-26l-3D032-2Dd32-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=tuWFDnSEqUdfzg8u_WjS_an_dFlfjhJZoavF99JtLW8&s=_VJBbv1rN-X4VJqykA5qBsYsQc3F_DglBCE2Q2PAi_g&e=>) (3/23, Mathewson) "Astronomers have probed the Perseus galaxy cluster in search of an (so far) undetected particle that would help to support string theory. String theory is the idea that all known forces, particles and interactions can be connected through a single framework to understand the physical universe. A team of astronomers using NASA's Chandra X-ray Observatory studied galaxy clusters — the largest structures in the universe held together by gravity — for signs of an ultra-low-mass particle called an axion, which many models of string theory predict should exist."

#### Astronomers Use Hubble To Learn More About The Birth Of Massive Stars

Astronomy Now (UK) <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020032402nasa-26r-3Demail-2D0242-26l-3D033-2D011-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=tuWFDnSEqUdfzg8u\\_WjS\\_an\\_dFlfjhJZoavF99JtLW8&s=DhYPKykYUBQP4dG6NPe5CD46DpZxtGDis3L8Y\\_5PgU&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020032402nasa-26r-3Demail-2D0242-26l-3D033-2D011-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=tuWFDnSEqUdfzg8u_WjS_an_dFlfjhJZoavF99JtLW8&s=DhYPKykYUBQP4dG6NPe5CD46DpZxtGDis3L8Y_5PgU&e=>) (3/23) "The vast Tarantula Nebula in the Large Magellanic Cloud is the largest stellar nursery in the local universe and as such, an ideal laboratory for studying the birth and evolution of massive stars. This region on the outskirts of the Tarantula, known as LHA 120-N 150, features an exceptionally high concentration of massive stars. Theory suggests such stars should form within star clusters, but about 10 percent of those found in LHA 120-N 150 seemingly formed in isolation. Astronomers are using the Hubble Space Telescope to better understand whether the isolated stars truly formed alone or simply moved beyond the clusters in which they were born."

#### Space Tech

## NASA Halts Work On James Webb Space Telescope

NBC News <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020032402nasa-26r-3Demail-2D0242-26l-3D034-2Daba-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=tuWFDnSEqUdfzg8u\\_WjS\\_an\\_dFlfjhJZoavF99JtLW8&s=MjdsNY11xuhwcq9qWy666aJr4\\_xAJCutGPfYxDFSzDE&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020032402nasa-26r-3Demail-2D0242-26l-3D034-2Daba-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=tuWFDnSEqUdfzg8u_WjS_an_dFlfjhJZoavF99JtLW8&s=MjdsNY11xuhwcq9qWy666aJr4_xAJCutGPfYxDFSzDE&e=>) (3/23, Chow) "The United Kingdom went into lockdown Monday as British Prime Minister Boris Johnson tried to stem the spread of coronavirus, which has infected more than 5,000 people and killed hundreds in his country. More American states did the same, too. ... NASA is suspending work on its next-generation James Webb Space Telescope as part of an agency-wide effort to prioritize essential operations while maintaining the safety of workers across all centers. Testing and integration work on the Webb telescope in California has been put on hold to ensure the safety of the workforce, NASA officials said in a statement released Friday."

## Various

### Employee At Kennedy Space Center Tests Positive For Coronavirus

Florida Today <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020032402nasa-26r-3Demail-2D0242-26l-3D035-2Dbfd-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=tuWFDnSEqUdfzg8u\\_WjS\\_an\\_dFlfjhJZoavF99JtLW8&s=iqPUNj6Hg2hbU\\_uBn-xshJiz7-Ebsm0k0FFfdXn8zQI&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020032402nasa-26r-3Demail-2D0242-26l-3D035-2Dbfd-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=tuWFDnSEqUdfzg8u_WjS_an_dFlfjhJZoavF99JtLW8&s=iqPUNj6Hg2hbU_uBn-xshJiz7-Ebsm0k0FFfdXn8zQI&e=>) (3/23, Kelly) "Kennedy Space Center's first positive coronavirus case was confirmed Monday, though officials believe circumstances surrounding the exposure likely mean the employee was not on-center when contagious. Tracy Young, a spokesperson for KSC, said employees were notified Sunday that a KSC team member tested positive for COVID-19, the disease caused by the coronavirus."

### KSC Logs First COVID-19 Case, But Dodges Closure

Aviation Week <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020032402nasa-26r-3Demail-2D0242-26l-3D036-2Dd74-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=tuWFDnSEqUdfzg8u\\_WjS\\_an\\_dFlfjhJZoavF99JtLW8&s=mD\\_1oAlgvpBS7afncVtOc0hSv9lOp1phrY08mGh-IT4&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020032402nasa-26r-3Demail-2D0242-26l-3D036-2Dd74-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=tuWFDnSEqUdfzg8u_WjS_an_dFlfjhJZoavF99JtLW8&s=mD_1oAlgvpBS7afncVtOc0hSv9lOp1phrY08mGh-IT4&e=>) (3/23) "NASA's Kennedy Space Center in Florida remained open on March 23 to personnel working on Mars 2020, Commercial Crew and Cargo and other mission-critical programs despite its first confirmed case of the coronavirus COVID-19."

### NASA Employee At Kennedy Space Center Tests Positive For Coronavirus: Report

SPACE <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020032402nasa-26r-3Demail-2D0242-26l-3D037-2D475-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=tuWFDnSEqUdfzg8u\\_WjS\\_an\\_dFlfjhJZoavF99JtLW8&s=osJRdv2P8dPm\\_W7MkvoTWHd8JERQrTZ3biz6sJW3YC0&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020032402nasa-26r-3Demail-2D0242-26l-3D037-2D475-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=tuWFDnSEqUdfzg8u_WjS_an_dFlfjhJZoavF99JtLW8&s=osJRdv2P8dPm_W7MkvoTWHd8JERQrTZ3biz6sJW3YC0&e=>) (3/23, Gohd) "The first positive case of coronavirus at NASA's Kennedy Space Center (KSC) in Florida was confirmed today (March 23). As reported by Emre Kelly for Florida Today, Tracy Young, a NASA spokesperson at KSC, the agency notified employees on Sunday (March 22) that a KSC employee tested positive for the new coronavirus, SARS-CoV-2, which causes the disease COVID-19."

## NASA Offers Home Rocket-Building For Kids

Arizona Republic <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020032402nasa-26r-3Demail-2D0242-26l-3D038-2Dd54-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=tuWFDnSEqUdfzg8u\\_WjS\\_an\\_dFlfjhJZoavF99JtLW8&s=U4otoUMdK7WLX39o74WY-MbhjFpcn-4QgZQgOjj9\\_zU&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020032402nasa-26r-3Demail-2D0242-26l-3D038-2Dd54-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=tuWFDnSEqUdfzg8u_WjS_an_dFlfjhJZoavF99JtLW8&s=U4otoUMdK7WLX39o74WY-MbhjFpcn-4QgZQgOjj9_zU&e=>) (3/23) “With schools closed, NASA’s Kennedy Space Center is introducing awesome home lessons in space and rocket science.”

Other

## Remember When Japan Blasted An Asteroid? Here’s What We Learned

New York Times <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020032402nasa-26r-3Demail-2D0242-26l-3D039-2D8a4-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=tuWFDnSEqUdfzg8u\\_WjS\\_an\\_dFlfjhJZoavF99JtLW8&s=DQgsFI-UCmBmyTBFAQ8HphhbT6ryzIZAGIMYT0glQ&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020032402nasa-26r-3Demail-2D0242-26l-3D039-2D8a4-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=tuWFDnSEqUdfzg8u_WjS_an_dFlfjhJZoavF99JtLW8&s=DQgsFI-UCmBmyTBFAQ8HphhbT6ryzIZAGIMYT0glQ&e=>) (3/23, Chang) “In April last year, a Japanese spacecraft launched a strike from above on an asteroid. Japan’s space agency was not declaring war. The bombardment was part of the work of Hayabusa2, a robotic space probe that is gathering hints about the origins of the solar system by studying the rocky object, Ryugu. It is a type of asteroid that is full of carbon molecules known as organics, including possibly amino acids, the building blocks of proteins.”

## SpaceX Gets FCC License For 1 Million Satellite-broadband User Terminals

Ars Technica <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020032402nasa-26r-3Demail-2D0242-26l-3D03a-2D1d0-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=tuWFDnSEqUdfzg8u\\_WjS\\_an\\_dFlfjhJZoavF99JtLW8&s=ueipr6Xgm7DICcNYI-GRQBSHHZq8OXXfL7qZKWgSa3w&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020032402nasa-26r-3Demail-2D0242-26l-3D03a-2D1d0-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=tuWFDnSEqUdfzg8u_WjS_an_dFlfjhJZoavF99JtLW8&s=ueipr6Xgm7DICcNYI-GRQBSHHZq8OXXfL7qZKWgSa3w&e=>) (3/23, Brodtkin) “SpaceX has received government approval to deploy up to 1 million user terminals in the United States for its Starlink satellite-broadband constellation. SpaceX asked the Federal Communications Commission for the license in February 2019, and the FCC announced its approval in a public notice last week. The FCC approval is for “a blanket license for the operation of up to 1,000,000 fixed earth stations that will communicate with [SpaceX’s] non-geostationary orbit satellite system.” The license is good for 15 years.”

## Long March 2C Successfully Launched Latest Yaogan Weixing Mission

NASA Space Flight <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020032402nasa-26r-3Demail-2D0242-26l-3D03b-2Dc6a-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=tuWFDnSEqUdfzg8u\\_WjS\\_an\\_dFlfjhJZoavF99JtLW8&s=3FIncvE-WDFPKAos7-Crw5Fpvfgl06KS553U50N2oxY&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020032402nasa-26r-3Demail-2D0242-26l-3D03b-2Dc6a-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=tuWFDnSEqUdfzg8u_WjS_an_dFlfjhJZoavF99JtLW8&s=3FIncvE-WDFPKAos7-Crw5Fpvfgl06KS553U50N2oxY&e=>) (3/24, Barbosa) “After losing the first Long March-7A one week ago, China launched a new group of triplet satellites for the Chuangxin-5 (CX-5) constellation. Launched under the name Yaogan Weixing-30 Group-6, the three satellites were orbited by a Long March-2C launch vehicle from the LC3 Launch Complex of the Xichang Satellite Launch Center. The launch took place at 03:43 UTC.”

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## **[EXTERNAL] NASA Morning Briefing for Tuesday, October 13, 2020**

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### Editor's Note

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## Top Stories

### Rocket Problem Prompts NASA And SpaceX To Delay Next Launch Of Astronauts

Washington Post <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D003-2Dd37-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc\\_zLXzOFF4yXXVqh03up42hf6wxrZmvHAY&s=8FvFCe5k5cQvhrm\\_jAiSfviGvjAWeYCXDFN8-egb8Dk&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D003-2Dd37-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc_zLXzOFF4yXXVqh03up42hf6wxrZmvHAY&s=8FvFCe5k5cQvhrm_jAiSfviGvjAWeYCXDFN8-egb8Dk&e=>) (10/10, Davenport) "NASA announced Saturday that SpaceX's next mission flying astronauts to the International Space Station will be delayed until early or mid-November after the company experienced a problem with the first stage of a booster rocket during a recent launch. In a blog post, the agency said that the extra time would allow 'SpaceX to complete hardware testing and data reviews' of an issue with an engine gas generator."

### NASA Delays Next Crew Dragon Flight In Wake Of Last Week's Aborted Falcon 9 Launch

CBS News <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D004-2D128-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc\\_zLXzOFF4yXXVqh03up42hf6wxrZmvHAY&s=l2NirL727W2LTQROtF\\_\\_pICN5tkP4kaCNsQc1pxZ3w8&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D004-2D128-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc_zLXzOFF4yXXVqh03up42hf6wxrZmvHAY&s=l2NirL727W2LTQROtF__pICN5tkP4kaCNsQc1pxZ3w8&e=>) (10/10, Harwood) "Launch of the next SpaceX Crew Dragon capsule, this one carrying four astronauts, is slipping a week or more, from October 31 to no earlier than 'early to mid November,' the agency said Saturday, citing time needed to resolve a Falcon 9 engine problem that triggered a last-second launch abort last week. The nine first-stage engines in the Falcon 9 that will launch the Crew Dragon are presumably healthy, but engineers want to make sure they fully understand what caused the Oct. 2 launch abort with a different rocket before pressing ahead with a piloted mission."

### Mark Kelly's Views On Space Force, NASA's Artemis Return To The Moon Are Problematic

The Hill <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D005-2D844-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc\\_zLXzOFF4yXXVqh03up42hf6wxrZmvHAY&s=k2uzalXWtjVtkyV7nY88kzQ0jQY6N\\_Q-HBQhT0pvsWC&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D005-2D844-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc_zLXzOFF4yXXVqh03up42hf6wxrZmvHAY&s=k2uzalXWtjVtkyV7nY88kzQ0jQY6N_Q-HBQhT0pvsWC&e=>) (10/11, Whittington) "Captain Mark Kelly, a candidate for senator from the state of Arizona, has an impressive resume. He flew combat missions during Operation Desert Storm. He flew on the space shuttle four times, twice as a mission commander. However, Kelly's views on space policy, a subject with which he

should be familiar given his former profession, are problematic. ... NASA Administrator Jim Bridenstine supported the Space Force's establishment. NASA recently signed an agreement with the Space Force to cooperate in several areas of mutual interest, including 'human spaceflight, U.S. space policy, space transportation, standards and best practices for safe operations in space, scientific research, and planetary defense.'"

#### 'How We Got To The Moon' Tells The Story Of NASA's 1960s Venture In Rich Detail

Washington Post <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D006-2De9d-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc\\_zLXzOFF4yXXVqh03up42hf6wxrZmvHAY&s=rMMGPqG2BZe6Geja1SvjxCtrs5dU7A3oYkwuDDEGmhk&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D006-2De9d-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc_zLXzOFF4yXXVqh03up42hf6wxrZmvHAY&s=rMMGPqG2BZe6Geja1SvjxCtrs5dU7A3oYkwuDDEGmhk&e=>)

(10/11, Nolan) "Author-illustrator John Rocco has worked on many kinds of projects over the years, including designing demigods for the covers of the Percy Jackson, Magnus Chase and Kane Chronicles book series. In his latest book, he focuses on heroes from a different realm: the human engineers and scientists who worked on the United States space program in the 1960s. ... To understand the thousands of decisions that went into the project, Rocco read widely and contacted more than 20 NASA engineers."

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#### Russia Says Lunar Gateway 'Too U.S.-Centric'

Aviation Week <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D007-2Dc37-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc\\_zLXzOFF4yXXVqh03up42hf6wxrZmvHAY&s=1i\\_qFTmlAZHaCd910j4bnpUYSVevJoKQ90zfaa8Dxuw&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D007-2Dc37-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc_zLXzOFF4yXXVqh03up42hf6wxrZmvHAY&s=1i_qFTmlAZHaCd910j4bnpUYSVevJoKQ90zfaa8Dxuw&e=>)

(10/12) "The head of Russia's space agency is raising questions about the oversight and leadership of NASA's planned lunar-orbiting Gateway, saying more collective decision-making, for example, is needed..."

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#### Flight

#### This Was The Fastest Manned Aircraft Ever

Business Insider <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D008-2Dda0-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc\\_zLXzOFF4yXXVqh03up42hf6wxrZmvHAY&s=m1j-jl0KNuU93Y-yBq8Mku6HIDzwX2rQ4vq87HcUQL4&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D008-2Dda0-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc_zLXzOFF4yXXVqh03up42hf6wxrZmvHAY&s=m1j-jl0KNuU93Y-yBq8Mku6HIDzwX2rQ4vq87HcUQL4&e=>)

(10/9, Stilwell) "The Cold War was a great time for NASA and the US Air Force. It seemed like they were able to do pretty much whatever they wanted in the interest of just seeing if they could do it. But the X-15 was much more than just a power play. Even though the Air Force already had the perfect spy plane, capable of flying across the planet at Mach 3, they still decided to up the game just a little further and came away with some important discoveries — discoveries that led to the creation of the Space Shuttle."

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#### Earth

#### NASA Finds Hurricane Delta Packing Heavy Rainfall

Phys (UK) <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D009-2Dd00-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc\\_zLXzOFF4yXXVqh03up42hf6wxrZmvHAY&s=m1j-jl0KNuU93Y-yBq8Mku6HIDzwX2rQ4vq87HcUQL4&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D009-2Dd00-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc_zLXzOFF4yXXVqh03up42hf6wxrZmvHAY&s=m1j-jl0KNuU93Y-yBq8Mku6HIDzwX2rQ4vq87HcUQL4&e=>)

3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D009-2D6ea-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc\_zLXzOFF4yXXVqh03up42hf6wxrZmvHAY&s=HqwPsfLLiD12BvWmwYi9Y5RtTG9\_n8YWti24rcOD\_8Q&e=> (10/9, Gutro) "NASA's satellite rainfall product that incorporates data from satellites and observations found that Hurricane Delta was bringing along heavy rainfall as it headed to the U.S. Gulf Coast on Oct. 9. There are many warnings in effect, as Delta approaches the U.S. Gulf coast. A Storm Surge Warning is in effect from High Island, Texas to Mouth of the Pearl River, Louisiana including Calcasieu Lake, Vermilion Bay, and Lake Borgne."

#### NASA Shows Heaviest Rainfall Displaced In Typhoon Chan-Hom

Phys (UK) <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D00a-2D9e6-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc\\_zLXzOFF4yXXVqh03up42hf6wxrZmvHAY&s=KZ9t6\\_b-6xooJdkD\\_SiMNIZVDwuKYt3TkDk0FMPAMQQ&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D00a-2D9e6-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc_zLXzOFF4yXXVqh03up42hf6wxrZmvHAY&s=KZ9t6_b-6xooJdkD_SiMNIZVDwuKYt3TkDk0FMPAMQQ&e=>) (10/9, Gutro) "Typhoon Chan-hom was still moving parallel to Japan's east coast as NASA's satellite rainfall product, that incorporates data from satellites and observations, showed its heaviest rainfall was pushed northeast of center. At 5 a.m. EDT (0900 UTC), the center of Chan-hom was located near latitude 30.9 degrees north and longitude 133.9 degrees east. That is approximately 413 nautical miles southwest of Yokosuka, Japan. Chan-hom was moving to the north-northeast. Maximum sustained winds are near 70 knots (81 mph/130 kph)."

#### Scientists Return From Arctic With Wealth Of Climate Data

Associated Press <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D00b-2D972-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc\\_zLXzOFF4yXXVqh03up42hf6wxrZmvHAY&s=tPqbk\\_gwUddN9rphryAuxZ8K2IKTmQIVmoL0\\_0\\_SVpM&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D00b-2D972-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc_zLXzOFF4yXXVqh03up42hf6wxrZmvHAY&s=tPqbk_gwUddN9rphryAuxZ8K2IKTmQIVmoL0_0_SVpM&e=>) (10/12, Jordans) "An icebreaker carrying scientists on a year-long international effort to study the high Arctic has returned to its home port in Germany carrying a wealth of data that will help researchers better predict climate change in the decades to come. ... 'We went above and beyond the data collection we set out to do,' said Melinda Webster, a sea ice expert at the University of Alaska, Fairbanks, whose work is funded by NASA."

#### Humans in Space

##### Rocket Problem Prompts NASA And SpaceX To Delay Next Launch Of Astronauts

Washington Post <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D00c-2D32e-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc\\_zLXzOFF4yXXVqh03up42hf6wxrZmvHAY&s=64kLk9-v\\_rt-Xk4XiyfiMH0DLE6WWL6Yflg1t\\_AOqUE&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D00c-2D32e-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc_zLXzOFF4yXXVqh03up42hf6wxrZmvHAY&s=64kLk9-v_rt-Xk4XiyfiMH0DLE6WWL6Yflg1t_AOqUE&e=>) (10/10, Davenport) "NASA announced Saturday that SpaceX's next mission flying astronauts to the International Space Station will be delayed until early or mid-November after the company experienced a problem with the first stage of a booster rocket during a recent launch. In a blog post, the agency said that the extra time would allow 'SpaceX to complete hardware testing and data reviews' of an issue with an engine gas generator."

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CBS News <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D00d-2Dfbb-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc\\_zLXzOFF4yXXVqh03up42hf6wxrZmvHAY&s=gjGbUWEIkH8PAYk4Hb0Y3\\_yrJwPShOGhqSAFUMxrijs&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D00d-2Dfbb-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc_zLXzOFF4yXXVqh03up42hf6wxrZmvHAY&s=gjGbUWEIkH8PAYk4Hb0Y3_yrJwPShOGhqSAFUMxrijs&e=>) (10/10, Harwood) "Launch of the next SpaceX Crew Dragon capsule, this one carrying four astronauts, is slipping a week or more, from October 31 to no earlier than 'early to mid November,' the agency said Saturday, citing time needed to resolve a Falcon 9 engine problem that triggered a last-second launch abort last week. The nine first-stage engines in the Falcon 9 that will launch the Crew Dragon are presumably healthy, but engineers want to make sure they fully understand what caused the Oct. 2 launch abort with a different rocket before pressing ahead with a piloted mission."

## NASA Delays Commercial Crew Mission To Study Falcon 9 Engine Issue

Space News <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D00e-2D8b3-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc\\_zLXzOFF4yXXVqh03up42hf6wxrZmvHAY&s=wCwENOGpOPk9QNpug-nq35rs0OikWpA39ule2jVsyPw&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D00e-2D8b3-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc_zLXzOFF4yXXVqh03up42hf6wxrZmvHAY&s=wCwENOGpOPk9QNpug-nq35rs0OikWpA39ule2jVsyPw&e=>) (10/10, Foust) "NASA is delaying the launch of the first operational SpaceX commercial crew mission to the first half of November to provide more time to review a problem during a recent Falcon 9 launch attempt. NASA announced Oct. 10 the Crew-1 mission, which was scheduled to launch on a Falcon 9 in the early morning hours of Oct. 31 from the Kennedy Space Center, will now launch no earlier than early to mid-November."

## NASA, SpaceX Delay Next Crew Dragon Launch

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## SpaceX Crew-1 Launch To The ISS Delayed Until November

Gizmodo <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D010-2Df77-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc\\_zLXzOFF4yXXVqh03up42hf6wxrZmvHAY&s=ZNvL8ZoVrePqad5od6XuFIB6GRn8Dv8IDMZqt7va-Us&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D010-2Df77-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc_zLXzOFF4yXXVqh03up42hf6wxrZmvHAY&s=ZNvL8ZoVrePqad5od6XuFIB6GRn8Dv8IDMZqt7va-Us&e=>) (10/10, Serrano) "NASA announced that it was delaying the launch of its SpaceX Crew-1 mission to the International Space Station until early to mid-November because of issues with the spaceflight company's Falcon 9 rocket. The launch was originally scheduled for Oct. 31 at NASA's Kennedy Space Center in Florida."

## SpaceX Delays Next Launch With Astronauts Due To Falcon 9 Engine Issues

Florida Today <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D011-2D0fa-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc\\_zLXzOFF4yXXVqh03up42hf6wrxrZmvHAY&s=Kf\\_Jpz9u\\_UviybchdyyAiTXw0yvV8QCpYf58FKukxY&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D011-2D0fa-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc_zLXzOFF4yXXVqh03up42hf6wrxrZmvHAY&s=Kf_Jpz9u_UviybchdyyAiTXw0yvV8QCpYf58FKukxY&e=>)> (10/10, Kelly) "SpaceX and NASA have delayed the upcoming launch of astronauts from Kennedy Space Center due to hardware issues discovered with a Falcon 9 rocket during a recent launch attempt, both confirmed Saturday. NASA astronauts Victor Glover, Michael Hopkins, and Shannon Walker, along with Japanese astronaut Soichi Noguchi, are now slated to fly to the International Space Station no earlier than early-to-mid November. Pad 39A will host the Crew Dragon capsule mission known as SpaceX Crew-1."

#### SpaceX Crew Launch Delayed To Assess Merlin Engine Concern

Spaceflight Now <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D012-2D5bd-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc\\_zLXzOFF4yXXVqh03up42hf6wrxrZmvHAY&s=wYKmmWzog62KC-0QI7a\\_iyNMI6lc0AUI6hlwdH-yIN0&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D012-2D5bd-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc_zLXzOFF4yXXVqh03up42hf6wrxrZmvHAY&s=wYKmmWzog62KC-0QI7a_iyNMI6lc0AUI6hlwdH-yIN0&e=>)> (10/10, Clark) "NASA said Saturday that the launch of four astronauts on SpaceX's first operational Crew Dragon mission to the International Space Station has been delayed from Oct. 31 until 'no sooner than early-to-mid November,' allowing time for SpaceX to resolve an issue with Falcon 9 rocket engines that halted a recent launch attempt with a GPS navigation satellite."

#### Launch Of NASA's SpaceX Crew-1 Mission Delayed Until November

The Verge <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D013-2D9e7-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc\\_zLXzOFF4yXXVqh03up42hf6wrxrZmvHAY&s=tDLw5b9OZ8a4tW85mpL2c3lM6fILt-xtTPBjFX\\_zhAM&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D013-2D9e7-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc_zLXzOFF4yXXVqh03up42hf6wrxrZmvHAY&s=tDLw5b9OZ8a4tW85mpL2c3lM6fILt-xtTPBjFX_zhAM&e=>)> (10/10, Lyons) "NASA has delayed the launch of the SpaceX Crew-1 mission until early-to mid-November, the agency announced Saturday. The mission eventually will bring three NASA astronauts and an astronaut from Japan's JAXA space agency to the International Space Station. Originally scheduled for October 31st, the planned six-month mission was delayed to allow time to resolve issues with the first-stage engine gas generators on the Falcon 9 rocket, NASA said in a statement."

#### NASA, SpaceX Delay Crew Dragon Launch

WFTV-TV Orlando (FL) <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D014-2D7f0-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc\\_zLXzOFF4yXXVqh03up42hf6wrxrZmvHAY&s=2pQAsJV05VZEqydfVUa-GWreU92odC61T9Li1TFyDFo&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D014-2D7f0-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc_zLXzOFF4yXXVqh03up42hf6wrxrZmvHAY&s=2pQAsJV05VZEqydfVUa-GWreU92odC61T9Li1TFyDFo&e=>)> (10/12) "It will be early to mid-November before the next Crew Dragon flight to the International Space Station. SpaceX and NASA will need that time to finish hardware testing and data reviews on the spacecraft."

#### NASA, SpaceX Delay Next Astronaut Launch Until Early Or Mid-November

Orlando (FL) Sentinel <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D015-](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D015-)

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IMA0ETkhUklgzX3PUa-1k&e=> (10/10, Skoneki) "NASA, SpaceX delay next astronaut launch until early or mid-  
November"

NASA's First Real Crew Dragon Mission Has Been Delayed

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NASA's SpaceX Crew-1 Launch Postponed

Houston Chronicle <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D017-2Dc91-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc\\_zLXzOFF4yXXVqh03up42hf6wxrZmvHAY&s=7JSHqr2uW9d0\\_UG8RRyXG2sTA-GeZbtVWVH0nZf9Bqg&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D017-2Dc91-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc_zLXzOFF4yXXVqh03up42hf6wxrZmvHAY&s=7JSHqr2uW9d0_UG8RRyXG2sTA-GeZbtVWVH0nZf9Bqg&e=>) (10/10, Serrano) "NASA's SpaceX Crew-1 launch to the International Space Station scheduled for Halloween was postponed until at least early- to mid-November, officials said Saturday. The postponement will enable SpaceX test hardware and review data after the company observed 'off-nominal' behavior in one of the rocket's first stage engine gas generators during a recent non-NASA launch attempt, agency officials said in a statement."

SpaceX Rocket Issue Delays Astronaut Launch

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NASA And SpaceX Crew Mission To ISS Delayed To Investigate Falcon 9 Issue

CNET News <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D019-2Dc64-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc\\_zLXzOFF4yXXVqh03up42hf6wxrZmvHAY&s=8wTk-D-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc\\_zLXzOFF4yXXVqh03up42hf6wxrZmvHAY&s=8wTk-D-](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D019-2Dc64-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc_zLXzOFF4yXXVqh03up42hf6wxrZmvHAY&s=8wTk-D-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc_zLXzOFF4yXXVqh03up42hf6wxrZmvHAY&s=8wTk-D-)



kxr65HGfuPqqr1Ap2DjNmakkwVdyqztZknTM&e=> (10/12, Kooser) "A Halloween launch for SpaceX's Crew-1 mission to the International Space Station won't be happening. It's been more tricks than treats for space launches lately. SpaceX's first regular operational mission (meaning not a test mission) to ferry astronauts to the ISS has been pushed back to no sooner than early to mid November, NASA announced Saturday."

#### Falcon 9 Engine Issue Delays SpaceX's 1st ISS Crew Ferry Flight

Aviation Week <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_\\_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D01a-2D4d6-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc\\_zLXzOFF4yXXVqh03up42hf6wxrZmvHAY&s=6uDXnwfzWAODTZc\\_UkHxkgNSQNoiDiv75WWmipNhigk&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com__mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D01a-2D4d6-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc_zLXzOFF4yXXVqh03up42hf6wxrZmvHAY&s=6uDXnwfzWAODTZc_UkHxkgNSQNoiDiv75WWmipNhigk&e=>) (10/12) "A SpaceX investigation into an issue with a Falcon 9 main engine, which has temporarily grounded a U.S. Space Force GPS III satellite, is affecting a second mission, with launch of a..."

#### SpaceX's Next Astronaut Launch For NASA Delayed Until November

SPACE <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_\\_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D01b-2D23f-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc\\_zLXzOFF4yXXVqh03up42hf6wxrZmvHAY&s=UWeZnc7jicJIT5IQ3waTdX4wxm8IMzzVPekkJGXeMpQ&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com__mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D01b-2D23f-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc_zLXzOFF4yXXVqh03up42hf6wxrZmvHAY&s=UWeZnc7jicJIT5IQ3waTdX4wxm8IMzzVPekkJGXeMpQ&e=>) (10/10, Wall) "SpaceX's next astronaut launch for NASA won't fly on Halloween after all. The upcoming Crew-1 mission, which will send four astronauts to the International Space Station, had been scheduled to lift off atop a SpaceX Falcon 9 rocket on Oct. 31. But the launch will now occur no sooner than early to mid-November, NASA officials announced today (Oct. 10)."

#### Boeing Astronaut Skips Space Flight To Attend Daughter's Wedding

Fox News <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_\\_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D01c-2D219-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc\\_zLXzOFF4yXXVqh03up42hf6wxrZmvHAY&s=qBtVFj4JUf-8BUerpcbxOVCmphE0eogvP-ZPFNtbhVs&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com__mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D01c-2D219-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc_zLXzOFF4yXXVqh03up42hf6wxrZmvHAY&s=qBtVFj4JUf-8BUerpcbxOVCmphE0eogvP-ZPFNtbhVs&e=>) (10/9, Puhak) "He wouldn't miss this wedding for the world. The commander of Boeing's historic first crewed space flight has stepped away from the assignment in order to ensure he'll be on Earth for his daughter's wedding next year. Astronaut Chris Ferguson announced the news on Wednesday, describing it as a 'difficult and personal decision' to leave his position with the Boeing Starliner crew and skip the trip to the International Space Station in 2021."

#### We Finally Know Why Boeing's Test Flight Commander Bowed Out Of Starliner Test

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## Commander Of Boeing's First Manned Flight To Space Pulls Out To Attend Daughter's Wedding

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## Influencers In Space: Astronauts Prepare To Receive Cosmetics And A New Toilet

NPR <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D01f-2D062-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc\\_zLXzOFF4yXXVqh03up42hf6wxrZmvHAY&s=Vvu-TWiC4UEXGKC\\_TKSHe2hSiBcMPC9OgndDruFcj3g&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D01f-2D062-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc_zLXzOFF4yXXVqh03up42hf6wxrZmvHAY&s=Vvu-TWiC4UEXGKC_TKSHe2hSiBcMPC9OgndDruFcj3g&e=>) (10/11, Silva) "Hygiene and self care are vital — even in zero gravity. Which is why astronauts on the International Space Station are preparing for a fun delivery: a skincare serum from the cosmetics maker Estée Lauder, as well as a new and improved toilet. Astronauts won't actually be using the brand's Advanced Night Repair Synchronized Multi-Recovery Complex, says Robyn Gatens, the acting director of the International Space Station. Instead, the plan is for them to take photos and video in space of the \$105 per bottle serum that the company will then be able to use for advertisements across its social media channels. According to ABC News, it will cost Estée Lauder \$17,500 per hour."

## The Right Stuff Cast Side-by-Side With The Real-Life Astronauts They Play In The Series

People <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D020-2D2f8-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc\\_zLXzOFF4yXXVqh03up42hf6wxrZmvHAY&s=vk1tWxEAiXTsuWB1\\_H2vHWi FxaTeTnq3smHfFrAgX9A&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D020-2D2f8-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc_zLXzOFF4yXXVqh03up42hf6wxrZmvHAY&s=vk1tWxEAiXTsuWB1_H2vHWi FxaTeTnq3smHfFrAgX9A&e=>) (10/9, J. Cho) "The National Geographic original scripted series based on famed author Tom Wolfe's bestselling book, premiering Oct. 9 on Disney+, tells the story of NASA's original Mercury Seven"

## Astronaut Tim Peake Says Lockdown Was More Stressful Than Space Station Life

Daily Mirror (UK) <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D021-2Db0d-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc\\_zLXzOFF4yXXVqh03up42hf6wxrZmvHAY&s=cAwxnSD6KVKu308FILoBbO1 2khY8hgd\\_GqBW4ItSJRc&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D021-2Db0d-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc_zLXzOFF4yXXVqh03up42hf6wxrZmvHAY&s=cAwxnSD6KVKu308FILoBbO1 2khY8hgd_GqBW4ItSJRc&e=>) (10/9, Boulton) "The astronaut spent months trapped in one place, his wits and resolve pushed to their very limits. Every day, he had to be at the top of his game, for he knew that the second he lost control, there would be no coming back. It must have been one of Major Tim Peake's toughest missions to date – and certainly not one he had signed up for. What was it? Homeschooling. Forget five months on the International Space Station."

## NASA Advances Plan To Commercialize International Space Station

UPI <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D022-2De1e-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc\\_zLXzOFF4yXXVqh03up42hf6wxrZmvHAY&s=hRYpKjI2FD\\_NXB3Zv9eOfw3mt9yO3nVb1GKYyK1YA5k&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D022-2De1e-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc_zLXzOFF4yXXVqh03up42hf6wxrZmvHAY&s=hRYpKjI2FD_NXB3Zv9eOfw3mt9yO3nVb1GKYyK1YA5k&e=>) (10/12, Brinkmann) "The planned launch of a private commercial airlock to the International Space Station in November will accelerate NASA's plan to turn the International Space Station into a hub of private industry, space agency officials said. The commercialization plan also includes the launch of a private habitat and laboratory by 2024 and a project NASA Administrator Jim Bridenstine announced on Twitter in May in which actor Tom Cruise will film a movie in space."

How Do Astronauts Poop And Pee In Space? This NASA Astronaut Explains.

Vice <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D023-2Db3e-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc\\_zLXzOFF4yXXVqh03up42hf6wxrZmvHAY&s=WgfZpIXehdDDiNpS5vcwTYd4nY0iWmM6kFYsfuqXB34&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D023-2Db3e-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc_zLXzOFF4yXXVqh03up42hf6wxrZmvHAY&s=WgfZpIXehdDDiNpS5vcwTYd4nY0iWmM6kFYsfuqXB34&e=>) (10/12, Lantican) "Ever wondered how astronauts use the bathroom in space? This new video tutorial gets into all the details. NASA astronaut and United States Navy SEAL Christopher Cassidy said this is by far the most common question astronauts get. So, in a 7-minute video posted on social media, Cassidy, who has been an astronaut since 2004, takes viewers through the process."

NASA's Dr. Kate Rubin Has Advice For Women After Her Own Journey To Space

ZDNet <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D024-2D099-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc\\_zLXzOFF4yXXVqh03up42hf6wxrZmvHAY&s=oj2KPWXCchr-8rLkzG9hLoQXjSb6PYhN0HcnhRWUQ&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D024-2D099-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc_zLXzOFF4yXXVqh03up42hf6wxrZmvHAY&s=oj2KPWXCchr-8rLkzG9hLoQXjSb6PYhN0HcnhRWUQ&e=>) (10/12) "NASA's Dr. Kate Rubin has advice for women after her own journey to space"

Sorry, SpaceX. Watch This Week As NASA Pays \$90 Million To Launch U.S. Astronaut On A Russian Rocket

Forbes <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D025-2Dda4-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc\\_zLXzOFF4yXXVqh03up42hf6wxrZmvHAY&s=Lw0PwYGumyRXXK1rYUxPk6jmCezWsNvIEf9cZOGKqwh4&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D025-2Dda4-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc_zLXzOFF4yXXVqh03up42hf6wxrZmvHAY&s=Lw0PwYGumyRXXK1rYUxPk6jmCezWsNvIEf9cZOGKqwh4&e=>) (10/12, Carter) "U.S. astronauts now fly to the International Space Station (ISS) from American soil, right? So why is a NASA astronaut about to blast-off to the ISS from Russia at a cost of over \$90 million?"

NASA Astronaut Kate Rubins Is Ready For A 2nd 'Bucket List' Trip To The Space Station

CNN <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D026-2Da05-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc\\_zLXzOFF4yXXVqh03up42hf6wxrZmvHAY&s=Lrjc9ZtnvKsGWWO8iPqrlY5e1K](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D026-2Da05-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc_zLXzOFF4yXXVqh03up42hf6wxrZmvHAY&s=Lrjc9ZtnvKsGWWO8iPqrlY5e1K)

6wWLE9Q7LksEOI28o&e=> (10/13, Strickland) "Just a few weeks ahead of the 20th anniversary of a continuous human presence in space, NASA astronaut Kate Rubins and Russian cosmonauts Sergey Ryzhikov and Sergey Kud-Sverchkov are scheduled to launch for a stay on the International Space Station. The launch from the Baikonur Cosmodrome in southern Kazakhstan is scheduled for 1:45 am ET on Wednesday and will be broadcast live on NASA's website. The trio's Soyuz capsule is expected to dock with the space station at 4:52 a.m. ET, and the hatch between the space station and the capsule will open at 6:45 a.m. ET, allowing them to enter the station."

#### Moon to Mars

#### Mark Kelly's Views On Space Force, NASA's Artemis Return To The Moon Are Problematic

The Hill <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D027-2D57b-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc\\_zLXzOFf4yXXVqh03up42hf6wxrZmvHAY&s=0\\_RbzYDt9U3O8ROGgWkiRuVlfgHcuEDo95e\\_gbbQs\\_s&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D027-2D57b-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc_zLXzOFf4yXXVqh03up42hf6wxrZmvHAY&s=0_RbzYDt9U3O8ROGgWkiRuVlfgHcuEDo95e_gbbQs_s&e=>) (10/11, Whittington) "Captain Mark Kelly, a candidate for senator from the state of Arizona, has an impressive resume. He flew combat missions during Operation Desert Storm. He flew on the space shuttle four times, twice as a mission commander. However, Kelly's views on space policy, a subject with which he should be familiar given his former profession, are problematic. ... NASA Administrator Jim Bridenstine supported the Space Force's establishment. NASA recently signed an agreement with the Space Force to cooperate in several areas of mutual interest, including 'human spaceflight, U.S. space policy, space transportation, standards and best practices for safe operations in space, scientific research, and planetary defense.'"

#### 'How We Got To The Moon' Tells The Story Of NASA's 1960s Venture In Rich Detail

Washington Post <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D028-2D8d8-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc\\_zLXzOFf4yXXVqh03up42hf6wxrZmvHAY&s=KFdxi4Q7iSID5UonVcrtbeWtGKxk0m9rmbtC4SuSXQ&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D028-2D8d8-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc_zLXzOFf4yXXVqh03up42hf6wxrZmvHAY&s=KFdxi4Q7iSID5UonVcrtbeWtGKxk0m9rmbtC4SuSXQ&e=>) (10/11, Nolan) "Author-illustrator John Rocco has worked on many kinds of projects over the years, including designing demigods for the covers of the Percy Jackson, Magnus Chase and Kane Chronicles book series. In his latest book, he focuses on heroes from a different realm: the human engineers and scientists who worked on the United States space program in the 1960s. ... To understand the thousands of decisions that went into the project, Rocco read widely and contacted more than 20 NASA engineers."

#### Northrop To Provide Additional Equipment For Orion Program

WAAY-TV Huntsville (AL) <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D029-2D112-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc\\_zLXzOFf4yXXVqh03up42hf6wxrZmvHAY&s=frXlwzdomTCA7wnDsTHldM6pPh10j5gP4kY2ljsAFGo&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D029-2D112-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc_zLXzOFf4yXXVqh03up42hf6wxrZmvHAY&s=frXlwzdomTCA7wnDsTHldM6pPh10j5gP4kY2ljsAFGo&e=>) (10/12) "New at 5, Northrop Grumman will provide another six abort and attitude control motors for the Orion human spaceflight capsule. This is under an agreement with Lockheed Martin, which is Orion's prime contractor. The motors will be used for six crewed Artemis missions."

#### NASA Invests In Deep-Space Human Health Research

Aviation Week <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D02a-2D70c-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc\\_zLXzOFF4yXXVqh03up42hf6wxrZmvHAY&s=JOGGI6ZRHOv003gyxiKDiWE BNTownEFaV6UpYFoYOe8&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D02a-2D70c-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc_zLXzOFF4yXXVqh03up42hf6wxrZmvHAY&s=JOGGI6ZRHOv003gyxiKDiWE BNTownEFaV6UpYFoYOe8&e=>)> (10/9) “NASA is allocating \$19.3 million for 21 studies on the physical and psychological issues astronauts will face as the agency prepares to return to the Moon’s surface in 2024 and advance to Mars in the...”

#### NASA Administrator Discusses Crewed Missions To Mars

Florida Today <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D02b-2D39d-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc\\_zLXzOFF4yXXVqh03up42hf6wxrZmvHAY&s=PQPp8kPIdA79OwL9HJeiOld W8bH7T4UPgFK6kjysw1w&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D02b-2D39d-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc_zLXzOFF4yXXVqh03up42hf6wxrZmvHAY&s=PQPp8kPIdA79OwL9HJeiOld W8bH7T4UPgFK6kjysw1w&e=>)> (10/9) “NASA Administrator discusses crewed missions to Mars”

#### NASA Will Announce New Space Technology Private Partnerships

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#### Crucial First Fueling Test On Tap For SLS Core Stage Later This Month

Spaceflight Now <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D02d-2D131-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc\\_zLXzOFF4yXXVqh03up42hf6wxrZmvHAY&s=hqcfVxPm79WWAWG71uZdDI 3MURMuA0J01EdS51q1C9M&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D02d-2D131-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc_zLXzOFF4yXXVqh03up42hf6wxrZmvHAY&s=hqcfVxPm79WWAWG71uZdDI 3MURMuA0J01EdS51q1C9M&e=>)> (10/9, Clark) “If all goes according to plan, engineers in southern Mississippi later this month will load cryogenic propellants into the core stage of a rocket NASA says will launch astronauts back to the moon, exposing its tankage and internal plumbing to extreme operating conditions hundreds of degrees below zero for the first time. The fueling test — a major milestone in its own right — is a precursor to a high-stakes eight-minute test-firing of the Space Launch System’s four shuttle-era main engines planned as soon as November.”

#### Critical Fuel Loading Test For The SLS Core Stage Happens This Month

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mHkTTiYCEf5ROyus&m=hW8QNVr8hc\_zLXzOFF4yXXVqh03up42hf6wxrZmvHAY&s=ncvM9nO71iXD8XqAltbEQd5b  
hT6KdJ49udR4jfQ5jRc&e=> (10/11, McGlaun) "NASA is making preparations on multiple levels for the historic return  
of humans to the moon in the coming years. Engineers intend to conduct a critical test on the Space Launch System  
(SLS) core stage rocket that will help carry astronauts to the moon. Engineers will load cryogenic propellants into the  
core stage and expose the tank and internal plumbing to the extreme conditions of propellants that are hundreds of  
degrees below zero."

#### What Would You Bring To The Moon? NASA Wants To Know

San Francisco Chronicle <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D02f-2Df55-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D02f-2Df55-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-)

mHkTTiYCEf5ROyus&m=hW8QNVr8hc\_zLXzOFF4yXXVqh03up42hf6wxrZmvHAY&s=9i9Vg8cxbwmbh53LoTxgP5oK  
KTu-mh44tPjYJu7A4b4&e=> (10/9, Rosenthal) "People have brought some interesting things to the moon in the  
decades of space exploration. Apollo 14 astronaut Alan Shepard left three golf balls. Apollo 11 astronauts Buzz Aldrin  
and Neil Armstrong left sampling tools like scoops and tongs while lightening the load for the return home. Aldrin  
brought a chalice, bread and wine to take communion. Now, in preparation for people returning to the moon in 2024 as  
part of the Artemis program, NASA wants to know what you would take to the moon with the hashtag #NASAMoonKit."

#### NASA Wants To Know What You'd Pack On A Trip To The Moon

SlashGear <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D030-2D190-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc\\_zLXzOFF4yXXVqh03up42hf6wxrZmvHAY&s=N9Z-irq9QBP7beR5f0BPgGqRismZPTf2zoX4\\_eAU4I&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D030-2D190-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc_zLXzOFF4yXXVqh03up42hf6wxrZmvHAY&s=N9Z-irq9QBP7beR5f0BPgGqRismZPTf2zoX4_eAU4I&e=>) (10/9, Roston) "We're still many years away from casual  
consumer trips to the Moon, but it's easy to fantasize about such trips. NASA is getting in on the fun with a new  
campaign presenting the public with a simple question: what would you pack if you were taking your own lunar trip?  
NASA is encouraging anyone interested to share a picture of what's in their bag (for this imagined Moon trip) using its  
new #NASAMoonKit social campaign."

#### Don't Miss Your Socially Distanced Date With Mars

NPR <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D031-2D8c7-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D031-2D8c7-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-)

mHkTTiYCEf5ROyus&m=hW8QNVr8hc\_zLXzOFF4yXXVqh03up42hf6wxrZmvHAY&s=9a0BCP\_7rPH\_tv5ghnkyC1gE  
Uz7QuP\_8qFtE\_y5tDgA&e=> (10/11, Jingnan) "Stargazers perk up — Mars is getting big and bright the coming week,  
as the sun, Earth and Mars line up close to a new moon on the night of Oct. 13. The event that happens about every  
two years is called 'opposition' in astronomy terms: the sun and Mars on opposite sides of Earth. From the earthling's  
perspective, according to NASA, Mars rises in the east just as the sun sets in the west, and would stay up in the sky  
the whole night, setting in the west just as the sun rises."

#### Moon May Harbor Ancient Pieces Of Venus' Surface

Forbes <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-)

3D2020101302nasa-26r-3Demail-2D19f1-26l-3D032-2D099-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc\_zLXzOFF4yXXVqh03up42hf6wxrZmvHAY&s=YZ45HZ9r5vocejNgL5CGGY8MTJricXq5Cm3wsQ0T0&e=> (10/9, Dorminey) "Two Yale University researchers have found a potential shortcut in sampling Venus' ancient surface. Instead of sending a probe on a costly and extraordinarily challenging Venus sample return mission, they propose simply finding a Venusian meteorite on our own Moon. ... Upcoming Moon missions in NASA's Artemis program are a great opportunity to search for Venusian meteorites, says Cabot. In situ analysis might be possible, he says, with astronauts or robots picking out rocks to bring back to Earth for laboratory analysis."

#### Mars To Shine Bright During October 'Opposition'

NBC News <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D033-2D219-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc\\_zLXzOFF4yXXVqh03up42hf6wxrZmvHAY&s=soemJzlqwXnLTVtuMWnVI971aHVZJxgPHYc\\_MKyB-iw&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D033-2D219-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc_zLXzOFF4yXXVqh03up42hf6wxrZmvHAY&s=soemJzlqwXnLTVtuMWnVI971aHVZJxgPHYc_MKyB-iw&e=>) (10/9, Chow) "Mars is putting on quite a show for skywatchers this month. ... Mars oppositions typically occur every 26 months. Since Earth is closer to the sun, it circles the star two times in roughly the time it takes Mars to complete one orbit. Oppositions can occur at any point in Mars' orbit, according to NASA, but occasionally the alignments happen around the time when Mars is closest to the sun, as is the case this year."

#### How To Watch Mars Shine Bright During Opposition On Tuesday Night

CNET News <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D034-2D2b0-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc\\_zLXzOFF4yXXVqh03up42hf6wxrZmvHAY&s=57zYN9qo2jbcqfXNIEoJtzwofjaVcTOZyE3zf\\_VprQI&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D034-2D2b0-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc_zLXzOFF4yXXVqh03up42hf6wxrZmvHAY&s=57zYN9qo2jbcqfXNIEoJtzwofjaVcTOZyE3zf_VprQI&e=>) (10/11, Kooser) "Forget Halloween. October 2020 is all about the glory of Mars, as the glimmering red planet puts on a show in the night sky. We passed Mars' close approach to Earth on Oct. 6 and now we're looking forward to Tuesday, Oct. 13, when it will be in opposition. ... As NASA says, 'Simply go outside and look up and, depending on your local weather and lighting conditions, you should be able to see Mars.'"

#### The Moon Is The Perfect Spot For SETI

Universe Today <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D035-2Dcf7-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc\\_zLXzOFF4yXXVqh03up42hf6wxrZmvHAY&s=PUWfifiHbORkrAar32AYbGYRH0tvV\\_wi9t30tZOIZg8&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D035-2Dcf7-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc_zLXzOFF4yXXVqh03up42hf6wxrZmvHAY&s=PUWfifiHbORkrAar32AYbGYRH0tvV_wi9t30tZOIZg8&e=>) (10/11, Williams) "In less than four years, NASA plans to land the first woman and the next man on the Moon as part of Project Artemis. This long-awaited return to the Moon is to be followed by the construction of the Lunar Gateway, the Artemis Base Camp, and a program of 'sustainable lunar exploration.' The creation of an enduring human presence on the Moon will also create many opportunities for exciting scientific research."

#### Fossilized Dunes On Mars Offer Clues To The Planet's History

BGR <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D036-2Dd14-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc\\_zLXzOFF4yXXVqh03up42hf6wxrZmvHAY&s=PUWfifiHbORkrAar32AYbGYRH0tvV\\_wi9t30tZOIZg8&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D036-2Dd14-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc_zLXzOFF4yXXVqh03up42hf6wxrZmvHAY&s=PUWfifiHbORkrAar32AYbGYRH0tvV_wi9t30tZOIZg8&e=>)

3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-  
mHkTTiYCEf5ROyus&m=hW8QNVr8hc\_zLXzOFF4yXXVqh03up42hf6wxrZmvHAY&s=EARhT2\_jfOdgAYqMo9FXdFhv71mSEkSgDo7S0SyZJek&e=> (10/11, Wehner) "Images from the Mars Reconnaissance Orbiter show dunes on Mars that have been fossilized and frozen in time. ... Now, new images captured from NASA's Mars Reconnaissance Orbiter have revealed a field full of incredible dunes, but they're unlike any you've likely seen before. You see, these dunes aren't the wispy, flowing kind... at least not anymore."

#### NASA Details How Perseverance Will Hunt For Life Under Mars' Surface

SlashGear <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D037-2D757-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc\\_zLXzOFF4yXXVqh03up42hf6wxrZmvHAY&s=PijHsvqVtBi29re0oGf0o-MMw-Uaub8tUgLTW3JgBk&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D037-2D757-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc_zLXzOFF4yXXVqh03up42hf6wxrZmvHAY&s=PijHsvqVtBi29re0oGf0o-MMw-Uaub8tUgLTW3JgBk&e=>) (10/9, Davies) "NASA has detailed one of its new Mars rover's most unusual instruments, explaining how Perseverance will map beneath the surface of the red planet and just what it's looking for. Set to land on Mars on February 18, 2021, having launched back in June, Perseverance is effectively a mobile survey lab on six wheels. Like Curiosity before it, many of the instruments that Perseverance carries will be designed to give a perspective of Mars from the rover's level. SuperCam, for example, is a suite of instruments designed to identify and do chemical composition analysis of rocks and regolith from a distance, while Mastcam-Z is a stereoscopic camera that gives the rover its distinctive 'head' assembly."

#### Tesla Approaches Mars; NASA Asks About Moon Kits

KABC-TV Los Angeles <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D038-2Db82-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc\\_zLXzOFF4yXXVqh03up42hf6wxrZmvHAY&s=6RIMAJ5mFcg95j9q54feKg3W78h9SETdjhp3hv5K9PA&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D038-2Db82-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc_zLXzOFF4yXXVqh03up42hf6wxrZmvHAY&s=6RIMAJ5mFcg95j9q54feKg3W78h9SETdjhp3hv5K9PA&e=>) (10/9) "The Tesla Roadster has made its first close approach to Mars. SpaceX tweeted the electric sports car with a mannequin inside came within five million miles of the red planet this week."

#### NASA Asks Fans About Moon Kits

KHOU-TV Houston <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D039-2D1e3-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc\\_zLXzOFF4yXXVqh03up42hf6wxrZmvHAY&s=R3WSH-CY-W8CnxpBwLZNDEXE03wnUeHJhC8AzBHGmu0&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D039-2D1e3-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc_zLXzOFF4yXXVqh03up42hf6wxrZmvHAY&s=R3WSH-CY-W8CnxpBwLZNDEXE03wnUeHJhC8AzBHGmu0&e=>) (10/9) "NASA hopes to land the first woman and next man on the moon in 2024. The space agency has just one question for you: What would you pack for a trip to the moon?"

#### Bezos' Blue Origin To Set Launch Record As It Tests NASA Moon Gear Tuesday

CNET News <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D03a-2D96b-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc\\_zLXzOFF4yXXVqh03up42hf6wxrZmvHAY&s=ad6ZsUACsH7KHwInC9bphZLA3hqGC-n3bixb7SP46k&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D03a-2D96b-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc_zLXzOFF4yXXVqh03up42hf6wxrZmvHAY&s=ad6ZsUACsH7KHwInC9bphZLA3hqGC-n3bixb7SP46k&e=>) (10/12, Mack) "Blue Origin took a few weeks to sort out technical issues and wait for



sunnier skies, and now the space company founded and funded by Amazon head Jeff Bezos is ready to make history again with its 13th trip to space. The mission will test some key equipment for NASA using a New Shepard rocket that will be flying for the seventh time, setting a record for rocket recycling.”

#### Jeff Bezos' Rocket Company, Blue Origin, Is About To Launch A Rocket Into Space To Test NASA's New Moon-Landing Technologies

Business Insider <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D03b-2D4c2-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc\\_zLXzOFF4yXXVqh03up42hf6wxrZmvHAY&s=N0cf5AKigx7B9eM42x81RzvdE6bSJYIfBouNdR6B10&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D03b-2D4c2-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc_zLXzOFF4yXXVqh03up42hf6wxrZmvHAY&s=N0cf5AKigx7B9eM42x81RzvdE6bSJYIfBouNdR6B10&e=>) (10/12, McFall-Johnsen) “Jeff Bezos’s rocket company, Blue Origin, is preparing to launch a suite of new high-precision moon-landing technologies into space for NASA, then test their mettle with a touchdown back on Earth. The company’s New Shepard rocket is set to lift off from a launchpad in West Texas at 8:35 a.m. CDT on Tuesday. From there, it should rocket 62 miles into the air — reaching the boundary between Earth’s atmosphere and outer space — to briefly expose the NASA hardware to the space environment. The rocket will also release a capsule containing cargo for other companies, then descend back to Earth.”

#### Blue Origin Will Launch A New Shepard Test Flight Tuesday. Here's How To Watch.

SPACE <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D03c-2D36e-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc\\_zLXzOFF4yXXVqh03up42hf6wxrZmvHAY&s=SlbtA4vityd1ipqc\\_EYwHpJomLHYmWp1A-3PwDmP2E8&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D03c-2D36e-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc_zLXzOFF4yXXVqh03up42hf6wxrZmvHAY&s=SlbtA4vityd1ipqc_EYwHpJomLHYmWp1A-3PwDmP2E8&e=>) (10/12, Wall) “Blue Origin will launch its New Shepard suborbital vehicle on an uncrewed test flight Tuesday morning (Oct. 13), and you can watch the liftoff live. New Shepard is scheduled to launch from Blue Origin’s West Texas site Tuesday at 9:35 a.m. EDT (1335 GMT; 8:35 local Texas time) on a mission known as NS-13. ... One of them is NASA’s Deorbit, Descent and Landing Sensor Demonstration, which will test landing technologies for the space agency’s Artemis program. Artemis aims to land two astronauts on the lunar surface in 2024 and establish a long-term, sustainable human presence on and around the moon by the end of the 2020s.”

#### Russia Says Lunar Gateway 'Too U.S.-Centric'

Aviation Week <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D03d-2Dc5e-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc\\_zLXzOFF4yXXVqh03up42hf6wxrZmvHAY&s=Ey5G5kQa3uqIORmngdGjjbVC A3zA-LExzf0trOJGL4&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D03d-2Dc5e-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc_zLXzOFF4yXXVqh03up42hf6wxrZmvHAY&s=Ey5G5kQa3uqIORmngdGjjbVC A3zA-LExzf0trOJGL4&e=>) (10/12) “The head of Russia’s space agency is raising questions about the oversight and leadership of NASA’s planned lunar-orbiting Gateway, saying more collective decision-making, for example, is needed...”

#### Russia Shuns US Lunar Program, As Space Cooperation Under Threat

Phys (UK) <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D03e-2Da1e-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D03e-2Da1e-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD)

8-  
mHkTTiYCEf5ROyus&m=hW8QNVr8hc\_zLXzOFF4yXXVqh03up42hf6wxrZmvHAY&s=C3HiWoAlz2opT88eZEc3iVg3G4ubGn6IROdpc3nm4KU&e=> (10/12) "Russia is unlikely to participate in the Moon-orbiting station planned by the United States, a Russian official said Monday, marking the probable end of the type of close cooperation seen for two decades on the International Space Station (ISS). The proposed new station, called the Gateway, 'is too US-centric, so to speak,' Dmitry Rogozin, the head of the Russian space agency Roscosmos, said, adding Russia was 'likely to refrain from participating in it on a large scale.'"

#### Cosmonauts Mock Russia's Space Leader On Twitter, A Robot Calls Them Drunks

Ars Technica <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D03f-2D631-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D03f-2D631-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-)

mHkTTiYCEf5ROyus&m=hW8QNVr8hc\_zLXzOFF4yXXVqh03up42hf6wxrZmvHAY&s=PnMA2vA5bYGTvVzKcIWOcLZs\_z5-7x9FNMLdapiRQk&e=> (10/12, Berger) "There's a nasty, increasingly public battle that has engulfed a handful of former cosmonauts, a robot, and the current leader of Russia's space program, Dmitry Rogozin, in controversy. ... For reasons that are not entirely clear, Suraev's criticism of the state of the Russian space program has escalated in recent weeks. For example, one week ago he tweeted an image comparing the interior of the Russian Soyuz vehicle with that of SpaceX's Crew Dragon spacecraft, developed for NASA, with the caption, 'Needless to say, you can see for yourself.'"

#### Space Agency Leaders Call For Greater International Cooperation

UPI <

#### Head Of Russian Space Program Calls For More International Cooperation In NASA's Moon Plans

The Verge <

#### Russia Skeptical About Participating In Lunar Gateway

Space News <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D042-2D679-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D042-2D679-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-)

mHkTTiYCEf5ROyus&m=hW8QNVr8hc\_zLXzOFF4yXXVqh03up42hf6wxrZmvHAY&s=g0GJnz8uz6WvPzAZU3MZyTh7c-O33bD8woeZzzKMR4&e=> (10/12, Foust) "The head of Russia's space agency said that the lunar Gateway, part of NASA's Artemis lunar exploration program, is too 'U.S.-centric' for it to participate in, even though the Gateway leverages the existing International Space Station partnership. During a panel featuring the heads of seven space agencies at the International Astronautical Congress Oct. 12, Dmitry Rogozin, director general of Roscosmos, said it was unlikely that his agency would play a major role in the Gateway despite the planned participation of other ISS partners, including Canada, Europe and Japan."

Should NASA Get Multiyear Funding To Give It Stability?

Houston Chronicle <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D043-2D820-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D043-2D820-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc_zLXzOFF4yXXVqh03up42hf6wxrZmvHAY&s=4HZvp3JzAUxwKQh5PHovluJbJGm5Ckmy9XGUtNZMSo0&e=>)> (10/12, Leinfelder) "NASA, like the rest of the federal government, entered fiscal year 2021 without a new budget. And this leaves a giant question: How much money will it receive to fund the lunar landing system critical for lowering astronauts to the moon? President Donald Trump in February proposed \$3.4 billion for NASA to work with commercial companies to develop these human landing systems. But the U.S. House of Representatives proposed \$628.2 million in July, and the Senate has yet to weigh in."

Blue Origin Plans Third Try To Launch New Shepard Rocket Mission

UPI <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D044-2D19c-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D044-2D19c-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc_zLXzOFF4yXXVqh03up42hf6wxrZmvHAY&s=lhhGivti6h3l63hSjLABsLsoKd0omRVotM6mNwulKhA&e=>)> (10/13) "Blue Origin plans to try again Tuesday morning to launch a NASA moon landing experiment aboard the company's reusable New Shepard rocket from Texas. Liftoff is scheduled for 9:35 a.m. EDT at the company's launch facilities about 150 miles east of El Paso. The company postponed the launch twice before – once due to cloudy weather and again the next day due to a power supply problem on board the rocket."

Solar System and Beyond

Fake Asteroid? NASA Expert IDs Mystery Object As Old Rocket

Associated Press <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D045-2Dd74-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D045-2Dd74-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc_zLXzOFF4yXXVqh03up42hf6wxrZmvHAY&s=zgnvmLS1lleceSurgm8v83rM6glEsErvOnftlOpHwuo&e=>)> (10/11, Dunn) "The jig may be up for an 'asteroid' that's expected to get nabbed by Earth's gravity and become a mini moon next month. Instead of a cosmic rock, the newly discovered object appears to be an old rocket from a failed moon-landing mission 54 years ago that's finally making its way back home, according to NASA's leading asteroid expert. Observations should help nail its identity."

NASA Rocket Launched To The Moon In 1966 'Hurtles Back Into View From Earth'

Daily Mirror (UK) <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D046-2D46b-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc\\_zLXzOFf4yXXVqh03up42hf6wrxrZmvHAY&s=22f9cPV7XzBY0asDE-RRFzVb5OIESkpZLhQF0PqXmzw&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D046-2D46b-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc_zLXzOFf4yXXVqh03up42hf6wrxrZmvHAY&s=22f9cPV7XzBY0asDE-RRFzVb5OIESkpZLhQF0PqXmzw&e=>) (10/11, Merrifield) "A NASA rocket part the size of a bus appears to be hurtling back towards Earth at 1,500mph, over 54 years after being launched. A team at the space programme agency had attempted a Moon landing in 1966, which saw the rocket swept into the Sun's orbit after releasing its lander, which then crashed thanks to a thruster malfunction."

#### What Scientists Thought Was An Asteroid May Be An Old Rocket

SlashGear <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D047-2D1d3-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc\\_zLXzOFf4yXXVqh03up42hf6wrxrZmvHAY&s=9PGqHfR2tFwNmd5Uk6qqM3Gn4wUoTAzIDYbDeIV0Wig&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D047-2D1d3-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc_zLXzOFf4yXXVqh03up42hf6wrxrZmvHAY&s=9PGqHfR2tFwNmd5Uk6qqM3Gn4wUoTAzIDYbDeIV0Wig&e=>) (10/11, McGlaun) "NASA asteroid expert Paul Chodas has discovered something very interesting about an asteroid that was expected to get stuck in orbit around the earth next month. It turns out the asteroid is not an asteroid at all. Rather, he thinks it's an old rocket from a failed moon landing decades ago. That failed mission happened 54 years ago, and the rocket is just now making its way back to earth. Scientists believe they will be able to identify the rocket linking it to a specific mission in future observations."

#### Boulders On Asteroid Bennu Shed New Light On The Space Rock's History

SPACE <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D048-2D6f3-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc\\_zLXzOFf4yXXVqh03up42hf6wrxrZmvHAY&s=CXdN2YUg2OYqbnPrDx3ADMofZ3KRsjuyA9wGwDHN52w&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D048-2D6f3-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc_zLXzOFf4yXXVqh03up42hf6wrxrZmvHAY&s=CXdN2YUg2OYqbnPrDx3ADMofZ3KRsjuyA9wGwDHN52w&e=>) (10/10, Redd) "The near-Earth asteroid Bennu continues to reveal its secrets to NASA's OSIRIS-REx mission, which has been orbiting the space rock for nearly two years. New research reveals veins of carbonite materials in Bennu's boulders, as well as signs of organic minerals widespread across its surface. The variety of rock compositions on the asteroid's surface, the gravity of the asteroid, and the unbalanced, diamond-shaped structure of the asteroid's body suggest that Bennu formed after the collision of two parent asteroids, the study found."

#### NASA Cases Asteroid Bennu Ahead Of Snatch And Grab

Business Insider India <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D049-2D041-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc\\_zLXzOFf4yXXVqh03up42hf6wrxrZmvHAY&s=X4fCtX3eAL2tNme0BkWcB8jRq7jIPIV9oSwi-GaU6Fs&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D049-2D041-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc_zLXzOFf4yXXVqh03up42hf6wrxrZmvHAY&s=X4fCtX3eAL2tNme0BkWcB8jRq7jIPIV9oSwi-GaU6Fs&e=>) (10/9, Gill) "The National Aeronautics and Space Administration (NASA) has uncovered six new facts about Asteroid Bennu ahead of its snatch and grab on October 20. The uneven gravity around the asteroid suggests that there may be a massive void under the surface. What does this mean?"

#### NASA Says Bennu Data Hints At An Unprecedented Asteroid Sample

SlashGear <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D04a-2D10e-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D04a-2D10e-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-)  
mHkTTiYCEf5ROyus&m=hW8QNVr8hc\_zLXzOFF4yXXVqh03up42hf6wxrZmvHAY&s=6AdTdK6fRQf75aZ3rNjdANYXruHGwOXzGFht1LzSjr0&e=> (10/12, Roston) "Despite the pandemic, NASA is gearing up to conduct an asteroid sample mission later this month, an event that will — assuming it is successful — return some fine gravel from the asteroid Bennu to researchers on Earth. The space agency has spent many months studying the asteroid and collecting data, as well as several months scouting out the best locations from which to pluck the sample. In an update on the matter, NASA said a handful of newly published studies on the asteroid hint at exciting future discoveries."

#### Scientists Spot Hints Of Flowing Water On Asteroid's Surface

BGR <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D04b-2D6dd-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D04b-2D6dd-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-)  
mHkTTiYCEf5ROyus&m=hW8QNVr8hc\_zLXzOFF4yXXVqh03up42hf6wxrZmvHAY&s=PlkthmC\_BCu3pJrQ9yeDGW57SIU0Q9ndjBh25irnmyl&e=> (10/12, Wehner) "The asteroid known as Bennu has revealed some tantalizing secrets to NASA's OSIRIS-REx spacecraft. Some rocks and surface features of the asteroid appear to indicate that water once flowed on its surface or that of its parent asteroid. NASA's asteroid probe will begin its return journey to Earth in December and arrive back to Earth in 2023."

#### New Studies Detail Complex History Of Near-Earth Asteroid Bennu

Sci-News <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D04c-2De8d-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D04c-2De8d-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-)  
mHkTTiYCEf5ROyus&m=hW8QNVr8hc\_zLXzOFF4yXXVqh03up42hf6wxrZmvHAY&s=csX44EFFEXI08B1kMESq3ibBOKSmKK-IdVtrSyhnejY&e=> (10/9) "NASA's OSIRIS-REx (Origins, Spectral Interpretation, Resource Identification, Security, Regolith Explorer) mission to the near-Earth asteroid Bennu is designed to return a carbon-rich sample of the asteroid to Earth. This 500-m-diameter body was chosen as the mission target due to its spectral similarity to primitive and organic-rich carbonaceous chondrite meteorites. In a series of six papers published this week in the journal Science and the journal Science Advances, a team of scientists on the OSIRIS-REx mission presents new findings on the surface material, geological characteristics and the dynamic history of Bennu."

#### NASA Drops Joyful Jupiter Flyover Video From Juno's Perspective

CNET News <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D04d-2Df18-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D04d-2Df18-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-)  
mHkTTiYCEf5ROyus&m=hW8QNVr8hc\_zLXzOFF4yXXVqh03up42hf6wxrZmvHAY&s=F4P7gflMur3PK1UO5k1R1S2wOdSh8SQ4G3QwOIH5Zz8&e=> (10/9, Kooser) "No Earth roller coaster could possibly compare to a 130,000 mph (209,000 kph) flyover of Jupiter. That's what NASA's Juno spacecraft experienced in June with a close pass of the gas giant. A striking new NASA video re-creates the scenery from this thrilling space adventure."

#### NASA Scientists Study Sunspots To Help Understand Major Flares

SlashGear <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-)

3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D04e-2D49d-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc\_zLXzOFF4yXXVqh03up42hf6wxrZmvHAY&s=a3lbMs0cb3jH1cdH5LwwiyftmFav7Gka\_K1Ku1vwAo0&e=> (10/9, McGlaun) "A new study published by NASA scientists looks at sunspots, darkened patches on the sun caused by its magnetic field. While NASA has spacecraft that can observe sunspots more closely, the researchers studied them at low resolution as if they were trillions of miles away. The team was going for a simulated view of distant stars to help them better understand stellar activity and conditions for life on planets orbiting distant stars."

#### Get Lost In Hubble Telescope's Breathtaking View Of Stars Being Born

CNET News <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D04f-2D29a-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc\\_zLXzOFF4yXXVqh03up42hf6wxrZmvHAY&s=ALGUluVe77jbYAW-jhga7lkAA\\_uamXUTum77F92xZ-4&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D04f-2D29a-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc_zLXzOFF4yXXVqh03up42hf6wxrZmvHAY&s=ALGUluVe77jbYAW-jhga7lkAA_uamXUTum77F92xZ-4&e=>)> (10/9, Kooser) "I don't know about you, but I'm just about ready to pack my gear, crawl into a cryogenic sleep pod and take a spaceship to some other galaxy. I've got my eyes on a real looker: the Great Barred Spiral Galaxy, also less romantically known as NGC 1365. The Hubble Space Telescope, a joint project from NASA and the European Space Agency (ESA), captured a stunning portrait of NGC 1365, a faraway place where stars form."

#### How To Watch October's Orionids Meteor Shower — One Of The Best Of The Year

CBS News <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D050-2D2f1-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc\\_zLXzOFF4yXXVqh03up42hf6wxrZmvHAY&s=6LqRwiaPmkgcrkv\\_Mi51x44zSr\\_aVBBz\\_TiEvHlwsbo&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D050-2D2f1-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc_zLXzOFF4yXXVqh03up42hf6wxrZmvHAY&s=6LqRwiaPmkgcrkv_Mi51x44zSr_aVBBz_TiEvHlwsbo&e=>)> (10/10, Lewis) "After a short hiatus from meteor activity, the annual Orionids meteor shower is back to bring shooting stars to the night sky. It's visible from about October 2 to November 7, as Earth passes through the debris from Halley's Comet, but peaks on October 21. And it's not the only exciting celestial activity this month — October features two full moons, the second of which falls on Halloween, and the closest our planet will be to Mars until 2035. What are the Orionids? The Orionids, which light up the night sky every October, is considered to be one of the most beautiful meteor showers of the year, according to NASA."

#### NASA Scientists Outline Interesting Facts About Asteroid Bennu

SlashGear <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D051-2D57f-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc\\_zLXzOFF4yXXVqh03up42hf6wxrZmvHAY&s=Kw\\_Zs3mth\\_-v6LCslj17vW8MV4ZqtOvizomEH8niuTY&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D051-2D57f-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc_zLXzOFF4yXXVqh03up42hf6wxrZmvHAY&s=Kw_Zs3mth_-v6LCslj17vW8MV4ZqtOvizomEH8niuTY&e=>)> (10/9, McGlaun) "NASA spacecraft OSIRIS-REx is currently gearing up to begin its sample return mission. Recently, scientists on the mission presented new findings on asteroid Bennu's surface material, geological characteristics, and dynamic history. Researchers have noted they suspect the sample delivered back to earth from the asteroid could be unlike anything we have in the meteorite collection on Earth. The discoveries the scientists are talking about have completed the mission pre-sample collection science requirements and provide insights into the asteroid that will be studied for generations to come."

#### NASA, JAXA Look To Sun To Understand Life In Other Star Systems

NASA Space Flight <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D052-2D0af-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc\\_zLXzOFf4yXXVqh03up42hf6wrxZmvHAY&s=tgFyUtCSJs0oWnp1dwP5mtps71MmqJGdUHwYYRGA6E&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D052-2D0af-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc_zLXzOFf4yXXVqh03up42hf6wrxZmvHAY&s=tgFyUtCSJs0oWnp1dwP5mtps71MmqJGdUHwYYRGA6E&e=>) (10/9, Gebhardt) “The Sun is both creator and destroyer. The one that can foster life one second and eliminate it the next. Most people are familiar with the harmful and hazardous effects the Sun can have to life on Earth if solar flares and Coronal Mass Ejections, and their associated radiation, are delivered in just the right way and at high enough intensities. ... ‘Using solar observing satellites, we can resolve signatures on the surface [of the Sun] 100 miles wide,’ said Dr. Vladimir Airapetian, co-author on the study and astrophysicist at NASA’s Goddard Space Flight Center.”

We Watched As A Nearby Star Was Sucked In And ‘Spaghettified’ By A Monster Black Hole, Say Scientists

Forbes <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D053-2D950-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc\\_zLXzOFf4yXXVqh03up42hf6wrxZmvHAY&s=DnD1o2Q7a-nzL9DLrBUIN05p6RzLwAQNwiIX3JSH0&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D053-2D950-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc_zLXzOFf4yXXVqh03up42hf6wrxZmvHAY&s=DnD1o2Q7a-nzL9DLrBUIN05p6RzLwAQNwiIX3JSH0&e=>) (10/12, Carter) “A star in the act of being devoured by a supermassive black hole. It’s the latest incredible cosmic phenomenon tracked and traced by astronomers using giant telescopes. ... ‘Because we caught it early we could actually see the curtain of dust and debris being drawn up as the black hole launched a powerful outflow of material with velocities up to 10,000 km/s,’ said Kate Alexander, NASA Einstein Fellow at Northwestern University in the US.”

Astronomers Witness ‘Spaghettification’ Of Star Shredded By A Black Hole

CNN <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D054-2D6d6-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc\\_zLXzOFf4yXXVqh03up42hf6wrxZmvHAY&s=TQzhAprE-l9zJ1otnD2uhnhKNjzNWWL0Ecm27w1fnY&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D054-2D6d6-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc_zLXzOFf4yXXVqh03up42hf6wrxZmvHAY&s=TQzhAprE-l9zJ1otnD2uhnhKNjzNWWL0Ecm27w1fnY&e=>) (10/12, Strickland) “A black hole enjoyed one stellar spaghetti dinner and astronomers were able to witness the event from 215 million light-years away in a spiral galaxy in the Eridanus constellation. ... ‘Because we caught it early, we could actually see the curtain of dust and debris being drawn up as the black hole launched a powerful outflow of material with velocities up to 10,000 km/s,’ said Kate Alexander, study coauthor and NASA Einstein fellow at Northwestern University, in a statement.”

Space Tech

Inside Sierra Nevada Corp’s Space Plans, From The Reusable ‘Dream Chaser’ To Inflatable Habitats

CNBC <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D055-2D73e-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc\\_zLXzOFf4yXXVqh03up42hf6wrxZmvHAY&s=JeePvR13SecbgiWmydCj579eXJ\\_cNe-Wy6nLn0P4-Y4&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D055-2D73e-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc_zLXzOFf4yXXVqh03up42hf6wrxZmvHAY&s=JeePvR13SecbgiWmydCj579eXJ_cNe-Wy6nLn0P4-Y4&e=>) (10/10, Sheetz) “Sierra Nevada Corporation is best known as a private aerospace and national security contractor – but the company is investing heavily in its space systems division, especially as it sees NASA and other companies building infrastructure in orbit. ‘Our view of the future is a vibrant, commercial low Earth orbit economy,’ Steve Lindsey, SNC’s senior vice president of strategy space systems, told CNBC.”

## Small Satellites' Growing Role In Earth Science

Space News <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D056-2Ddb1-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc\\_zLXzOFf4yXXVqh03up42hf6wrxZmvHAY&s=ihf-7FOZ9Umn7O2CzZuwEG23fbac21\\_SbKMBcksLBbE&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D056-2Ddb1-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc_zLXzOFf4yXXVqh03up42hf6wrxZmvHAY&s=ihf-7FOZ9Umn7O2CzZuwEG23fbac21_SbKMBcksLBbE&e=>) (10/10, Foust) "For the last several years at the Small Satellite Conference, the American Institute of Aeronautics and Astronautics (AIAA) has held a 'Small Satellite Mission of the Year' competition. An AIAA committee gathers nominations for smallsats that have launched in the last year and selects a group of finalists announced as the conference gets underway, allowing conference attendees and others to vote for their favorite. At the end of the conference, the AIAA committee announces the winner. ... His office also works with others at NASA involved with small satellites, sharing information on smallsat components and suppliers."

## U.S. Edges Closer To Nuclear Thermal Rocket Vision

Aviation Week <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D057-2D5ff-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc\\_zLXzOFf4yXXVqh03up42hf6wrxZmvHAY&s=Q8KMps8MDtCh6tv7KY6-DTfhdTGiWYw1mK7MMpqL\\_hs&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D057-2D5ff-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc_zLXzOFf4yXXVqh03up42hf6wrxZmvHAY&s=Q8KMps8MDtCh6tv7KY6-DTfhdTGiWYw1mK7MMpqL_hs&e=>) (10/9) "As NASA continues feasibility studies into nuclear propulsion for deep space missions, DARPA has awarded an initial contract to help pave the way toward possible orbital tests of a..."

## NASA's James Webb Passes Enormous Test, On Track For October 2021 Launch

Forbes <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D058-2Ddf7-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc\\_zLXzOFf4yXXVqh03up42hf6wrxZmvHAY&s=xncf8\\_w\\_faEn5lt8O8eMHILt8MGoFJDIFKbqdBZA02I&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D058-2Ddf7-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc_zLXzOFf4yXXVqh03up42hf6wrxZmvHAY&s=xncf8_w_faEn5lt8O8eMHILt8MGoFJDIFKbqdBZA02I&e=>) (10/12, Siegel) "Despite numerous delays, funding crises, and technical challenges, NASA's James Webb Space Telescope is almost ready. The science instruments aboard the ISIM module being lowered and installed into the main assembly of JWST in 2016. These instruments have been complete for nearly a decade, and have passed all of their rigorous tests. They, along with the rest of James Webb, are ready for launch."

## Is Venus A Living Hell? Conversation With Astrobiologist David Grinspoon

Space News <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D059-2D6c7-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc\\_zLXzOFf4yXXVqh03up42hf6wrxZmvHAY&s=N4Fdwgld3p8HLmdBs4gtkZsr4UMIAULJVYFzFATLX-U&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D059-2D6c7-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc_zLXzOFf4yXXVqh03up42hf6wrxZmvHAY&s=N4Fdwgld3p8HLmdBs4gtkZsr4UMIAULJVYFzFATLX-U&e=>) (10/12, David) "Over the years, space missions to hellish Venus have been few and far between. But the idea of intensely studying that nearby cloud-veiled globe has just received a renewed lease on life, quite literally. ... NASA does have two proposed Discovery missions for Venus under review, the VERITAS and DAVINCI+. Both are really good missions and in full disclosure, I'm on the DAVINCI+ proposal. Both fill in huge gaps in our understanding of terrestrial planets and Venus. NASA could select both of them as they are very complementary to one another. Then we'd have a little bit of a Venus program and that's long overdue."

Various



## 10 Of NASA's Most Out-Of-This-World Illustrations

Popular Science <[https://urldefense.proofpoint.com/v2/url?u=https-](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D05a-2Dfba-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-)

3A\_\_mailview.bulletinintelligence.com\_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D05a-2Dfba-26t-

3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-

mHkTTiYCEf5ROyus&m=hW8QNVr8hc\_zLXzOFF4yXXVqh03up42hf6wxrZmvHAY&s=TCoBeLSZDCPgy7Are6CjB2RZb5HyGaYLGTVdHdJ6mmU&e=> (10/9, Watson) "Artists often think outside the box. But when you're hired by NASA, you have to literally think outside of this world. Over the last sixty-or-so years, in addition to its unprecedented scientific discoveries, NASA has also published some striking art pieces that portray ideas that range from the sci-fi proposals of the 50s and 60s to artistic recreations of real space adventures of the modern era."

## Cory Gardner's 'Big Idea': Keep Pace With China In The Space Race And Prevent It From Stealing American IP

Fox News <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D05b-2Ddeb4-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-)

3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D05b-2Ddeb4-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-

mHkTTiYCEf5ROyus&m=hW8QNVr8hc\_zLXzOFF4yXXVqh03up42hf6wxrZmvHAY&s=2hqHBBSA2qyFTIz7zpP6f2MrcWuAyMERxNWtJwrBvIU&e=> (10/7, Givas) "The Big Idea is a series that asks top lawmakers and figures to discuss their moonshot – what's the one proposal, if politics and polls and even price was not an issue, they'd implement to change the country for the better? ... They are circumventing U.S. exclusionary space policy. They're getting around it by collaborating with firms that maintain close relationships with NASA."

## Scientists Call For Serious Study Of 'Unidentified Aerial Phenomena'

SPACE <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D05c-2D439-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-)

3D2020101302nasa-26r-3Demail-2D19f1-26l-3D05c-2D439-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-

mHkTTiYCEf5ROyus&m=hW8QNVr8hc\_zLXzOFF4yXXVqh03up42hf6wxrZmvHAY&s=alDjtBOtKrbVd1CUxuptQb2hLkuplI8i7M6VIVer-Q4&e=> (10/12, David) "The U.S. Navy recently admitted that, indeed, strangely behaving objects caught on video by jet pilots over the years are genuine head-scratchers. There are eyewitness accounts not only from pilots but from radar operators and technicians, too. ... Working with Ailleris to employ satellite imagery to detect and monitor UAPs is Kevin Knuth, a former scientist with NASA's Ames Research Center in California's Silicon Valley. He is now an associate professor of physics at the University at Albany in New York."

## The Space Review: The Three Administrators

Space Review <[https://urldefense.proofpoint.com/v2/url?u=https-](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D05d-2D543-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-)

3A\_\_mailview.bulletinintelligence.com\_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D05d-2D543-26t-

3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-

mHkTTiYCEf5ROyus&m=hW8QNVr8hc\_zLXzOFF4yXXVqh03up42hf6wxrZmvHAY&s=xsACIL2mbKV6atEYfrEjNUEczbB2n2PIGs7BxOAV1pM&e=> (10/12, Foust) "NASA administrators get plenty of advice, solicited and unsolicited, while on the job. Politicians, executives, scientists, and others are more than willing to weigh in on what the agency's leader should do. The best advice, though, might come from the people who previously held the job—if they're willing to give it. 'I just have full confidence in the NASA team that they're going to do the right thing. I don't think they need any help from me in terms of telling them where they ought to go,' said Dan Goldin, who served as NASA administrator from

1992 to 2001.”

Other

Long March 3B Lofts Gaofen-13

NASA Space Flight <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D05e-2D20d-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc\\_zLXzOFF4yXXVqh03up42hf6wxrZmvHAY&s=DRGvBTjhyH7pe7Ssw4R6piTYs7MVfZpAV4bpSmYUJh8&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D05e-2D20d-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc_zLXzOFF4yXXVqh03up42hf6wxrZmvHAY&s=DRGvBTjhyH7pe7Ssw4R6piTYs7MVfZpAV4bpSmYUJh8&e=>) (10/11, Barbosa) “China launched a new geostationary remote sensing satellite from the renovated Xichang Satellite Launch Center on Sunday. A Long March-3B/G3 (Y3) – Chang Zheng-3B/G3 – rocket orbited the Gaofen-13 satellite, lifting off from the LC2 pad at 16:57 UTC. The new satellite, possibly an improved version of the CAST developed Gaofen-4 orbited on December 28, 2015, is being designated as a high-orbit optical remote sensing satellite to be mainly used for land survey, crop yield estimation, environmental management, weather warning and forecast, and comprehensive disaster prevention and mitigation, providing information services for national economic development.”

SN8 Receiving Raptors As Prelude To Advanced Starship Testing

NASA Space Flight <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D05f-2Dc79-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc\\_zLXzOFF4yXXVqh03up42hf6wxrZmvHAY&s=IPfxA2Y6MVC2p8D-3BuybTUE4zLU1\\_4xf0inGm73LZA&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D05f-2Dc79-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc_zLXzOFF4yXXVqh03up42hf6wxrZmvHAY&s=IPfxA2Y6MVC2p8D-3BuybTUE4zLU1_4xf0inGm73LZA&e=>) (10/11, Bergin) “Installation of the three Raptors that will power Starship SN8’s unique test flight began on Sunday at SpaceX Boca Chica. The brand new engines will be the focal point of a test program that will involve at least two Static Fire tests ahead of a test flight to 50,000 feet. Starship SN8: SN8 underwent a total of three cryo proofing tests during the week. The first was deemed acceptable per the test parameters, but a small leak ‘opened up near the engine mounts, possibly due to differential shrinking,’ according to SpaceX Chief Designer and CEO Elon Musk.”

SpaceX’s Starship Successfully Passes Cryo Testing

redOrbit <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D060-2D6f3-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc\\_zLXzOFF4yXXVqh03up42hf6wxrZmvHAY&s=qI5juzQNhxBfbytTV1hyMThIGg1CXrNOseABpNM-msA&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D060-2D6f3-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc_zLXzOFF4yXXVqh03up42hf6wxrZmvHAY&s=qI5juzQNhxBfbytTV1hyMThIGg1CXrNOseABpNM-msA&e=>) (10/10) “According to SpaceX CEO Elon Musk, the Starship high-altitude model SN8 has successfully passed cryo testing. The tests were meant to determine how the fuel tanks and associated hardware would hold up to the super-cold temperatures that they will have to endure when filled with super-chilled liquid rocket fuel.”

Rocket Report: China Unveils Big Rocket Plans, SpaceX’s “Secret” Launch

Ars Technica <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D061-2D0da-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D061-2D0da-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD)

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T\_oXcOPPyfUGH2aSyM&e=> (10/9, Berger) "Virgin Orbit's rocket comes at a high price. As Virgin Orbit drives toward  
its second launch attempt late in 2020, its expenses are adding up. Started in 2011 by Sir Richard Branson as an  
offshoot of his Virgin Galactic space business, Virgin Orbit has not revealed how much it has spent to date. But  
industry officials estimate it has expended between \$500 million to \$700 million developing LauncherOne and the  
infrastructure to support it."

#### UAE Will Launch Its First Moon Rover In 2024

SPACE <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D062-2D60a-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D062-2D60a-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-)

mHkTTiYCEf5ROyus&m=hW8QNVr8hc\_zLXzOFF4yXXVqh03up42hf6wxrZmvHAY&s=cp5uNHYFU9x7XnfUwX2cKPC  
bGoC\_j2IYTDkiclevyRo&e=> (10/9, Bartels) "The United Arab Emirates has joined the roll-call of nations looking to  
visit the moon, with a lunar rover named Rashid scheduled to launch in 2024. The announcement comes while the  
nation's first mission beyond Earth orbit, a Mars spacecraft called Hope, is still trekking out to the Red Planet. That  
mission is a science-minded endeavor meant to study how Mars' climate and atmosphere work from orbit. The new  
lunar mission is of a different flavor, focused more on developing technologies and evaluating concerns before crewed  
and longer-duration exploration missions leave Earth and land on other worlds."

#### Exolaunch Signs Pact With SpaceX And Scouts U.S. Location

Space News <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D063-2De6f-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc\\_zLXzOFF4yXXVqh03up42hf6wxrZmvHAY&s=ZY54Ayw3zP-Bx8fer7eZQ4PVgohe1zAQScN-rJePJqA&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D063-2De6f-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc_zLXzOFF4yXXVqh03up42hf6wxrZmvHAY&s=ZY54Ayw3zP-Bx8fer7eZQ4PVgohe1zAQScN-rJePJqA&e=>) (10/9, Werner) "Exolaunch signed an agreement to secure rides for  
dozens of small satellites on SpaceX rideshare missions scheduled to launch later this year and in 2021. Under the  
agreement announced Oct. 8, Germany's Exolaunch plans to integrate 30 U.S. and European cubesats and  
microsatellites on Falcon 9 rideshare flights to sun-synchronous orbit scheduled to launch in December. Exolaunch  
plans to integrate roughly the same number of satellites on a SpaceX rideshare flight in mid-2021."

#### The US Military And Elon Musk Are Planning A 7,500-mph Rocket That Can Deliver Weapons Anywhere In The World In An Hour

Business Insider <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D064-2Dab6-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D064-2Dab6-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-)

mHkTTiYCEf5ROyus&m=hW8QNVr8hc\_zLXzOFF4yXXVqh03up42hf6wxrZmvHAY&s=VbMIFiNdJYZQyFC85K6Nwla  
iM9vHnUrBpVaUa7BpU4&e=> (10/9, Duffy) "Elon Musk's SpaceX and the US military plan to build a rocket capable of  
delivering 80 metric tons of cargo anywhere in the world in 60 minutes. Under a newly agreed contract, SpaceX will  
assess the costs and technical challenges of the project, while initial tests are expected in 2021, Gen. Stephen Lyons,  
the head of US Transportation Command, said Wednesday at a virtual conference."

#### Channing Tatum To Produce HBO Series About Elon Musk Titled 'SpaceX'

Fox News <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-)

3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D065-2D152-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc\_zLXzOFF4yXXVqh03up42hf6wrxZmvHAY&s=DY-gciQdjZt1Vy3q6sJi3898paxEKf3cd8Rxi1-1dkg&e=> (10/12, Ushe) "Channing Tatum is an executive producer for an upcoming HBO series centered around Elon Musk's company SpaceX. The six-episode series titled 'SpaceX' will focus on the privately funded space exploration company and what led to the SpaceX launch of their Falcon 9 rocket to the International Space Station in May."

#### Remote Tribe Says SpaceX Starlink "Catapulted" Them Into 21st Century

Ars Technica <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D066-2Ddb9-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc\\_zLXzOFF4yXXVqh03up42hf6wrxZmvHAY&s=F1yc6tB4imVSz2ASx0\\_Bk9uErkw6M-IHhOhZaqaL4dl&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D066-2Ddb9-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc_zLXzOFF4yXXVqh03up42hf6wrxZmvHAY&s=F1yc6tB4imVSz2ASx0_Bk9uErkw6M-IHhOhZaqaL4dl&e=>) (10/12, Brodtkin) "A remote tribe in Washington state is one of the first users of SpaceX's Starlink broadband, having been connected recently after years of struggling to get modern Internet service. 'We're very remote,' said Melvinjohn Ashue, vice chairman of the Hoh Tribe's governing committee."

#### ESA's Force-Feedback Rover Controlled From A Nation Away

Phys (UK) <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D067-2D41a-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc\\_zLXzOFF4yXXVqh03up42hf6wrxZmvHAY&s=FQixNgctf4ZzqtmwZBD\\_4PjldrHEURYLiEOttkGG0wE&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D067-2D41a-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc_zLXzOFF4yXXVqh03up42hf6wrxZmvHAY&s=FQixNgctf4ZzqtmwZBD_4PjldrHEURYLiEOttkGG0wE&e=>) (10/12) "A controller in Germany operated ESA's gripper-equipped Interact rover around a simulated moonscape at the Agency's technical heart in the Netherlands, to practice retrieving geological samples. At the same time a smaller Germany-based rover interacted with ESA's rover as if together at the same site—in a dress rehearsal for a robotic test campaign to the Moon-like volcanic slopes of Mount Etna, scheduled for next year."

#### A Well-Timed Venus Flyby Looks For Signs Of Life In The Clouds

NBC News <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D068-2D45c-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc\\_zLXzOFF4yXXVqh03up42hf6wrxZmvHAY&s=fsblZ9xTzk5fUJyJ3-z74RxBOSTt62jlkmjtn9Wflk&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D068-2D45c-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc_zLXzOFF4yXXVqh03up42hf6wrxZmvHAY&s=fsblZ9xTzk5fUJyJ3-z74RxBOSTt62jlkmjtn9Wflk&e=>) (10/12, Metcalfe) "Just weeks after the reported discovery of phosphine on Venus – a potential sign of life in the clouds above its hellish surface – a robot spacecraft will study the planet as it swings by on its exploration of the solar system. The BepiColombo space probe's flyby above Venus at two minutes before midnight ET Wednesday is a coincidence."

#### China's Tianwen-1 Mars Probe Snaps Epic Deep-Space Selfie (Photos)

SPACE <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D069-2Dec4-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc\\_zLXzOFF4yXXVqh03up42hf6wrxZmvHAY&s=JCOqOkk2hSOfYixC3bjQr-1-Lfg67o-A31O7SaZ8Nxo&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020101302nasa-26r-3Demail-2D19f1-26l-3D069-2Dec4-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=hW8QNVr8hc_zLXzOFF4yXXVqh03up42hf6wrxZmvHAY&s=JCOqOkk2hSOfYixC3bjQr-1-Lfg67o-A31O7SaZ8Nxo&e=>) (10/12, Jones) "China's Tianwen-1 spacecraft has beamed home some deep-space selfies snapped by a small camera jettisoned during its journey to Mars. A small camera with wide-angle lenses on both sides was ejected from the outside of the spacecraft in the depths of outer space. The small camera took one

image every second and sent the data to Tianwen-1, which then transmitted the images to Earth.”

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### Editor's Note

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<[### Today's Table of Contents](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020042202nasa-26r-3Demail-2Db214-26l-3D002-2Db7b-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=DQZXYIp_5duSjfsNQrbEsVXyPB-3znNT1zuOSE5QSDQ&s=zWzacd80_GTgVQ74lzl_uck0qc0lyFxlFhvRwHiuIWws&e=>. A NASA email address is required.</a></p></div><div data-bbox=)

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#### Thank You For Flying SpaceX

Wall Street Journal <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020042202nasa-26r-3Demail-2Db214-26l-3D003-2Db8e-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=DQZXYlp\\_5duSjfsNQrbEsVXyPB-3znNT1zuOSE5QSDQ&s=3mhl4FR8J5UZ0reqqTO1swo4dr60YZLdSL7w1Vb1Vt4&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020042202nasa-26r-3Demail-2Db214-26l-3D003-2Db8e-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=DQZXYlp_5duSjfsNQrbEsVXyPB-3znNT1zuOSE5QSDQ&s=3mhl4FR8J5UZ0reqqTO1swo4dr60YZLdSL7w1Vb1Vt4&e=>)> (4/21) editorializes that a NASA mission on May 27 will launch two astronauts on board a SpaceX crew capsule atop a SpaceX rocket to the international space station. The Journal says the mission, the first one carrying astronauts launched from American soil in nearly ten years, could be a monumental step for private spaceflight.

#### This Robot Is Helping Astronauts On The Space Station With Tasks, Stress And Isolation

CNN <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020042202nasa-26r-3Demail-2Db214-26l-3D003-2Db8e-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=DQZXYlp\\_5duSjfsNQrbEsVXyPB-3znNT1zuOSE5QSDQ&s=3mhl4FR8J5UZ0reqqTO1swo4dr60YZLdSL7w1Vb1Vt4&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020042202nasa-26r-3Demail-2Db214-26l-3D003-2Db8e-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=DQZXYlp_5duSjfsNQrbEsVXyPB-3znNT1zuOSE5QSDQ&s=3mhl4FR8J5UZ0reqqTO1swo4dr60YZLdSL7w1Vb1Vt4&e=>)>

3D2020042202nasa-26r-3Demail-2Db214-26l-3D004-2Db72-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=DQZXYlp\_5duSjfsNQrbEsVXyPB-3znNT1zuOSE5QSDQ&s=kn\_oQylrQotfkZ7gvEmDp-yy8GJNPJQ5Ugepkul7n4c&e=> (4/21, Strickland) "Along for the ride with the astronauts on the International Space Station is a bit of a talking head called CIMON-2. ... When Parmitano asked him to share a fact about space, CIMON-2 said, 'The Apollo crew did not have any life insurance.' In a video shared by the German Aerospace Center, Parmitano and NASA astronauts Andrew Morgan and Jessica Meir, laughed in surprise."

#### Lyrid Meteor Shower 2020: Watch It Peak In Night Skies

New York Times <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020042202nasa-26r-3Demail-2Db214-26l-3D005-2D1b4-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=DQZXYlp\\_5duSjfsNQrbEsVXyPB-3znNT1zuOSE5QSDQ&s=Y8qi1AAjtriTQD8b-tH2E5dkLY0Bn9eHrl2xf\\_sEFVk&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020042202nasa-26r-3Demail-2Db214-26l-3D005-2D1b4-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=DQZXYlp_5duSjfsNQrbEsVXyPB-3znNT1zuOSE5QSDQ&s=Y8qi1AAjtriTQD8b-tH2E5dkLY0Bn9eHrl2xf_sEFVk&e=>)> (4/21, St. Fleur) "All year long as Earth revolves around the sun, it passes through streams of cosmic debris. The resulting meteor showers can light up night skies from dusk to dawn, and if you're lucky you might be able to catch a glimpse. ... That's because it takes time for debris from a comet's orbit to drift into a position where it intersects with Earth's orbit, according to Bill Cooke, an astronomer with NASA's Meteoroid Environment Office."

#### See NASA Spin Its Next Mars Rover In Search Of Its Center Of Gravity

CNET News <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020042202nasa-26r-3Demail-2Db214-26l-3D006-2Dd18-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=DQZXYlp\\_5duSjfsNQrbEsVXyPB-3znNT1zuOSE5QSDQ&s=VtxwCuzfdYzi8oWx0Cr7MoBEbbpzZAl6uicMunjx\\_xw&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020042202nasa-26r-3Demail-2Db214-26l-3D006-2Dd18-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=DQZXYlp_5duSjfsNQrbEsVXyPB-3znNT1zuOSE5QSDQ&s=VtxwCuzfdYzi8oWx0Cr7MoBEbbpzZAl6uicMunjx_xw&e=>)> (4/21, Kooser) "NASA's next Mars rover is just a few months away from the opening of its launch window in July. The Perseverance rover team is busy with the final preparations, including a mass properties test to ensure the vehicle is balanced. "Precision mass properties measurements are essential to a safe landing on Mars because they help ensure that the spacecraft travels accurately throughout its trip to the red planet," NASA said in a release Monday."

#### Falcon 9 To Become U.S. Rocket Leader; Starlink "Where Are They Now" Edition

NASA Space Flight <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020042202nasa-26r-3Demail-2Db214-26l-3D007-2D183-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=DQZXYlp\\_5duSjfsNQrbEsVXyPB-3znNT1zuOSE5QSDQ&s=sqSYxKV8TF3S1XISC9Z\\_Zq98ATcwMW7jO757J-\\_m1dw&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020042202nasa-26r-3Demail-2Db214-26l-3D007-2D183-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=DQZXYlp_5duSjfsNQrbEsVXyPB-3znNT1zuOSE5QSDQ&s=sqSYxKV8TF3S1XISC9Z_Zq98ATcwMW7jO757J-_m1dw&e=>)> (4/21, Gebhardt, Lentz) "As SpaceX continues its steady march of Starlink internet satellite launches, the company reaches a new milestone with the seventh flight of Starlink on Wednesday: Falcon 9 takes the mantle of 'most flown currently operational U.S. rocket' from Atlas V. Meanwhile, SpaceX is actively making moves on the ground, securing FCC permits for Starlink ground terminals/stations across the United States."

#### Flight

#### Why Flying Taxi Makers Are Hitting Turbulence

Fortune <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-)

3D2020042202nasa-26r-3Demail-2Db214-26l-3D008-2Df34-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=DQZXYlp\_5duSjfsNQrbEsVXyPB-3znNT1zuOSE5QSDQ&s=Dg8oxqe0QJhH-aaCN4N4AG-UY-Lr4\_\_7NhSQUcsOM8l&e=> (4/21, Alsever) "Imagine, in a few years, climbing into a small four-seat air taxi to get to the airport. The craft resembles an airplane, but takes off and lands vertically like a helicopter. Its electric motors make for an eerily quiet ride. And as for the cockpit, well, there isn't one because there's no pilot. ... Parimal Kopardekar, director of NASA's Aeronautics Research Institute, says: 'Getting off the ground and making sure safety is assured will be the biggest challenge ahead. But how do you prove that you're safe through operation and design? And then how do you scale it in airspace and manufacturing?' At the NASA Ames Research Center in Mountain View, Kopardekar's team is working to sort those questions out with the Federal Aviation Administration."

#### OSU Receives NASA Award To Study Weather For Drones

Oklahoman <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020042202nasa-26r-3Demail-2Db214-26l-3D009-2D9f7-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=DQZXYlp\\_5duSjfsNQrbEsVXyPB-3znNT1zuOSE5QSDQ&s=KfOeiKKOs0GggKuQUWUsckJ0iyRHfJBqAr\\_ly0BG5wY&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020042202nasa-26r-3Demail-2Db214-26l-3D009-2D9f7-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=DQZXYlp_5duSjfsNQrbEsVXyPB-3znNT1zuOSE5QSDQ&s=KfOeiKKOs0GggKuQUWUsckJ0iyRHfJBqAr_ly0BG5wY&e=>) (4/22, Denwalt) "NASA awarded a team of Oklahoma State University researchers \$5.2 million over the next four years to study low-level wind and turbulence forecasting. The research aims to improve the safe operation of drones in both urban and rural environments, particularly in the field of advanced air mobility that could one day include autonomous transport of people and cargo."

#### Earth

#### This Year Is On Track To Be Earth's Warmest On Record, Beating 2016, NOAA Says

Washington Post <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020042202nasa-26r-3Demail-2Db214-26l-3D00a-2D804-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=DQZXYlp\\_5duSjfsNQrbEsVXyPB-3znNT1zuOSE5QSDQ&s=Xh0mbH7LMso46o2jORTipMlr59AMo9n0RugJJMyhWSA&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020042202nasa-26r-3Demail-2Db214-26l-3D00a-2D804-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=DQZXYlp_5duSjfsNQrbEsVXyPB-3znNT1zuOSE5QSDQ&s=Xh0mbH7LMso46o2jORTipMlr59AMo9n0RugJJMyhWSA&e=>) (4/21, Freedman) "There is a 75 percent chance 2020 will set a record for the warmest year since instrument records began in 1880, the National Oceanic and Atmospheric Administration is projecting, beating out 2016 for the distinction. This is somewhat unexpected, since there is no declared El Niño event in the tropical Pacific Ocean, which tends to provide a natural boost to global temperatures that are already elevated due to the human-caused buildup of greenhouse gases in the atmosphere. ... Separately, Gavin Schmidt, who leads NASA's Goddard Institute for Space Studies in New York, puts the odds of a record this year at closer to 60 percent, based on NASA's data set, which has slightly different rankings than has NOAA. However, he said that when applying NOAA's methods to NASA's monthly data, the odds would increase to 67 percent."

#### Watch: Earth Day Through The Years From NASA

NBC News <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020042202nasa-26r-3Demail-2Db214-26l-3D00b-2Dc4d-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=DQZXYlp\\_5duSjfsNQrbEsVXyPB-3znNT1zuOSE5QSDQ&s=0wSrlldPbEXk1kyK3tNQLBOZeyU7URrTF2sSdiszyl&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020042202nasa-26r-3Demail-2Db214-26l-3D00b-2Dc4d-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=DQZXYlp_5duSjfsNQrbEsVXyPB-3znNT1zuOSE5QSDQ&s=0wSrlldPbEXk1kyK3tNQLBOZeyU7URrTF2sSdiszyl&e=>) (4/21) "From advanced climate tracking to breakthroughs in weather forecasting, NASA has been monitoring Mother Earth – and human impact on the planet – for over 50 years."

## Stuck At Home On Earth Day? Here's How To Celebrate The Planet Online.

CBS News <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020042202nasa-26r-3Demail-2Db214-26l-3D00c-2D1c0-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=DQZXYlp\\_5duSjfsNQrbEsVXyPB-3znNT1zuOSE5QSDQ&s=1n\\_sSXS4az-sJL5Oa5LIB1Vp3hB9IYqLYwctALE\\_E8w&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020042202nasa-26r-3Demail-2Db214-26l-3D00c-2D1c0-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=DQZXYlp_5duSjfsNQrbEsVXyPB-3znNT1zuOSE5QSDQ&s=1n_sSXS4az-sJL5Oa5LIB1Vp3hB9IYqLYwctALE_E8w&e=>) (4/21, Lewis) "Wednesday, April 22 marks the 50th anniversary of Earth Day, an annual global celebration in support of environmental protection. But this year, the coronavirus pandemic is making it difficult to get outside and honor the beauty of the planet. ... NASA has been celebrating #EarthDayAtHome all month and will have new content across its site and social media channels for the special day."

## Coronavirus Shutdowns An Earth Day 2020 Gift To The Environment

CNET News <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020042202nasa-26r-3Demail-2Db214-26l-3D00d-2D025-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=DQZXYlp\\_5duSjfsNQrbEsVXyPB-3znNT1zuOSE5QSDQ&s=rYjAqElu4BQRzP5ljkG3JLd6TmVxPTXM833686HXGco&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020042202nasa-26r-3Demail-2Db214-26l-3D00d-2D025-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=DQZXYlp_5duSjfsNQrbEsVXyPB-3znNT1zuOSE5QSDQ&s=rYjAqElu4BQRzP5ljkG3JLd6TmVxPTXM833686HXGco&e=>) (4/21, Mack) "It appears the COVID-19 pandemic has given the planet a gift for Earth Day 2020, which is Wednesday, April 22. The coronavirus has taken billions of people off the streets worldwide and slashed international travel. And all those people staying at home seem to be a collective weight off the shoulders of the global environment in certain observable ways. ... NASA and the European Space Agency first saw the effect via satellite data (above) that shows China's dramatic drop in nitrogen dioxide emissions, which mostly come from vehicles, after lockdowns were put in place in February."

## NASA Data Shows Drop In Pollution In Northeast US

WZDX-TV Huntsville (AL) <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020042202nasa-26r-3Demail-2Db214-26l-3D00e-2D14e-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=DQZXYlp\\_5duSjfsNQrbEsVXyPB-3znNT1zuOSE5QSDQ&s=o4bPIIMJ7-hFK6X8cGsYrQu9AYHpylAcQh-xGwnek-Y&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020042202nasa-26r-3Demail-2Db214-26l-3D00e-2D14e-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=DQZXYlp_5duSjfsNQrbEsVXyPB-3znNT1zuOSE5QSDQ&s=o4bPIIMJ7-hFK6X8cGsYrQu9AYHpylAcQh-xGwnek-Y&e=>) (4/21) hosts three experts, including NASA's Dr. Bryan Duncan, to discuss the impact of COVID-19 on the environment. Dr. Duncan shares a NASA map that shows a drop in pollution in the northeast U.S.

## As People Stay Home, Earth Turns Wilder And Cleaner

Associated Press <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020042202nasa-26r-3Demail-2Db214-26l-3D00f-2D952-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=DQZXYlp\\_5duSjfsNQrbEsVXyPB-3znNT1zuOSE5QSDQ&s=Mt0IQf8kqJ6RZKRvYbCjTKPwQXdbDaXVCNLor6vg3a8&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020042202nasa-26r-3Demail-2Db214-26l-3D00f-2D952-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=DQZXYlp_5duSjfsNQrbEsVXyPB-3znNT1zuOSE5QSDQ&s=Mt0IQf8kqJ6RZKRvYbCjTKPwQXdbDaXVCNLor6vg3a8&e=>) (4/22, Borenstein) "An unplanned grand experiment is changing Earth. As people across the globe stay home to stop the spread of the new coronavirus, the air has cleaned up, albeit temporarily. Smog stopped choking New Delhi, one of the most polluted cities in the world, and India's getting views of sights not visible in decades. Nitrogen dioxide pollution in the northeastern United States is down 30%. Rome air pollution levels from mid-March to mid-April were down 49% from a year ago. ... The air from Boston to Washington is its cleanest since a NASA satellite started measuring nitrogen dioxide, in 2005, says NASA atmospheric scientist Barry Lefer. Largely caused by burning of fossil fuels, this pollution is short-lived, so the air gets cleaner quickly."

## Cleaner Air From Coronavirus Precautions Makes Earth Day Celebration Bittersweet For Environmentalists

ABC News <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020042202nasa-26r-3Demail-2Db214-26l-3D010-2D374-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=DQZXYlp\\_5duSjfsNQrbEsVXyPB-3znNT1zuOSE5QSDQ&s=wtAniEBzN02WAxGfubLHfZosAcVDJSwbMgtAu41bkrc&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020042202nasa-26r-3Demail-2Db214-26l-3D010-2D374-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=DQZXYlp_5duSjfsNQrbEsVXyPB-3znNT1zuOSE5QSDQ&s=wtAniEBzN02WAxGfubLHfZosAcVDJSwbMgtAu41bkrc&e=>) (4/22, Pereira) “This year was supposed to be a milestone for environmentalists worldwide: the 50th anniversary of Earth Day. But the novel coronavirus pandemic has canceled almost all of this year’s planned events, from large green rallies in major cities to smaller park beautifications in the suburbs. ... Two weeks ago, satellite data from NASA showed a 30% drop in air pollutants in the northeastern section of the U.S. during March. The air had particularly low quantities of nitrogen dioxide, or NO<sub>2</sub>, according to Barry Lefer, a NASA air quality scientist.”

## Simulating Early Ocean Vents Shows Life’s Building Blocks Form Under Pressure

Astrobiology Magazine <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020042202nasa-26r-3Demail-2Db214-26l-3D011-2D749-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=DQZXYlp\\_5duSjfsNQrbEsVXyPB-3znNT1zuOSE5QSDQ&s=xw5eV\\_eW1sNe7xUtiiLWSVrHokacsiBxeSTopHrPnQA&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020042202nasa-26r-3Demail-2Db214-26l-3D011-2D749-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=DQZXYlp_5duSjfsNQrbEsVXyPB-3znNT1zuOSE5QSDQ&s=xw5eV_eW1sNe7xUtiiLWSVrHokacsiBxeSTopHrPnQA&e=>) (4/21) “By mimicking rocky seafloor chimneys in the lab, scientists have produced new evidence that these features could have provided the right ingredients to kick-start life. Where did life first form on Earth? Some scientists think it could have been around hydrothermal vents that may have existed at the bottom of the ocean 4.5 billion years ago. In a new paper in the journal *Astrobiology*, scientists at NASA’s Jet Propulsion Laboratory describe how they mimicked possible ancient undersea environments with a complex experimental setup.”

## Reporting Your Weather Observations Aids NASA In Climate Science Research

Discover Magazine <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020042202nasa-26r-3Demail-2Db214-26l-3D012-2De2c-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=DQZXYlp\\_5duSjfsNQrbEsVXyPB-3znNT1zuOSE5QSDQ&s=cSH097iD-PIBpY-2oPB4cUOwNM4haCRT\\_2ISv5vig2A&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020042202nasa-26r-3Demail-2Db214-26l-3D012-2De2c-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=DQZXYlp_5duSjfsNQrbEsVXyPB-3znNT1zuOSE5QSDQ&s=cSH097iD-PIBpY-2oPB4cUOwNM4haCRT_2ISv5vig2A&e=>) (4/21, Cavalier) “What does change look like near you? Have you noticed flowers blooming earlier than usual? Has extreme weather and flooding affected your commute? You can join a community of climate and weather journalists with ISeeChange. ... ISeeChange partners with NASA’s Orbiting Carbon Observatory 2 mission to ground-truth the data from satellites with observations on the ground. Your observations will be matched with data from that date and time, including temperature, cloud cover and carbon dioxide levels in the atmosphere, which will help scientists see and understand the impact of the changing climate on everyday life.”

## NASA Satellite Reveals Huge Drop In Air Pollution Over Parts Of India Since COVID-19 Lockdown

Newsweek <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020042202nasa-26r-3Demail-2Db214-26l-3D013-2D955-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=DQZXYlp\\_5duSjfsNQrbEsVXyPB-3znNT1zuOSE5QSDQ&s=Vbp8-NTG8lex1BGZr3dMldkoXdL2tHdUYczgF\\_IMc&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020042202nasa-26r-3Demail-2Db214-26l-3D013-2D955-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=DQZXYlp_5duSjfsNQrbEsVXyPB-3znNT1zuOSE5QSDQ&s=Vbp8-NTG8lex1BGZr3dMldkoXdL2tHdUYczgF_IMc&e=>) (4/21, Georgiou) “NASA satellite data reveals how aerosol levels in India have dropped dramatically since March 25, when the government imposed the world’s largest lockdown on its 1.3 billion-strong population amid the COVID-19 pandemic. This lockdown, like in other parts of the planet, has

significantly reduced industrial activities and caused large falls in road vehicle and plane traffic in the country. Subsequently, aerosol levels dropped to a 20-year-low for the beginning of April in northern India—just one week after the lockdown was introduced—according to measurements taken by the Moderate Resolution Imaging Spectroradiometer (MODIS) on NASA’s Terra satellite.”

#### When It Comes To Water, Think Globally

Phys (UK) <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020042202nasa-26r-3Demail-2Db214-26l-3D014-2D207-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=DQZXYlp\\_5duSjfsNQrbEsVXyPB-3znNT1zuOSE5QSDQ&s=AguqfHc2LfSxNjr-wmygTRNRoMcv4ycSeDskWjCjDvY&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020042202nasa-26r-3Demail-2Db214-26l-3D014-2D207-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=DQZXYlp_5duSjfsNQrbEsVXyPB-3znNT1zuOSE5QSDQ&s=AguqfHc2LfSxNjr-wmygTRNRoMcv4ycSeDskWjCjDvY&e=>) (4/21, Keck) “Earth is a pale, blue dot when seen from space. Its blue color is due to our home planet being 71% covered in water. NASA monitors Earth’s water from space, the skies, ground stations on land, ships sailing the seas and even with apps on mobile phones. While Earth is so wet it looks blue from space, most of that water is saltwater. Only 2.5% of water on Earth is freshwater and nearly all of that water is frozen—locked up in polar ice caps, glaciers and other ice. The small amount of freshwater that remains is all that’s available for all the ways we use water.”

#### Humans in Space

##### Thank You For Flying SpaceX

Wall Street Journal <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020042202nasa-26r-3Demail-2Db214-26l-3D015-2D1ab-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=DQZXYlp\\_5duSjfsNQrbEsVXyPB-3znNT1zuOSE5QSDQ&s=dX6k26arxW7b7cU\\_1z1jbrUH1d1M-7JLp\\_Furxf9Hol&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020042202nasa-26r-3Demail-2Db214-26l-3D015-2D1ab-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=DQZXYlp_5duSjfsNQrbEsVXyPB-3znNT1zuOSE5QSDQ&s=dX6k26arxW7b7cU_1z1jbrUH1d1M-7JLp_Furxf9Hol&e=>) (4/21) editorializes that a NASA mission on May 27 will launch two astronauts on board a SpaceX crew capsule atop a SpaceX rocket to the international space station. The Journal says the mission, the first one carrying astronauts launched from American soil in nearly ten years, could be a monumental step for private spaceflight.

#### This Robot Is Helping Astronauts On The Space Station With Tasks, Stress And Isolation

CNN <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020042202nasa-26r-3Demail-2Db214-26l-3D016-2D9bb-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=DQZXYlp\\_5duSjfsNQrbEsVXyPB-3znNT1zuOSE5QSDQ&s=6Y\\_IMSketiYEN-4ukBIQvitZ99TRoG3DpE2RSLQrgXk&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020042202nasa-26r-3Demail-2Db214-26l-3D016-2D9bb-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=DQZXYlp_5duSjfsNQrbEsVXyPB-3znNT1zuOSE5QSDQ&s=6Y_IMSketiYEN-4ukBIQvitZ99TRoG3DpE2RSLQrgXk&e=>) (4/21, Strickland) “Along for the ride with the astronauts on the International Space Station is a bit of a talking head called CIMON-2. ... When Parmitano asked him to share a fact about space, CIMON-2 said, ‘The Apollo crew did not have any life insurance.’ In a video shared by the German Aerospace Center, Parmitano and NASA astronauts Andrew Morgan and Jessica Meir, laughed in surprise.”

#### Ex-Astronaut Who Went To Space Shares Advice For Getting Through Coronavirus Quarantine

New York Daily News <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020042202nasa-26r-3Demail-2Db214-26l-3D017-2Dca9-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=DQZXYlp\\_5duSjfsNQrbEsVXyPB-3znNT1zuOSE5QSDQ&s=wa\\_mXQKjegilM-j8pjTQV1kzAmJRqSmdlhG\\_5OsoQuk&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020042202nasa-26r-3Demail-2Db214-26l-3D017-2Dca9-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=DQZXYlp_5duSjfsNQrbEsVXyPB-3znNT1zuOSE5QSDQ&s=wa_mXQKjegilM-j8pjTQV1kzAmJRqSmdlhG_5OsoQuk&e=>) (4/21, Sblendorio) “An ex-NASA astronaut has some out-of-this-world

advice to help people get through the coronavirus quarantine. José Hernández gave a series of tips for how to handle isolation during a recent conversation with NBC News. He's no stranger to isolation, considering his former job took him into space in 2009."

#### NASA Astronauts May Train On Private Suborbital Spaceships

SPACE <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020042202nasa-26r-3Demail-2Db214-26l-3D018-2Df6b-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=DQZXYlp\\_5duSjfsNQrbEsVXyPB-3znNT1zuOSE5QSDQ&s=j9zKkyKqt638HEGSAEGvw8Q6NwCdUCXJIDroTBPB1M&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020042202nasa-26r-3Demail-2Db214-26l-3D018-2Df6b-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=DQZXYlp_5duSjfsNQrbEsVXyPB-3znNT1zuOSE5QSDQ&s=j9zKkyKqt638HEGSAEGvw8Q6NwCdUCXJIDroTBPB1M&e=>) (4/21, Redd) "NASA astronauts may start hitching commercial rides to suborbital space in the near future. According to NASA Administrator Jim Bridenstine, agency astronauts may use private suborbital flights for training and research experiments once these commercial trips have been proven safe. Such jaunts could help pave the way for the next crewed mission to the surface of the moon, which NASA aims to do in 2024."

#### NASA Might Use Private Suborbital Spaceships To Train New Astronauts

Tech Times <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020042202nasa-26r-3Demail-2Db214-26l-3D019-2Db89-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=DQZXYlp\\_5duSjfsNQrbEsVXyPB-3znNT1zuOSE5QSDQ&s=dAlt0ogpWg7tNJ791TE5imGbiCaFB1WZYk6iAkQcXT4&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020042202nasa-26r-3Demail-2Db214-26l-3D019-2Db89-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=DQZXYlp_5duSjfsNQrbEsVXyPB-3znNT1zuOSE5QSDQ&s=dAlt0ogpWg7tNJ791TE5imGbiCaFB1WZYk6iAkQcXT4&e=>) (4/21, de Leon) "According to Techcrunch's latest report, The National Aeronautics and Space Administration (NASA) will be using private suborbital flights to train new astronauts recruited for future space missions. The agency is hoping to improve its training protocols to better prepare its new members for the challenges of space."

#### Chimps In Space

Astronomy News <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020042202nasa-26r-3Demail-2Db214-26l-3D01a-2D420-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=DQZXYlp\\_5duSjfsNQrbEsVXyPB-3znNT1zuOSE5QSDQ&s=cuV2UOYmZgrpmuQ80klXfea9oXW5jwun1c0kQl3aEE8&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020042202nasa-26r-3Demail-2Db214-26l-3D01a-2D420-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=DQZXYlp_5duSjfsNQrbEsVXyPB-3znNT1zuOSE5QSDQ&s=cuV2UOYmZgrpmuQ80klXfea9oXW5jwun1c0kQl3aEE8&e=>) (4/21, Betz) "Those traits would pay off during the mission. Following his launch on Jan. 31, 1961, Ham's Mercury capsule unintentionally carried him far higher and faster than NASA intended. His capsule also partially lost air pressure, though the chimp was unharmed because he was sealed inside an inner chamber. ... In the decades since, many other types of monkeys have flown to space on U.S., Russian, Chinese, French and Iranian spacecraft. NASA continued sending monkeys to orbit all the way into the 1990s, when pressure from animal rights groups, including PETA, pushed the space agency to reexamine the ethics of such research. As a result, NASA pulled out of the Bion program, a series of joint missions with Russia that was intended to study the impact of spaceflight on living organisms."

#### NASA, SpaceX Launch Planned For May 27

KHOU-TV Houston <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020042202nasa-26r-3Demail-2Db214-26l-3D01b-2D7f1-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=DQZXYlp\\_5duSjfsNQrbEsVXyPB-3znNT1zuOSE5QSDQ&s=HEzUx0AIXYFJ7wRfsdDr1CHPnow\\_IAl09BkZSME0\\_g&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020042202nasa-26r-3Demail-2Db214-26l-3D01b-2D7f1-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=DQZXYlp_5duSjfsNQrbEsVXyPB-3znNT1zuOSE5QSDQ&s=HEzUx0AIXYFJ7wRfsdDr1CHPnow_IAl09BkZSME0_g&e=>) (4/21) "Well COVID-19 won't

stop NASA from a historic launch ,but the scene will look a little different at the Kennedy Space Center. Stephanie Whitfield connects the dots.”

## Moon to Mars

### See NASA Spin Its Next Mars Rover In Search Of Its Center Of Gravity

CNET News <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020042202nasa-26r-3Demail-2Db214-26l-3D01c-2D174-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=DQZXYlp\\_5duSjfsNQrbEsVXyPB-3znNT1zuOSE5QSDQ&s=rVjT1agk\\_rm8vP8dk\\_CILwMh1pU\\_aebf62ad7tSW-Q&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020042202nasa-26r-3Demail-2Db214-26l-3D01c-2D174-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=DQZXYlp_5duSjfsNQrbEsVXyPB-3znNT1zuOSE5QSDQ&s=rVjT1agk_rm8vP8dk_CILwMh1pU_aebf62ad7tSW-Q&e=>) (4/21, Kooser) “NASA’s next Mars rover is just a few months away from the opening of its launch window in July. The Perseverance rover team is busy with the final preparations, including a mass properties test to ensure the vehicle is balanced. ‘Precision mass properties measurements are essential to a safe landing on Mars because they help ensure that the spacecraft travels accurately throughout its trip to the red planet,’ NASA said in a release Monday.”

### NASA’s Mars 2020 Perseverance Rover Gets Balanced

Phys (UK) <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020042202nasa-26r-3Demail-2Db214-26l-3D01d-2D0ca-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=DQZXYlp\\_5duSjfsNQrbEsVXyPB-3znNT1zuOSE5QSDQ&s=MLUneqcRW9glbBIUHzdn8KhsGgTQZJZLf6nw5D4\\_STo&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020042202nasa-26r-3Demail-2Db214-26l-3D01d-2D0ca-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=DQZXYlp_5duSjfsNQrbEsVXyPB-3znNT1zuOSE5QSDQ&s=MLUneqcRW9glbBIUHzdn8KhsGgTQZJZLf6nw5D4_STo&e=>) (4/21) “With 13 weeks to go before the launch period of NASA’s Mars 2020 Perseverance rover opens, final preparations of the spacecraft continue at the Kennedy Space Center in Florida. On April 8, the assembly, test and launch operations team completed a crucial mass properties test of the rover. Precision mass properties measurements are essential to a safe landing on Mars because they help ensure that the spacecraft travels accurately throughout its trip to the Red Planet—from launch through its entry, descent and landing.”

### NASA’s Mars 2020 Rover Just Hit A Crucial Pre-Launch Milestone

BGR <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020042202nasa-26r-3Demail-2Db214-26l-3D01e-2D343-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=DQZXYlp\\_5duSjfsNQrbEsVXyPB-3znNT1zuOSE5QSDQ&s=6sDYnG9p7vdH\\_nRFuTWaAHdb9GLGRNJWfYg2i6Rpvnl&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020042202nasa-26r-3Demail-2Db214-26l-3D01e-2D343-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=DQZXYlp_5duSjfsNQrbEsVXyPB-3znNT1zuOSE5QSDQ&s=6sDYnG9p7vdH_nRFuTWaAHdb9GLGRNJWfYg2i6Rpvnl&e=>) (4/21, Wehner) “NASA’s Mars 2020 rover Perseverance just got spun around in the name of science. The rover endured several days of balance testing, gaining some weight to ensure that its center of gravity is exactly where it needs to be for a safe trip and landing on Mars.”

### How NASA’s Perseverance Mars Team Adjusted To Work In The Time Of Coronavirus

SpaceRef <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020042202nasa-26r-3Demail-2Db214-26l-3D01f-2D7e8-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=DQZXYlp\\_5duSjfsNQrbEsVXyPB-3znNT1zuOSE5QSDQ&s=x-WuEPS\\_j1aQeC19oUC3GRXZhZ7WsAozEguTL-0FkXo&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020042202nasa-26r-3Demail-2Db214-26l-3D01f-2D7e8-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=DQZXYlp_5duSjfsNQrbEsVXyPB-3znNT1zuOSE5QSDQ&s=x-WuEPS_j1aQeC19oUC3GRXZhZ7WsAozEguTL-0FkXo&e=>) (4/21) “Like much of the rest of the world, the Mars rover team is pushing forward with its mission-critical work while putting the health and safety of their colleagues and community first. From the moment the mission began in 2013, the women and men working on what would become NASA’s Perseverance Mars rover knew they’d encounter unexpected challenges on their way to Mars. After all, no



NASA mission to the surface of the Red Planet has done otherwise. But with its launch period opening on July 17, the team, like much of the rest of the world, is pushing forward with its mission-critical work while putting the health and safety of their colleagues and community first.”

#### A Giant Raft Of Rock May Once Have Floated Across Mars' Ancient Ocean

New Scientist <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020042202nasa-26r-3Demail-2Db214-26l-3D020-2D94c-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=DQZXYIp\\_5duSjfsNQrbEsVXyPB-3znNT1zuOSE5QSDQ&s=WRfuLKBEHw3AlcFUuIGGOng\\_829EL7ullyhGbdBPX3Y&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020042202nasa-26r-3Demail-2Db214-26l-3D020-2D94c-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=DQZXYIp_5duSjfsNQrbEsVXyPB-3znNT1zuOSE5QSDQ&s=WRfuLKBEHw3AlcFUuIGGOng_829EL7ullyhGbdBPX3Y&e=>) (4/21, O'Callaghan) “A giant floating raft of volcanic rock called pumice could have drifted across an ancient Martian ocean and created one of the most mysterious features we can see on the surface of Mars today. The Medusae Fossae Formation (MFF), found near the Martian equator, spans about 5000 kilometres. Comprising rolling hills and mounds, scientists have previously suggested its origin was volcanic ash from the nearby Olympus Mons or Elysium Mons volcanoes.”

#### NASA: Mars Rock Will Finally Travel To Earth In 2031

Tech Times <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020042202nasa-26r-3Demail-2Db214-26l-3D021-2D910-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=DQZXYIp\\_5duSjfsNQrbEsVXyPB-3znNT1zuOSE5QSDQ&s=LfMkMGAFNwPA8exq4avMw5PhVxlvM6SibJhA8Y0wxAA&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020042202nasa-26r-3Demail-2Db214-26l-3D021-2D910-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=DQZXYIp_5duSjfsNQrbEsVXyPB-3znNT1zuOSE5QSDQ&s=LfMkMGAFNwPA8exq4avMw5PhVxlvM6SibJhA8Y0wxAA&e=>) (4/21) “The National Aeronautics and Space Administration (NASA)'s Perseverance, the newly-built Mars rover, is now up to a major project once the device lands on Mars. In 2021, Perseverance will collect Mars materials like Martian rocks on the planet and fly it back to Earth for scientists to study. Of course, the Mars Rover will not be the only one working on getting the rocks, but other space crafts will be sent to deliver the Martian rocks back to Earth-- all scheduled to happen in 2031.”

#### Solar System and Beyond

##### Lyrid Meteor Shower 2020: Watch It Peak In Night Skies

New York Times <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020042202nasa-26r-3Demail-2Db214-26l-3D022-2D74f-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=DQZXYIp\\_5duSjfsNQrbEsVXyPB-3znNT1zuOSE5QSDQ&s=e1tUtXOIUUXCaHkMFMcMANobi1ROaR3-Vhyo5u-jO8s&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020042202nasa-26r-3Demail-2Db214-26l-3D022-2D74f-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=DQZXYIp_5duSjfsNQrbEsVXyPB-3znNT1zuOSE5QSDQ&s=e1tUtXOIUUXCaHkMFMcMANobi1ROaR3-Vhyo5u-jO8s&e=>) (4/21, St. Fleur) “All year long as Earth revolves around the sun, it passes through streams of cosmic debris. The resulting meteor showers can light up night skies from dusk to dawn, and if you're lucky you might be able to catch a glimpse. ... That's because it takes time for debris from a comet's orbit to drift into a position where it intersects with Earth's orbit, according to Bill Cooke, an astronomer with NASA's Meteoroid Environment Office.”

##### Lyrid Meteor Shower Peaks On Wednesday

CNN <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020042202nasa-26r-3Demail-2Db214-26l-3D023-2D046-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=DQZXYIp\\_5duSjfsNQrbEsVXyPB-3znNT1zuOSE5QSDQ&s=IQV-XXD4dmKb\\_qLJGx3hvCGiKMaA6\\_kSDTNQZZyEFnl&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020042202nasa-26r-3Demail-2Db214-26l-3D023-2D046-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=DQZXYIp_5duSjfsNQrbEsVXyPB-3znNT1zuOSE5QSDQ&s=IQV-XXD4dmKb_qLJGx3hvCGiKMaA6_kSDTNQZZyEFnl&e=>) (4/21, Strickland) “The first meteor shower of spring,

known as the Lyrid meteor shower, will present a night skywatching show beginning on Sunday evening and peaking on Wednesday night. There hasn't been a meteor shower to light up the sky since early January, and this one will be visible around the globe. ... And keep an eye out for a grouping of Jupiter, Saturn and Mars in the sky. This won't happen again for a couple of years, according to NASA."

#### Lyrid Meteors Will Sparkle With No Moonlight Interfering

New York Daily News <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020042202nasa-26r-3Demail-2Db214-26l-3D024-2D41c-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=DQZXYlp\\_5duSjfsNQrbEsVXyPB-3znNT1zuOSE5QSDQ&s=WXgvG5Ah3rDyAHeMyeyU-cSsOO4fXsVNO1zneGIZBI4&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020042202nasa-26r-3Demail-2Db214-26l-3D024-2D41c-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=DQZXYlp_5duSjfsNQrbEsVXyPB-3znNT1zuOSE5QSDQ&s=WXgvG5Ah3rDyAHeMyeyU-cSsOO4fXsVNO1zneGIZBI4&e=>) (4/21, Braine) "Just in time for Earth Day's 50th anniversary, the Lyrid meteor shower peaks overnight Tuesday, with a potential for 15 shooting stars hourly given the lack of moonlight. The peak will be in the pre-dawn hours of Wednesday morning, best seen by looking northeast toward Vega, one of the brightest stars in the sky, according to Earthsky.org. Vega will rise at around 9 or 10 p.m. local time, Earthsky said, though it will be almost directly overhead in the hours just before dawn, according to Space.com. ... 'A new Moon this year will make way for good viewing of the Lyrids, leaving the sky dark,' NASA said in a statement. 'While rates of Lyrids per hour can be low, they are also known to produce bright fireballs, and this year we are expecting rates of up to 15 meteors per hour.'"

#### NASA And Astronomy Expert Give Tips On Watching Lyrid Meteor Shower From Home

Daily Mirror (UK) <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020042202nasa-26r-3Demail-2Db214-26l-3D025-2D89a-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=DQZXYlp\\_5duSjfsNQrbEsVXyPB-3znNT1zuOSE5QSDQ&s=1t7Zbb1ERZaWzr22t7laSB9ir\\_lcUCZ75FBoSpZIDpY&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020042202nasa-26r-3Demail-2Db214-26l-3D025-2D89a-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=DQZXYlp_5duSjfsNQrbEsVXyPB-3znNT1zuOSE5QSDQ&s=1t7Zbb1ERZaWzr22t7laSB9ir_lcUCZ75FBoSpZIDpY&e=>) (4/21, Best) "Tonight, the moment that stargazing fans have been waiting for will finally take place – the peak of the Lyrid Meteor Shower. The annual shower takes place every April, but will peak shortly after midnight tonight, providing you with the perfect opportunity to spot a shooting star. While our advice for seeing the meteor shower would usually be to head to an area with little light pollution, with the coronavirus lockdown still in place, this is likely to be tricky for many Brits. ... Meanwhile, NASA suggests that those wanting to see the meteor shower should head out early to let your eyes adjust."

#### NASA Spots Fireballs From Lyrid Meteor Shower 2020 (Video)

SPACE <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020042202nasa-26r-3Demail-2Db214-26l-3D026-2D1db-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=DQZXYlp\\_5duSjfsNQrbEsVXyPB-3znNT1zuOSE5QSDQ&s=LNMQbl5WIFzE8ameAPYbkcpaSB0WH6ovOSvRiLJVprA&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020042202nasa-26r-3Demail-2Db214-26l-3D026-2D1db-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=DQZXYlp_5duSjfsNQrbEsVXyPB-3znNT1zuOSE5QSDQ&s=LNMQbl5WIFzE8ameAPYbkcpaSB0WH6ovOSvRiLJVprA&e=>) (4/21, Malik) "The Lyrid meteor shower of 2020 will be at its best overnight, but NASA has already captured some "shooting stars" with cameras across the United States. Fireballs from the Lyrid meteor shower, which peaks late tonight and early Wednesday (April 21-22), were captured by several cameras with NASA's All-sky Fireball Network in the wee hours of this morning. A video of camera imagery shows Lyrid meteors as they lit up the predawn sky at sites across the country."

#### Scientists Observe Celestial Smash-Up Around Nearby Star

Reuters <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020042202nasa-26r-3Demail-2Db214-26l-3D027-2Dc47-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=DQZXYlp\\_5duSjfsNQrbEsVXyPB-3znNT1zuOSE5QSDQ&s=ebo2euT04okgUkGKeHebzimeLgbAVZAnFZMpNUUCMN0&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020042202nasa-26r-3Demail-2Db214-26l-3D027-2Dc47-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=DQZXYlp_5duSjfsNQrbEsVXyPB-3znNT1zuOSE5QSDQ&s=ebo2euT04okgUkGKeHebzimeLgbAVZAnFZMpNUUCMN0&e=>) (4/21, Dunham)  
"Scientists have observed what appears to be the aftermath of a violent collision between two planetary building blocks orbiting a large and luminous star, a glimpse of the type of carnage that may have been commonplace early in our solar system's history. The apparent crash between two icy bodies each about 125 miles (200 km) wide occurred around a star called Fomalhaut, located a relatively close 25 light-years from Earth, that is about twice the mass and 17 times the luminosity of the sun, the researchers said. A light year is the distance light travels in a year, 5.9 trillion miles (9.5 trillion km)."

#### Weird Science: Astronomers Say 'Disappearing Planet' May Never Have Existed

USA Today <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020042202nasa-26r-3Demail-2Db214-26l-3D028-2D9ec-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=DQZXYlp\\_5duSjfsNQrbEsVXyPB-3znNT1zuOSE5QSDQ&s=fdcSqbfohetScnCjhdI1jenVclctvWi9Q-pf02iOki8&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020042202nasa-26r-3Demail-2Db214-26l-3D028-2D9ec-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=DQZXYlp_5duSjfsNQrbEsVXyPB-3znNT1zuOSE5QSDQ&s=fdcSqbfohetScnCjhdI1jenVclctvWi9Q-pf02iOki8&e=>) (4/21, Rice) "What scientists had believed was a planet beyond our solar system has now apparently disappeared from sight, a study says, which suggests "that what was heralded as one of the first exoplanets to ever be discovered ... likely never existed," according to the University of Arizona. ... In 2008, astronomers had reported the discovery of Fomalhaut b, which they said was "the first visible-light snapshot of a planet circling another star," according to a NASA statement."

#### Hubble-Trouble: Story Musgrave's Recount 30 Years Later

Forbes <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020042202nasa-26r-3Demail-2Db214-26l-3D029-2D304-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=DQZXYlp\\_5duSjfsNQrbEsVXyPB-3znNT1zuOSE5QSDQ&s=t2stjZkxxeaDRGZ26x4\\_3Cga2rB67RRmAeEyAxQcSjk&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020042202nasa-26r-3Demail-2Db214-26l-3D029-2D304-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=DQZXYlp_5duSjfsNQrbEsVXyPB-3znNT1zuOSE5QSDQ&s=t2stjZkxxeaDRGZ26x4_3Cga2rB67RRmAeEyAxQcSjk&e=>) (4/21, Clash) "Thirty years ago this week, the venerable Hubble Space Telescope was launched into orbit aboard Space Shuttle Discovery. Its release from the spacecraft didn't go exactly as planned. As the machine was running out of power, solar panels that did not deploy had to be cranked out manually for electricity. Overseeing that process was the seasoned astronaut Story Musgrave, 84. Musgrave has been on six Shuttle missions, so he knows his stuff. Following are edited excerpts from a longer conversation where Musgrave goes into detail about the telescope itself, and about the difficulties encountered making it work."

#### A Tale Of Two Telescopes: WFIRST And Hubble

Phys (UK) <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020042202nasa-26r-3Demail-2Db214-26l-3D02a-2Dd88-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=DQZXYlp\\_5duSjfsNQrbEsVXyPB-3znNT1zuOSE5QSDQ&s=d\\_EGcoPxhvfBfMBAxoksEsCyaWJGUahRuicx6Od4jJSg&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020042202nasa-26r-3Demail-2Db214-26l-3D02a-2Dd88-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=DQZXYlp_5duSjfsNQrbEsVXyPB-3znNT1zuOSE5QSDQ&s=d_EGcoPxhvfBfMBAxoksEsCyaWJGUahRuicx6Od4jJSg&e=>) (4/21, Balzer) "NASA's Wide Field Infrared Survey Telescope (WFIRST), planned for launch in the mid-2020s, will create enormous cosmic panoramas. Using them, astronomers will explore everything from our solar system to the edge of the observable universe, including planets throughout our galaxy and the nature of dark energy. Though it's often compared to the Hubble Space Telescope, which turns 30 years old this week, WFIRST will study the cosmos in a unique and complementary way."

## Stunning Images Of A 'Churning' Jupiter Emerge After NASA Spacecraft's Close Shave Last Week

Forbes <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020042202nasa-26r-3Demail-2Db214-26l-3D02b-2D2a1-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=DQZXYlp\\_5duSjfsNQrbEsVXyPB-3znNT1zuOSE5QSDQ&s=lb0zCfB63LDBRlqz-yFLT5-uhR8IUaKVDVwgqJM5T9o&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020042202nasa-26r-3Demail-2Db214-26l-3D02b-2D2a1-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=DQZXYlp_5duSjfsNQrbEsVXyPB-3znNT1zuOSE5QSDQ&s=lb0zCfB63LDBRlqz-yFLT5-uhR8IUaKVDVwgqJM5T9o&e=>)> (4/21, Carter) "NASA's first solar powered spacecraft at Jupiter has sent back some stunning images of the giant planet after last week's latest flyby. One image in particular (above) shows the complexity in the planet's cloud tops. It was processed by citizen scientist Kevin M. Gill, one of several who are working on raw image data sent back to Earth since last week's flyby."

## Comet 2I/Borisov Offers Glimpse At Distant Planet Making

Aviation Week <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020042202nasa-26r-3Demail-2Db214-26l-3D02c-2D494-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=DQZXYlp\\_5duSjfsNQrbEsVXyPB-3znNT1zuOSE5QSDQ&s=m0knRhtXugMSLoTpdSy9EpVRDsSbRjUT2rpL0WJPjVM&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020042202nasa-26r-3Demail-2Db214-26l-3D02c-2D494-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=DQZXYlp_5duSjfsNQrbEsVXyPB-3znNT1zuOSE5QSDQ&s=m0knRhtXugMSLoTpdSy9EpVRDsSbRjUT2rpL0WJPjVM&e=>)> (4/20, Carreau) "2I/Borisov, the second comet of extrasolar origin to approach the Sun in recent years, brought with it an unprecedented glimpse into the chemistry of the planet-forming protoplanetary disc surrounding another star. Bottom line, the surprisingly carbon monoxide (CO)-rich 2I/Borisov likely formed in a frigid region very far from its parent star before it was flung into interstellar space by the gravitational forces from a passing star or giant planet. It then cruised for millions to billions of years through interstellar space before being discovered on Aug. 30, 2019, by a Russian amateur astronomer, Gennady Borisov."

## Sorry, 'Earth 2.0' Fans, There's No Such Thing As An Earth-Like Exoplanet

Forbes <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020042202nasa-26r-3Demail-2Db214-26l-3D02d-2Db7d-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=DQZXYlp\\_5duSjfsNQrbEsVXyPB-3znNT1zuOSE5QSDQ&s=3im4Xet\\_TKZQL1LntAGJCQzKe-fV2STd9MWpcoe18cs&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020042202nasa-26r-3Demail-2Db214-26l-3D02d-2Db7d-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=DQZXYlp_5duSjfsNQrbEsVXyPB-3znNT1zuOSE5QSDQ&s=3im4Xet_TKZQL1LntAGJCQzKe-fV2STd9MWpcoe18cs&e=>)> (4/22, Siegel) "Over the past decade, our understanding of what planets exist around stars other than our own has exploded. The number of known exoplanets has risen from only a few dozen just 10 years ago to more than 4,000 confirmed exoplanets, pioneered by the spectacular success of NASA's Kepler mission. They come in a wide variety of sizes, orbital distances, and around all types of stars; we can finally speak about what's out there with data, rather than mere speculation."

## 'Disappearing' Exoplanet May Have Never Existed, Scientists Believe

Fox News <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020042202nasa-26r-3Demail-2Db214-26l-3D02e-2Dd1a-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=DQZXYlp\\_5duSjfsNQrbEsVXyPB-3znNT1zuOSE5QSDQ&s=aVW6HB5-obwp3J2SjtApydyfolTn7Oke3LuLc2Qal2k&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020042202nasa-26r-3Demail-2Db214-26l-3D02e-2Dd1a-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=DQZXYlp_5duSjfsNQrbEsVXyPB-3znNT1zuOSE5QSDQ&s=aVW6HB5-obwp3J2SjtApydyfolTn7Oke3LuLc2Qal2k&e=>)> (4/21, Ciaccia) "More than 4,000 exoplanets have been found as of April 2020, but one that was 'discovered' in 2004 may not actually be a planet at all. It could just be space dust, according to a newly published study. The planet, which was given the name Fomalhaut b by NASA in 2004 after it was observed by the Hubble Space Telescope, is more likely an 'expanding cloud of very fine dust particles from two icy bodies that smashed into each other,' according to a statement accompanying the study."

## Astronomers Spotted A Massive Exoplanet, And Then It Disappeared

BGR <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020042202nasa-26r-3Demail-2Db214-26l-3D02f-2D207-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=DQZXYlp\\_5duSjfsNQrbEsVXyPB-3znNT1zuOSE5QSDQ&s=GBhatxNwjXCo1yLDafFk97Z7qP65XhUcflsTJDPejvo&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020042202nasa-26r-3Demail-2Db214-26l-3D02f-2D207-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=DQZXYlp_5duSjfsNQrbEsVXyPB-3znNT1zuOSE5QSDQ&s=GBhatxNwjXCo1yLDafFk97Z7qP65XhUcflsTJDPejvo&e=>)> (4/21, Wehner) “Exoplanet Fomalhaut b (also known as Dagon) disappeared before astronomers’ eyes after being detected multiple times. A new theory suggests the would-be planet was actually a cloud of debris left over from a collision between two large icy objects. ... That’s the predicament researchers found themselves in after Dagon, a massive gas giant exoplanet originally spotted in 2004 by the Hubble Space Telescope suddenly vanished.”

#### Rotating Galaxies Galore: New Results From ALPINE Reveal What Appear To Be Spiral Galaxies In The Infant Universe

Phys (UK) <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020042202nasa-26r-3Demail-2Db214-26l-3D030-2Dca5-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=DQZXYlp\\_5duSjfsNQrbEsVXyPB-3znNT1zuOSE5QSDQ&s=GAy9Hu2mc7gr\\_jHZvvvtd5JYU0NFF98oQgGZaHk40Y&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020042202nasa-26r-3Demail-2Db214-26l-3D030-2Dca5-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=DQZXYlp_5duSjfsNQrbEsVXyPB-3znNT1zuOSE5QSDQ&s=GAy9Hu2mc7gr_jHZvvvtd5JYU0NFF98oQgGZaHk40Y&e=>)> (4/21, Clavin) “New results from an ambitious sky survey program, called ALPINE, reveal that rotating disk-shaped galaxies may have existed in large numbers earlier in the universe than previously thought. The ALPINE program, formally named “ALMA Large Program to Investigate C+ at Early Times,” uses data obtained from 70 hours of sky observations with the ALMA observatory (Atacama Large Millimeter/submillimeter Array) in Chile, in combination with data from previous observations by a host of other telescopes, including the W. M. Keck Observatory in Hawaii and NASA’s Hubble and Spitzer space telescopes.”

#### ‘Lucky’ MESSENGER Data Upends Long-Held Idea About Venus’ Atmosphere

Phys (UK) <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020042202nasa-26r-3Demail-2Db214-26l-3D031-2Db07-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=DQZXYlp\\_5duSjfsNQrbEsVXyPB-3znNT1zuOSE5QSDQ&s=DUwF7-NkAP3qaQSguLc3e6WY63DqesB6coGPPbSrck4&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020042202nasa-26r-3Demail-2Db214-26l-3D031-2Db07-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=DQZXYlp_5duSjfsNQrbEsVXyPB-3znNT1zuOSE5QSDQ&s=DUwF7-NkAP3qaQSguLc3e6WY63DqesB6coGPPbSrck4&e=>)> (4/21, Rehm) “Philosopher Nicholas Rescher once wrote, “Scientific discoveries are often made not on the basis of some well-contrived plan of investigation, but through some stroke of sheer luck.” For a team of researchers at the Johns Hopkins Applied Physics Laboratory (APL) in Laurel, Maryland, that statement couldn’t be more true. What started as a dry run to ensure instruments on NASA’s Mercury Surface, Space Environment, Geochemistry and Ranging (MESSENGER) spacecraft worked properly later turned into a 10-year saga that resulted in a chance discovery unrelated to the mission’s target planet, Mercury. It’s about Venus and its atmosphere.”

#### Hubble Sees A Galaxy With Spiral Arms, Surrounded By Other Spiral Arms

Universe Today <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020042202nasa-26r-3Demail-2Db214-26l-3D032-2D661-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=DQZXYlp\\_5duSjfsNQrbEsVXyPB-3znNT1zuOSE5QSDQ&s=5mIFzdA\\_pAjZZsM0HQGxRc835XMmUnbgjg6CrVv5E8Y&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020042202nasa-26r-3Demail-2Db214-26l-3D032-2D661-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=DQZXYlp_5duSjfsNQrbEsVXyPB-3znNT1zuOSE5QSDQ&s=5mIFzdA_pAjZZsM0HQGxRc835XMmUnbgjg6CrVv5E8Y&e=>)> (4/21, Williams) “Even after thirty years of faithful service, the Hubble Space Telescope continues to reveal truly fascinating things about our Universe. This includes the image (shown at top) taken of the astronomical feature known as NGC 2273, a barred spiral galaxy similar to the Milky Way. However, upon closer inspection, the image reveals that the spiral arms of this

galaxy contain a second set of spiral arms.”

Space Tech

### Dream Chaser Receives Her Wings Ahead Of Flying To The ISS

NASA Space Flight <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020042202nasa-26r-3Demail-2Db214-26l-3D033-2D7a8-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=DQZXYlp\\_5duSjfsNQrbEsVXyPB-3znNT1zuOSE5QSDQ&s=IWNpZ1mZFBI-4\\_yftMExTT406Etv2J9ThyCkF\\_W7\\_l&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020042202nasa-26r-3Demail-2Db214-26l-3D033-2D7a8-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=DQZXYlp_5duSjfsNQrbEsVXyPB-3znNT1zuOSE5QSDQ&s=IWNpZ1mZFBI-4_yftMExTT406Etv2J9ThyCkF_W7_l&e=>) (4/21, Kanayama) “Sierra Nevada Corporation (SNC) has announced its Louisville, Colorado production facility has received the first delivery of the Dream Chaser’s wings. The integration of the wings will provide a major milestone on Dream Chaser’s path to launching her first cargo resupply mission to the International Space Station under the CRS2 contract. The arrival of the wings allows the integration of the complex Wing Deployment System (WDS) as the Dream Chaser continues assembly and integration.”

### NASA Awards Contract For TSIS-2 To LASP

Aerospace Technology <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020042202nasa-26r-3Demail-2Db214-26l-3D034-2D540-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=DQZXYlp\\_5duSjfsNQrbEsVXyPB-3znNT1zuOSE5QSDQ&s=cUcR0ReE7f5RE1GkW8-Lj1Uyix0AA4TynvnOucCguwE&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020042202nasa-26r-3Demail-2Db214-26l-3D034-2D540-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=DQZXYlp_5duSjfsNQrbEsVXyPB-3znNT1zuOSE5QSDQ&s=cUcR0ReE7f5RE1GkW8-Lj1Uyix0AA4TynvnOucCguwE&e=>) (4/21) “NASA has awarded a contract for the Total and Spectral Solar Irradiance Sensor-2 (TSIS-2) to the Laboratory for Atmospheric and Space Physics (LASP) at the University of Colorado Boulder. The new sensor will provide continuity to data delivered by TSIS-1, which was launched in December 2017.”

### Osiris-Rex Clears One Test, Prepares For June Trial

Aviation Week <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020042202nasa-26r-3Demail-2Db214-26l-3D035-2Dfe4-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=DQZXYlp\\_5duSjfsNQrbEsVXyPB-3znNT1zuOSE5QSDQ&s=FCIVcRFyGJO6W\\_u54UUH9oDzempH8JNVaXKa2xLiME&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020042202nasa-26r-3Demail-2Db214-26l-3D035-2Dfe4-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=DQZXYlp_5duSjfsNQrbEsVXyPB-3znNT1zuOSE5QSDQ&s=FCIVcRFyGJO6W_u54UUH9oDzempH8JNVaXKa2xLiME&e=>) (4/22) “Osiris-Rex, NASA’s first-ever asteroid sample-return mission, is poised to execute its second dress rehearsal June 23 in preparation for a touchdown in August. Preliminary data shows that Osiris, a \$1...”

Various

### NASA Adjusting Its Strategy For LEO Commercialization

Space News <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020042202nasa-26r-3Demail-2Db214-26l-3D036-2D87c-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=DQZXYlp\\_5duSjfsNQrbEsVXyPB-3znNT1zuOSE5QSDQ&s=D2II4qPN1Zg736SVaONTR0Jx9KOGb04cowpW4c68AK4&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020042202nasa-26r-3Demail-2Db214-26l-3D036-2D87c-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=DQZXYlp_5duSjfsNQrbEsVXyPB-3znNT1zuOSE5QSDQ&s=D2II4qPN1Zg736SVaONTR0Jx9KOGb04cowpW4c68AK4&e=>) (4/21, Foust) “Less than a year after rolling out a broad strategy for supporting commercial activity in low Earth orbit, NASA is working to revise that strategy while restructuring its management of commercial initiatives. In June 2019, NASA published its plans for supporting commercial activity on the International Space Station and, ultimately, commercial facilities in LEO. That

strategy had five elements, ranging from setting up commercial use and pricing policies for the ISS to supporting development of commercial modules and stimulating demand for those facilities.”

#### NASA Working On RPA Security Plan To Set Unattended Bots In Motion

Federal News Network <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020042202nasa-26r-3Demail-2Db214-26l-3D037-2D34c-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=DQZXYlp\\_5duSjfsNQrbEsVXyPB-3znNT1zuOSE5QSDQ&s=odF44SN9bQXg81vFAvVCtH51vkchf9Gqkkq73L\\_AnoA&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020042202nasa-26r-3Demail-2Db214-26l-3D037-2D34c-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=DQZXYlp_5duSjfsNQrbEsVXyPB-3znNT1zuOSE5QSDQ&s=odF44SN9bQXg81vFAvVCtH51vkchf9Gqkkq73L_AnoA&e=>) (4/21, Heckman) “Three years into its work with robotic process automation, the NASA Shared Services Center scored some ‘quick wins’ fielding bots to streamline tasks for the agency’s chief information officer and chief financial officer. Pam Wolfe, the chief of NASA’s Enterprise Services Division, said automation has played a key role in an agency-wide mission realignment to rethink all of its major lines of business.”

#### Mark Kelly Sidesteps Self-Imposed Ban On Corporate PAC Money

Washington Free Beacon <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020042202nasa-26r-3Demail-2Db214-26l-3D038-2D8a4-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=DQZXYlp\\_5duSjfsNQrbEsVXyPB-3znNT1zuOSE5QSDQ&s=S5imDAcyowZTFJZVUSYTOGc7uRxzec9Cbrjtj2G\\_F8&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020042202nasa-26r-3Demail-2Db214-26l-3D038-2D8a4-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=DQZXYlp_5duSjfsNQrbEsVXyPB-3znNT1zuOSE5QSDQ&s=S5imDAcyowZTFJZVUSYTOGc7uRxzec9Cbrjtj2G_F8&e=>) (4/22) “Arizona Democratic Senate candidate Mark Kelly, who has decried the influence of corporate money in politics, is using a loophole to benefit from it. ... The former NASA astronaut has made \$1.8 million from speeches, including \$290,400 since his campaign launched. Some of the engagements were sponsored by Goldman Sachs, Optum, and the Mortgage Bankers Association.”

#### Other

#### Falcon 9 To Become U.S. Rocket Leader; Starlink “Where Are They Now” Edition

NASA Space Flight <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020042202nasa-26r-3Demail-2Db214-26l-3D039-2Ded0-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=DQZXYlp\\_5duSjfsNQrbEsVXyPB-3znNT1zuOSE5QSDQ&s=awtdQE0iYEkFct4Tilrj6pyLtoVdqUzny0kCSHb1r8&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020042202nasa-26r-3Demail-2Db214-26l-3D039-2Ded0-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=DQZXYlp_5duSjfsNQrbEsVXyPB-3znNT1zuOSE5QSDQ&s=awtdQE0iYEkFct4Tilrj6pyLtoVdqUzny0kCSHb1r8&e=>) (4/21, Gebhardt, Lentz) “As SpaceX continues its steady march of Starlink internet satellite launches, the company reaches a new milestone with the seventh flight of Starlink on Wednesday: Falcon 9 takes the mantle of “most flown currently operational U.S. rocket” from Atlas V. Meanwhile, SpaceX is actively making moves on the ground, securing FCC permits for Starlink ground terminals/stations across the United States.”

#### Virgin Galactic Dealmaker Defies IPO Lull With \$720 Million Blank-check Deal

Reuters <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020042202nasa-26r-3Demail-2Db214-26l-3D03a-2Dc21-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=DQZXYlp\\_5duSjfsNQrbEsVXyPB-3znNT1zuOSE5QSDQ&s=HY2dLB9FVONcKIWGD-F45kDSYOG01-QS\\_JYJBB-xQc&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020042202nasa-26r-3Demail-2Db214-26l-3D03a-2Dc21-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=DQZXYlp_5duSjfsNQrbEsVXyPB-3znNT1zuOSE5QSDQ&s=HY2dLB9FVONcKIWGD-F45kDSYOG01-QS_JYJBB-xQc&e=>) (4/21, Franklin) “Virgin Galactic Holdings Inc (SPCE.N) Chairman Chamath

Palihapitiya on Tuesday raised \$720 million for a new blank-check company, 20% more than its original target, after the coronavirus crisis upended plans last month. The IPO represents a rare example of a stock market debut braving the volatility fueled by the economic fallout of the pandemic. Only two IPOs have priced so far in April, compared to 14 a year ago, according data provider IPO Boutique. Both were biotechnology firms, a sector with a more specialized investor base.”

#### SpaceX Returns To The Launch Pad, And There Are A Few Things To Watch For

Ars Technica <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020042202nasa-26r-3Demail-2Db214-26l-3D03b-2Dfe8-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=DQZXYIp\\_5duSjfsNQrbEsVXyPB-3znNT1zuOSE5QSDQ&s=QGIHkzZLwyqJZBmwol5Gii01axs6HuEIABb7L-FTuwo&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020042202nasa-26r-3Demail-2Db214-26l-3D03b-2Dfe8-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=DQZXYIp_5duSjfsNQrbEsVXyPB-3znNT1zuOSE5QSDQ&s=QGIHkzZLwyqJZBmwol5Gii01axs6HuEIABb7L-FTuwo&e=>) (4/21, Berger) “SpaceX has targeted Wednesday afternoon for the next launch of its Falcon 9 rocket from a pad at Kennedy Space Center. This mission will launch the sixth batch of operational Starlink satellites, bringing the company closer to offering initial broadband Internet access to North America. However, the Starlink-6 launch—set for 3:37pm ET (19:37 UTC)—is notable for reasons beyond the simple extension of the company’s Starlink network. Can they land it?”

#### Why Elon Musk’s Starlink Satellites Are Upsetting Stargazers – Again

CNN Business <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020042202nasa-26r-3Demail-2Db214-26l-3D03c-2Dd93-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=DQZXYIp\\_5duSjfsNQrbEsVXyPB-3znNT1zuOSE5QSDQ&s=MkGDUe-mKwDwr7LwG8fb8hLCdYcInx83LD-dsVZAKZE&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020042202nasa-26r-3Demail-2Db214-26l-3D03c-2Dd93-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=DQZXYIp_5duSjfsNQrbEsVXyPB-3znNT1zuOSE5QSDQ&s=MkGDUe-mKwDwr7LwG8fb8hLCdYcInx83LD-dsVZAKZE&e=>) (4/21, Guy) “Billionaire tech entrepreneur Elon Musk can be a controversial figure. Not surprisingly, one of his projects has managed to frustrate stargazers. Hundreds of satellites owned by Musk’s company, SpaceX, have been launched as part of Starlink, a project to increase global internet coverage, but their presence is disrupting observations of the night sky.”

#### SpaceX’s Starlink Satellites Are Visible Across Western Europe – Here’s Why And How You Can Spot Them Flaring In The Night Sky

Business Insider <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020042202nasa-26r-3Demail-2Db214-26l-3D03d-2D526-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=DQZXYIp\\_5duSjfsNQrbEsVXyPB-3znNT1zuOSE5QSDQ&s=qS5i2Joibs9eTSnQxaKZVnAt1ezGgsTB1QSQ0Tv2NGw&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020042202nasa-26r-3Demail-2Db214-26l-3D03d-2D526-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=DQZXYIp_5duSjfsNQrbEsVXyPB-3znNT1zuOSE5QSDQ&s=qS5i2Joibs9eTSnQxaKZVnAt1ezGgsTB1QSQ0Tv2NGw&e=>) (4/21, Ghosh) “If you saw a peculiar trail of UFOs in the UK on Monday night, don’t be too alarmed — they were probably Starlink satellites. SpaceX, the space exploration company founded by Elon Musk, plans to put thousands of satellites into space to beam internet access down to remote parts of the Earth. There are already almost 300 Starlink satellites in orbit right now, and some are visible to the naked eye, depending on where they are.”

#### Elon Musk’s Starlink Display Will Continue All Week – When To See It From UK

Daily Mirror (UK) <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020042202nasa-26r-3Demail-2Db214-26l-3D03e-2D00e-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=DQZXYIp\\_5duSjfsNQrbEsVXyPB-3znNT1zuOSE5QSDQ&s=i65T-](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020042202nasa-26r-3Demail-2Db214-26l-3D03e-2D00e-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=DQZXYIp_5duSjfsNQrbEsVXyPB-3znNT1zuOSE5QSDQ&s=i65T-)



mB5Yv2IEjCi5m0Whz76niQcWCPuXDLhhNQepck&e=> (4/21, Best) "Earlier this week, many baffled Brits took to Twitter after spotting UFO-like lights racing through the night sky. Thankfully, aliens weren't to blame for the lights, and instead they were satellites from Elon Musk 's Starlink fleet. They form a constellation of thousands of satellites, and are designed to provide low-cost broadband internet service from low Earth orbit."

The UAE Wants To Send People To Mars. But First, A Practice Round On Earth.

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Russian Space Official Tests Positive For Coronavirus After Attending Soyuz Crew Launch To Space Station

SPACE <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020042202nasa-26r-3Demail-2Db214-26l-3D040-2D6b4-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=DQZXYlp\\_5duSjfsNQrbEsVXyPB-3znNT1zuOSE5QSDQ&s=6CadiK7BZVR3kvaJ5BI0YC\\_w6Y1\\_WxRe\\_XhRb\\_6FJb0&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020042202nasa-26r-3Demail-2Db214-26l-3D040-2D6b4-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=DQZXYlp_5duSjfsNQrbEsVXyPB-3znNT1zuOSE5QSDQ&s=6CadiK7BZVR3kvaJ5BI0YC_w6Y1_WxRe_XhRb_6FJb0&e=>) (4/21, Gohd) "A Russian space official has tested positive for COVID-19, the disease caused by the novel coronavirus, but it's "impossible" that any contamination has spread to the International Space Station, Russia's space agency told Space.com. On April 15, the Russian news agency TASS confirmed that Evgeny Mikrin, the deputy CEO and chief designer at RSC Energia, tested positive for coronavirus."

Europe's Planet-Hunting CHEOPS Telescope Spies Its 1st Alien Worlds

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How To Watch SpaceX Launch 60 More Starlink Satellites Wednesday

CNET News <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020042202nasa-26r-3Demail-2Db214-26l-3D042-2D301-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=DQZXYlp\\_5duSjfsNQrbEsVXyPB-3znNT1zuOSE5QSDQ&s=tJOSaX1M1trCHPykHLxjwDJcDPjGkyNlbfMtuxrO87Q&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020042202nasa-26r-3Demail-2Db214-26l-3D042-2D301-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=DQZXYlp_5duSjfsNQrbEsVXyPB-3znNT1zuOSE5QSDQ&s=tJOSaX1M1trCHPykHLxjwDJcDPjGkyNlbfMtuxrO87Q&e=>) (4/21, Mack) "While much of the planet is shut down due to the coronavirus pandemic, it's still business as usual in low-Earth orbit where the

nascent SpaceX Starlink broadband constellation is set to welcome 60 new satellites into its ranks. A Falcon 9 rocket is scheduled to launch from Kennedy Space Center in Florida at 12:37 p.m. PT on Wednesday. Although the batch is dubbed Starlink 6, it will actually be the seventh group of 60 orbiting routers to be sent into space.”

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## **[EXTERNAL] NASA Morning Briefing for Wednesday, August 5, 2020**

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### Editor's Note

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We All Have A Stake In SpaceX's Success. The Pandemic Ought To Make Clear Why.

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Elon Musk's Spacecraft Roared Like 'An Animal.' But Astronauts Say The SpaceX Dragon Flew Flawlessly.

Washington Post <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020080502nasa-26r-3Demail-2Dbd5e-26l-3D004-2D82a-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=CNvECLhY6sxSDLbNayX1CHeJEV3GXdvWwV5yRpjYcaY&s=eULKk3NVsAyG2RggLhYluM3AEEBczgup3Bc55GnW5IA&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020080502nasa-26r-3Demail-2Dbd5e-26l-3D004-2D82a-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=CNvECLhY6sxSDLbNayX1CHeJEV3GXdvWwV5yRpjYcaY&s=eULKk3NVsAyG2RggLhYluM3AEEBczgup3Bc55GnW5IA&e=>) (8/4, Davenport) "Dragon roared on the way down. As it plunged into the atmosphere Sunday on its way back to Earth from the International Space Station, the spacecraft 'really came alive,' NASA astronaut Bob Behnken said. 'It doesn't sound like a machine; it sounds like an animal.'"

SpaceX Crew Dragon Astronauts Describe Thrilling Return To Earth

CBS News <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020080502nasa-26r-3Demail-2Dbd5e-26l-3D005-2D529-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=CNvECLhY6sxSDLbNayX1CHeJEV3GXdvWwV5yRpjYcaY&s=noTYxQzEsAFJDPVRTTlu0\\_wWnboB2JoojaFs\\_1k-nmE&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020080502nasa-26r-3Demail-2Dbd5e-26l-3D005-2D529-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=CNvECLhY6sxSDLbNayX1CHeJEV3GXdvWwV5yRpjYcaY&s=noTYxQzEsAFJDPVRTTlu0_wWnboB2JoojaFs_1k-nmE&e=>) (8/4, Harwood) "Plunging back to Earth in a SpaceX Crew Dragon capsule Sunday amounted to a high-speed thrill ride, astronauts Douglas Hurley and Robert Behnken reported Tuesday. The fiery, flawlessly-controlled descent to splashdown went off without a hitch — a major step toward certifying the vehicle for

operational flights.”

#### SpaceX Launches Starship Prototype On Dramatic Test Flight

CBS News <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020080502nasa-26r-3Demail-2Dbd5e-26l-3D006-2Dc53-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=CNvECLhY6sxSDLbNayX1ChEJEV3GXdvWwV5yRpjYcaY&s=9IBKHypBG1t0Y5Up-Nk3yzXKBcQSScnek2h0GPwgtNM&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020080502nasa-26r-3Demail-2Dbd5e-26l-3D006-2Dc53-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=CNvECLhY6sxSDLbNayX1ChEJEV3GXdvWwV5yRpjYcaY&s=9IBKHypBG1t0Y5Up-Nk3yzXKBcQSScnek2h0GPwgtNM&e=>) (8/4, Harwood) “After repeated delays for a variety of technical issues, SpaceX successfully launched a methane-powered prototype of its planned high-power Starship rocket on Tuesday. The company sent a dummy stage aloft from its south Texas test facility for a brief up-and-down hop to a nearby landing pad. The test flight came just two days after a SpaceX Crew Dragon spacecraft brought two NASA astronauts safely back to Earth with a Gulf of Mexico splashdown after a near-flawless test flight expected to clear the way for operational missions later this year.”

#### New NASA Office Coordinates Rideshare Launches Of Smallsat Science Missions

Space News <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020080502nasa-26r-3Demail-2Dbd5e-26l-3D007-2D9b7-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=CNvECLhY6sxSDLbNayX1ChEJEV3GXdvWwV5yRpjYcaY&s=tC-ZYKf9Ric50WdXgpRxlF5kJvmnyeE2d0SvpVbJV64&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020080502nasa-26r-3Demail-2Dbd5e-26l-3D007-2D9b7-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=CNvECLhY6sxSDLbNayX1ChEJEV3GXdvWwV5yRpjYcaY&s=tC-ZYKf9Ric50WdXgpRxlF5kJvmnyeE2d0SvpVbJV64&e=>) (8/4, Foust) “NASA has established an office to coordinate rideshare launch opportunities for its growing number of smallsat science missions, taking advantage of excess capacity on launches of larger spacecraft. NASA’s Science Mission Directorate (SMD) established the rideshare office earlier this year as part of broader efforts to promote the use of cubesats and other smallsats to carry out a wide range of missions.”

Flight

No content.

Earth

#### Lasers In Daylight Can Better Detect Space Debris Orbiting Earth, New Study Suggests

CNN <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020080502nasa-26r-3Demail-2Dbd5e-26l-3D008-2Defa-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=CNvECLhY6sxSDLbNayX1ChEJEV3GXdvWwV5yRpjYcaY&s=KH0XB2ZRmwcP0BjIONxeYgOde8ISCNmBYVKxx8G-Fs&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020080502nasa-26r-3Demail-2Dbd5e-26l-3D008-2Defa-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=CNvECLhY6sxSDLbNayX1ChEJEV3GXdvWwV5yRpjYcaY&s=KH0XB2ZRmwcP0BjIONxeYgOde8ISCNmBYVKxx8G-Fs&e=>) (8/4, Prior) “In director Alfonso Cuarón’s 2013 space thriller ‘Gravity,’ Sandra Bullock’s astronaut character dons a suit for a spacewalk in orbit around Earth, upgrading hardware on the Hubble Space Telescope. ... In that time, space agencies have tracked at least 20,000 pieces of debris larger than a softball orbiting our planet, whizzing by at velocities up to 17,500 miles per hour, speeds that could rip through a satellite or a manned spacecraft, NASA has said.”

#### NASA Providing Data On Tropical Storm Isaias As It Blankets Eastern Seaboard

Phys (UK) <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020080502nasa-26r-3Demail-2Dbd5e-26l-3D009-2Dcb4-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=CNvECLhY6sxSDLbNayX1ChEJEV3GXdvWwV5yRpjYcaY&s=KH0XB2ZRmwcP0BjIONxeYgOde8ISCNmBYVKxx8G-Fs&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020080502nasa-26r-3Demail-2Dbd5e-26l-3D009-2Dcb4-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=CNvECLhY6sxSDLbNayX1ChEJEV3GXdvWwV5yRpjYcaY&s=KH0XB2ZRmwcP0BjIONxeYgOde8ISCNmBYVKxx8G-Fs&e=>)

8-mHkTTiYCEf5ROyus&m=CNvECLhY6sxSDLbNayX1CHeJEV3GXdvWwV5yRpjYcaY&s=\_qPyTQGxmHLi-7pXAEcgbWOwqSZbyF8QAhQ\_7JZvidl&e=> (8/4) "Tropical Storm Isaias made landfall late on Aug. 3 and by today, Aug. 4, the huge storm stretched from Virginia to Maine. NASA satellites have been providing forecasters with rainfall rates, cloud top temperatures, storm extent and strength as Isaias batters the U.S. East Coast."

#### NASA's Aqua Satellite Shows Two Views Of The Apple Fire

Phys (UK) <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020080502nasa-26r-3Demail-2Dbd5e-26l-3D00a-2D254-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=CNvECLhY6sxSDLbNayX1CHeJEV3GXdvWwV5yRpjYcaY&s=ZYbk2l7liRWcGr9Ywc4-NWvv9wuBLxaj1Wn9JYuoynU&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020080502nasa-26r-3Demail-2Dbd5e-26l-3D00a-2D254-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=CNvECLhY6sxSDLbNayX1CHeJEV3GXdvWwV5yRpjYcaY&s=ZYbk2l7liRWcGr9Ywc4-NWvv9wuBLxaj1Wn9JYuoynU&e=>) (8/4) "NASA's Aqua satellite took images of the Apple Fire as it continued to spread north across the head of the Mill Creek Canyon, and east into the San Gorgonio Wilderness near San Bernardino, Calif. on Aug. 03, 2020. The fire is now burning into more wilderness (where vegetation is sparse) than wooded area limiting the intensity of the fire due to a lack of fuel. Continued fire activity is due to the record low moisture content of the vegetation fuel, high temperatures and low humidity throughout the area."

#### NASA Infrared Imagery Shows Hagupit Nearing Landfall In China

Phys (UK) <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020080502nasa-26r-3Demail-2Dbd5e-26l-3D00b-2D365-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=CNvECLhY6sxSDLbNayX1CHeJEV3GXdvWwV5yRpjYcaY&s=2aqY8OwC\\_3BCOpSZ3C0LzWuFc8e8jwdy3LnnOwAKagU&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020080502nasa-26r-3Demail-2Dbd5e-26l-3D00b-2D365-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=CNvECLhY6sxSDLbNayX1CHeJEV3GXdvWwV5yRpjYcaY&s=2aqY8OwC_3BCOpSZ3C0LzWuFc8e8jwdy3LnnOwAKagU&e=>) (8/4, Gutro) "NASA's Aqua satellite provided a look at Typhoon Hagupit as it was nearing landfall in southeastern China. One of the ways NASA researches tropical cyclones is using infrared data that provides temperature information. Cloud top temperatures provide information to forecasters about where the strongest storms are located within a tropical cyclone. Tropical cyclones do not always have uniform strength, and some sides have stronger sides than others. The stronger the storms, the higher they extend into the troposphere, and the colder the cloud temperatures."

#### Humans in Space

We All Have A Stake In SpaceX's Success. The Pandemic Ought To Make Clear Why.

Washington Post <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020080502nasa-26r-3Demail-2Dbd5e-26l-3D00c-2D552-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=CNvECLhY6sxSDLbNayX1CHeJEV3GXdvWwV5yRpjYcaY&s=5rh579CqKWTEcgit9O7Y7ubCHJ1cIk5QE6rojcS9nC8&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020080502nasa-26r-3Demail-2Dbd5e-26l-3D00c-2D552-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=CNvECLhY6sxSDLbNayX1CHeJEV3GXdvWwV5yRpjYcaY&s=5rh579CqKWTEcgit9O7Y7ubCHJ1cIk5QE6rojcS9nC8&e=>) (8/4, McArdle) "Something amazing happened on Sunday, and almost no one seemed to care. Two men had burst out of Earth's stratosphere in May, propelled by more than 1.7 million pounds of rocket-fueled thrust. On Sunday, they returned safely. The joint mission between NASA and SpaceX was the first time in nine years that the United States had sent astronauts to the International Space Station under our own power, rather than snagging a ride on a Russian rocket."

#### Elon Musk's Spacecraft Roared Like 'An Animal.' But Astronauts Say The SpaceX Dragon Flew Flawlessly.

Washington Post <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020080502nasa-26r-3Demail-2Dbd5e-26l-3D00d-](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020080502nasa-26r-3Demail-2Dbd5e-26l-3D00d-)



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mHkTTiYCEf5ROyus&m=CNvECLhY6sxSDLbNayX1ChEJEV3GXdvWwV5yRpjYcaY&s=thScQOldEPQHfte1e75zRisEwr0TPBKhc6\_XMqK\_kF0&e=> (8/4, Davenport) "Dragon roared on the way down. As it plunged into the atmosphere Sunday on its way back to Earth from the International Space Station, the spacecraft 'really came alive,' NASA astronaut Bob Behnken said. 'It doesn't sound like a machine; it sounds like an animal.'"

#### SpaceX Crew Dragon Astronauts Describe Thrilling Return To Earth

CBS News <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020080502nasa-26r-3Demail-2Dbd5e-26l-3D00e-2D674-26t-](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020080502nasa-26r-3Demail-2Dbd5e-26l-3D00e-2D674-26t-)

3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=CNvECLhY6sxSDLbNayX1ChEJEV3GXdvWwV5yRpjYcaY&s=SYJwd1ivDal-

TIXTv21XOnQ492uUVmtGikJwWt7fHCo&e=> (8/4, Harwood) "Plunging back to Earth in a SpaceX Crew Dragon capsule Sunday amounted to a high-speed thrill ride, astronauts Douglas Hurley and Robert Behnken reported Tuesday. The fiery, flawlessly-controlled descent to splashdown went off without a hitch — a major step toward certifying the vehicle for operational flights."

#### 'It Came Alive:' Astronauts Recount Wild Ride Home On SpaceX's Crew Dragon

Reuters <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020080502nasa-26r-3Demail-2Dbd5e-26l-3D00f-2D4dc-26t-](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020080502nasa-26r-3Demail-2Dbd5e-26l-3D00f-2D4dc-26t-)

3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-

mHkTTiYCEf5ROyus&m=CNvECLhY6sxSDLbNayX1ChEJEV3GXdvWwV5yRpjYcaY&s=IPW6DBCgzgxC9G9UtWemkjVUVyCYDo6Zm3Hv0aPpf5U&e=> (8/5, Roulette) "U.S. astronauts Bob Behnken and Doug Hurley, home two days from a landmark mission as NASA's first crew to fly a privately built vehicle into orbit, recounted on Tuesday the loud, jarring ride they experienced through Earth's atmosphere before a safe landing at sea. Their splash-down on Sunday in the Gulf of Mexico off Florida – a mode of return for human spaceflight last used by NASA 45 years ago – capped the first launch of astronauts from U.S. soil in nine years."

#### Astronauts Talk About Successful SpaceX Mission And Splashdown

CBS News <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020080502nasa-26r-3Demail-2Dbd5e-26l-3D010-2D33b-26t-](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020080502nasa-26r-3Demail-2Dbd5e-26l-3D010-2D33b-26t-)

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mHkTTiYCEf5ROyus&m=CNvECLhY6sxSDLbNayX1ChEJEV3GXdvWwV5yRpjYcaY&s=mQJbueP4H9G4TZVLEe7PDLLeUVNcrJ3z9MwCpj2uE560&e=> (8/4) "NASA astronauts Bob Behnken and Doug Hurley held a news conference after their return from the International Space Station aboard the SpaceX Crew Dragon, the first commercial spacecraft to carry astronauts into orbit. Watch a portion of their remarks."

#### Astronauts: SpaceX Dragon Capsule 'Came Alive' On Descent

Associated Press <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020080502nasa-26r-3Demail-2Dbd5e-26l-3D011-](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020080502nasa-26r-3Demail-2Dbd5e-26l-3D011-2Dd42-26t-)

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3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-

mHkTTiYCEf5ROyus&m=CNvECLhY6sxSDLbNayX1ChEJEV3GXdvWwV5yRpjYcaY&s=Fu8MAifzu0qPeBnQ3ID1HZ

5uhVP1LCAxBVifKQ1Ks-U&e=> (8/4, Dunn) "The astronauts on SpaceX's first crew flight said Tuesday that their Dragon capsule "came alive" and sounded like a beast as it descended through the atmosphere to a smooth splashdown in the Gulf of Mexico. Two days after returning from the International Space Station, NASA's Bob Behnken described in vivid detail their wild ride home. SpaceX had provided Behnken and Doug Hurley video and audio of previous splashdowns, so they wouldn't be startled during the test flight."

#### 'It Sounds Like An Animal': NASA Astronauts Describe The Crew Dragon Re-Entry Experience

SPACE <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020080502nasa-26r-3Demail-2Dbd5e-26l-3D012-2D407-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=CNvECLhY6sxSDLbNayX1CHeJEV3GXdvWwV5yRpjYcaY&s=yuBRpMQAnUgVY3Bb-1M7g-bx5A3fPjVWfgBZKIVZ1Do&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020080502nasa-26r-3Demail-2Dbd5e-26l-3D012-2D407-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=CNvECLhY6sxSDLbNayX1CHeJEV3GXdvWwV5yRpjYcaY&s=yuBRpMQAnUgVY3Bb-1M7g-bx5A3fPjVWfgBZKIVZ1Do&e=>) (8/4, Howell) "SpaceX's Crew Dragon spacecraft practically came alive during its dramatic dive through Earth's atmosphere on Sunday (Aug. 2), its NASA crew reported. NASA astronauts Bob Behnken and Doug Hurley said they felt shimmies, tremors and rolls as the capsule, named Endeavour, returned to Earth Sunday to wrap up the nearly picture-perfect Demo-2, SpaceX's first-ever crewed mission."

#### 'Space Dad' Jokes: NASA Astronauts Made Prank Calls After Historic SpaceX Splashdown

SPACE <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020080502nasa-26r-3Demail-2Dbd5e-26l-3D013-2Dc30-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=CNvECLhY6sxSDLbNayX1CHeJEV3GXdvWwV5yRpjYcaY&s=6qT7IYXWQc0CNcfG9ABR Bi60W0pInQG8-h04DFxqHlk&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020080502nasa-26r-3Demail-2Dbd5e-26l-3D013-2Dc30-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=CNvECLhY6sxSDLbNayX1CHeJEV3GXdvWwV5yRpjYcaY&s=6qT7IYXWQc0CNcfG9ABR Bi60W0pInQG8-h04DFxqHlk&e=>) (8/4, Wall) "NASA astronauts Bob Behnken and Doug Hurley returned from orbit with their senses of humor intact. The duo splashed down in the Gulf of Mexico near Pensacola, Florida, Sunday (Aug. 2), wrapping up SpaceX's historic Demo-2 mission to the International Space Station. Behnken and Hurley had a bit of time to kill as they waited for recovery crews to fish out and inspect their Crew Dragon capsule, so they decided to make a few calls."

#### Splashdown: Noise, Shimmy, Jerks – Then You're Bobbing Along

Houston Chronicle <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020080502nasa-26r-3Demail-2Dbd5e-26l-3D014-2D182-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=CNvECLhY6sxSDLbNayX1CHeJEV3GXdvWwV5yRpjYcaY&s=o1u6yuHUbpm6evZAKiUP8E5FUFIiAJEv2diVcrOx30&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020080502nasa-26r-3Demail-2Dbd5e-26l-3D014-2D182-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=CNvECLhY6sxSDLbNayX1CHeJEV3GXdvWwV5yRpjYcaY&s=o1u6yuHUbpm6evZAKiUP8E5FUFIiAJEv2diVcrOx30&e=>) (8/4, Leinfelder) "It started pretty smooth as the SpaceX Crew Dragon capsule, still orbiting the Earth, fired its thrusters for about 12 minutes to put NASA astronauts Bob Behnken and Doug Hurley on course for splashdown. Their bodies began to shimmy as the spacecraft descended through Earth's atmosphere. They could feel it roll and pitch as thrusters fired almost continuously to keep them pointed in the right direction."

#### Astronauts On Return To Earth In Dragon Capsule

USA Today <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020080502nasa-26r-3Demail-2Dbd5e-26l-3D015-2D358-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=CNvECLhY6sxSDLbNayX1CHeJEV3GXdvWwV5yRpjYcaY&s=5Ed-optjgI9LnLrTljkLHhUcpFkEYo-t3UmLZ9kZKTs&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020080502nasa-26r-3Demail-2Dbd5e-26l-3D015-2D358-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=CNvECLhY6sxSDLbNayX1CHeJEV3GXdvWwV5yRpjYcaY&s=5Ed-optjgI9LnLrTljkLHhUcpFkEYo-t3UmLZ9kZKTs&e=>) (8/4) "NASA astronauts Bob Behnken and Doug Hurley discuss their return to Earth, two days after returning from orbit on SpaceX's dragon capsule."

## NASA Astronaut Bob Behnken Said The Fiery Plunge On SpaceX's Crew Dragon 'Felt Like We Were Inside Of An Animal'

Business Insider <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020080502nasa-26r-3Demail-2Dbd5e-26l-3D016-2D988-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=CNvECLhY6sxSDLbNayX1CHeJEV3GXdvWwV5yRpjYcaY&s=dqZ3RwWuymEA906I0v-w-pm80PvxCvHCxYJSKm8bl50&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020080502nasa-26r-3Demail-2Dbd5e-26l-3D016-2D988-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=CNvECLhY6sxSDLbNayX1CHeJEV3GXdvWwV5yRpjYcaY&s=dqZ3RwWuymEA906I0v-w-pm80PvxCvHCxYJSKm8bl50&e=>)

(8/4, McFall-Johnsen) "NASA astronauts Bob Behnken and Doug Hurley plunged through Earth's atmosphere at 25 times the speed of sound on Sunday, slowing just in time to land safely off the coast of Pensacola, Florida. The splashdown concluded their two-month mission flying SpaceX's new spaceship — the Crew Dragon — to the International Space Station and back, making them the first people to ever fly aboard a commercial spacecraft."

## Astronauts Praise 'Flawless' SpaceX Capsule Landing

UPI <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020080502nasa-26r-3Demail-2Dbd5e-26l-3D017-2Df00-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=CNvECLhY6sxSDLbNayX1CHeJEV3GXdvWwV5yRpjYcaY&s=bbH2ozJHevH-9mJNrkM-N5BEx95rOzz5YtT8EIEFgbl&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020080502nasa-26r-3Demail-2Dbd5e-26l-3D017-2Df00-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=CNvECLhY6sxSDLbNayX1CHeJEV3GXdvWwV5yRpjYcaY&s=bbH2ozJHevH-9mJNrkM-N5BEx95rOzz5YtT8EIEFgbl&e=>)

(8/4, Brinkmann) "Two NASA astronauts who returned from space to a splashdown in the Gulf of Mexico on Sunday praised the SpaceX Dragon capsule's performance in their first public comments since the mission. 'We're so proud of the SpaceX and NASA teams to get Dragon through its first crewed flight flawlessly,' Doug Hurley said."

## 'Thanks For Flying SpaceX'

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(8/4, Koren) "In recent years, as SpaceX launched rocket after rocket without incident, liftoff became the company's second-most-impressive feat. The truly dazzling moment came after the rocket had left the ground, and its booster—or, sometimes, two boosters—reversed course high up in the air, flipped around, and glided back down, landing upright on the ground or a barge floating in the Atlantic Ocean, ready to be refurbished and used again. What once seemed like science fiction has become a SpaceX signature."

## New Video Shows SpaceX's Astronaut Crew Plummeting Through Earth's Atmosphere, Floating Under Parachutes, And Landing In The Ocean

Business Insider <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020080502nasa-26r-3Demail-2Dbd5e-26l-3D019-2D22c-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=CNvECLhY6sxSDLbNayX1CHeJEV3GXdvWwV5yRpjYcaY&s=HBioxmjgrw2bY5O3z6-IXvbbHB5QCuXvV3GG95GOnM4&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020080502nasa-26r-3Demail-2Dbd5e-26l-3D019-2D22c-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=CNvECLhY6sxSDLbNayX1CHeJEV3GXdvWwV5yRpjYcaY&s=HBioxmjgrw2bY5O3z6-IXvbbHB5QCuXvV3GG95GOnM4&e=>)

(8/4, McFall-Johnsen) "SpaceX and NASA just accomplished a historic feat: the first-ever crewed commercial spaceflight mission. After a high-risk, fiery plunge through Earth's atmosphere, the Crew Dragon spaceship successfully deployed four parachutes to land in the Gulf of Mexico on Sunday, off the coast of Pensacola, Florida."

## Relive The Final Descent Of SpaceX's Crew Dragon Spacecraft

Spaceflight Now <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020080502nasa-26r-3Demail-2Dbd5e-26l-3D01a-2D3aa-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=CNvECLhY6sxSDLbNayX1ChEJEV3GXdvWwV5yRpjYcaY&s=xfyDtxDrHVpozsdXeEX1ALMF53mACG27AFZIOgObDPg&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020080502nasa-26r-3Demail-2Dbd5e-26l-3D01a-2D3aa-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=CNvECLhY6sxSDLbNayX1ChEJEV3GXdvWwV5yRpjYcaY&s=xfyDtxDrHVpozsdXeEX1ALMF53mACG27AFZIOgObDPg&e=>)> (8/4, Clark) "A video from SpaceX shows the company's Crew Dragon capsule plunging toward the Gulf of Mexico, then unfurling a series of parachutes to slow the spaceship carrying two NASA astronauts from 350 mph to a relatively gentle 15 mph for splashdown Sunday. The dramatic tracking video released by SpaceX late Monday shows the capsule deploying two drogue chutes at an altitude of around 18,000 feet, or 5,500 meters, while moving at about 350 mph, or more than 560 kilometers per hour."

## Interview With Behnken and Hurley

Spectrum News 13 (FL) <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020080502nasa-26r-3Demail-2Dbd5e-26l-3D01b-2Dca9-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=CNvECLhY6sxSDLbNayX1ChEJEV3GXdvWwV5yRpjYcaY&s=nVoST2O3sUeQUmuD\\_xa66Xs4dery0kcRFaob3vHji4U&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020080502nasa-26r-3Demail-2Dbd5e-26l-3D01b-2Dca9-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=CNvECLhY6sxSDLbNayX1ChEJEV3GXdvWwV5yRpjYcaY&s=nVoST2O3sUeQUmuD_xa66Xs4dery0kcRFaob3vHji4U&e=>)> (8/4) "Alright there they are. That was Bob Behnken and Doug Hurley who you just saw. There, we're looking again at video from Sunday when the Crew Dragon capsule did a splashdown."

## Demo-2 Crew Cheers Public/Private Spaceflight Achievement

Aviation Week <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020080502nasa-26r-3Demail-2Dbd5e-26l-3D01c-2D8c2-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=CNvECLhY6sxSDLbNayX1ChEJEV3GXdvWwV5yRpjYcaY&s=HXiG\\_lkWdDLgjTuuDsJonPrwrC6-RyZPo8pccwm4z2U&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020080502nasa-26r-3Demail-2Dbd5e-26l-3D01c-2D8c2-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=CNvECLhY6sxSDLbNayX1ChEJEV3GXdvWwV5yRpjYcaY&s=HXiG_lkWdDLgjTuuDsJonPrwrC6-RyZPo8pccwm4z2U&e=>)> (8/4) "Two days after their successful splashdown, NASA Demo-2 astronauts Doug Hurley and Bob Behnken praised the NASA/SpaceX team behind their test flight and expressed hope the public/private..."

## Behnken And Hurley Return

KCBS-TV Los Angeles <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020080502nasa-26r-3Demail-2Dbd5e-26l-3D01d-2Da6b-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=CNvECLhY6sxSDLbNayX1ChEJEV3GXdvWwV5yRpjYcaY&s=Mqe-Qe3OV\\_f1p1fDpxHdu9xAnF4zMlwBnZ72INCi400&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020080502nasa-26r-3Demail-2Dbd5e-26l-3D01d-2Da6b-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=CNvECLhY6sxSDLbNayX1ChEJEV3GXdvWwV5yRpjYcaY&s=Mqe-Qe3OV_f1p1fDpxHdu9xAnF4zMlwBnZ72INCi400&e=>)> (8/4) "Two NASA astronauts are back home this morning in Houston after their historic two-month mission to the International Space Station. The SpaceX Dragon capsule splash landed in the Gulf of Mexico on Sunday."

## Moon to Mars

## NASA Curiosity Rover Marks 8 Years On Mars With 'Spaghetti Western' View

CNET News <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020080502nasa-26r-3Demail-2Dbd5e-26l-3D01e-2Dc77-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=CNvECLhY6sxSDLbNayX1CHeJEV3GXdvWwV5yRpjYcaY&s=CnanRQy1p4ANQcqq7mq17KglBpZtcmMMRdG636g8SKs&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020080502nasa-26r-3Demail-2Dbd5e-26l-3D01e-2Dc77-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=CNvECLhY6sxSDLbNayX1CHeJEV3GXdvWwV5yRpjYcaY&s=CnanRQy1p4ANQcqq7mq17KglBpZtcmMMRdG636g8SKs&e=>) (8/4, Kooser) " Cue up an Ennio Morricone sound track. NASA released a fresh view of Mars, and it looks like Clint Eastwood is about to stroll across the scene. NASA's Curiosity rover arrived on the red planet on Aug. 5, 2012 (or Aug. 6 depending on your location). To celebrate, the space agency released eight eye-catching images of Mars this week that tie into the rover's past and present experiences on the planet."

## Mars Exploration Takes A Major Leap

Air & Space Smithsonian Magazine <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020080502nasa-26r-3Demail-2Dbd5e-26l-3D01f-2D77a-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=CNvECLhY6sxSDLbNayX1CHeJEV3GXdvWwV5yRpjYcaY&s=j4YOZ6XZ-Qrfo1ojMYC-jfNrlaLexljAq8oWHt52Gqw&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020080502nasa-26r-3Demail-2Dbd5e-26l-3D01f-2D77a-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=CNvECLhY6sxSDLbNayX1CHeJEV3GXdvWwV5yRpjYcaY&s=j4YOZ6XZ-Qrfo1ojMYC-jfNrlaLexljAq8oWHt52Gqw&e=>) (8/4, Schulze-Makuch) "Last week's launch of the Mars 2020 Mission with the Perseverance rover—NASA's heaviest and most advanced rover to date—moved the return of samples from Mars one giant step forward, as the rover is slated to collect Martian soil to be picked up later this decade and brought back to Earth for detailed analysis. Efforts to search for current life on Mars have also moved forward; results of a conference held last November in Carlsbad, New Mexico, called 'Mars Extant Life: What's Next?', have just been published in the journal Astrobiology."

## Early Mars Was Covered In Ice Sheets, Not Flowing Rivers

SpaceRef <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020080502nasa-26r-3Demail-2Dbd5e-26l-3D020-2Dd1f-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=CNvECLhY6sxSDLbNayX1CHeJEV3GXdvWwV5yRpjYcaY&s=qJP8bqXwc8\\_AOkrCVt0NbRXJl77VW9DiQa3cszPiU48&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020080502nasa-26r-3Demail-2Dbd5e-26l-3D020-2Dd1f-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=CNvECLhY6sxSDLbNayX1CHeJEV3GXdvWwV5yRpjYcaY&s=qJP8bqXwc8_AOkrCVt0NbRXJl77VW9DiQa3cszPiU48&e=>) (8/4) "Anna Grau Galofre/Arizona State University Image captured by helicopter over the western edge of the Devon Island ice cap, on western Devon Island in Nunavut. These ice channels, as well as the thermal state of its ice cap, inspired the idea that some Martian valleys didn't originate as rivers but as subglacial channels. ... Gordon Osinski, Director of Western's Institute for Earth and Space Exploration, has led conducted analogue work in the Canadian Arctic for years and studying valley formation on Earth is fundamental to understanding Mars' surface as NASA prepares for human spaceflight to the red planet."

## Tulsa Museum Mars Exhibit

KOKI-TV Tulsa (OK) <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020080502nasa-26r-3Demail-2Dbd5e-26l-3D021-2Dc18-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=CNvECLhY6sxSDLbNayX1CHeJEV3GXdvWwV5yRpjYcaY&s=jAXTatn5ZR-5qdOOKgSBrERZu3pZkWC.JhTy3xHkXPM&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020080502nasa-26r-3Demail-2Dbd5e-26l-3D021-2Dc18-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=CNvECLhY6sxSDLbNayX1CHeJEV3GXdvWwV5yRpjYcaY&s=jAXTatn5ZR-5qdOOKgSBrERZu3pZkWC.JhTy3xHkXPM&e=>) (8/4) "We're getting a look inside the Tulsa Air and Space Museum to see its new program 'Destination Mars.' We first told you about this last week."

## Solar System and Beyond

## Radio Astronomers Measure Star's Wobble, Find Saturn-size Exoplanet

Astronomy Now (UK) <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020080502nasa-26r-3Demail-2Dbd5e-26l-3D022-2D178-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=CNvECLhY6sxSDLbNayX1CHeJEV3GXdvWwV5yRpjYcaY&s=T96\\_epVPcJ0Cubjs3lggt37pb23saOI\\_bv75BbNShJU&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020080502nasa-26r-3Demail-2Dbd5e-26l-3D022-2D178-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=CNvECLhY6sxSDLbNayX1CHeJEV3GXdvWwV5yRpjYcaY&s=T96_epVPcJ0Cubjs3lggt37pb23saOI_bv75BbNShJU&e=>)> (8/4) "After a year and a half making careful observations of a cool dwarf star 35 light years from Earth, coupled with previous observations dating back to 2010, astronomers using the continent-size Very Long Baseline Array radio telescope managed to tease out the presence of an unseen Saturn-size exoplanet. ... The astrometric technique looks for changes in the actual position of a star to infer the presence of an exoplanet. Astronomers also can find planets by measuring slight changes in a star's radial velocity. NASA's now-retired Kepler satellite and the current TESS mission were designed to detect planets by measuring the dimming of starlight as exoplanets move across, or transit, the star's disc as viewed from Earth."

## Surprisingly Dense Exoplanet Challenges Planet Formation Theories

Phys (UK) <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020080502nasa-26r-3Demail-2Dbd5e-26l-3D023-2Dfd7-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=CNvECLhY6sxSDLbNayX1CHeJEV3GXdvWwV5yRpjYcaY&s=L004Ms\\_CJoQOoDDSVlUKUM8o8rWfXDFAUj26s5EljH0&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020080502nasa-26r-3Demail-2Dbd5e-26l-3D023-2Dfd7-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=CNvECLhY6sxSDLbNayX1CHeJEV3GXdvWwV5yRpjYcaY&s=L004Ms_CJoQOoDDSVlUKUM8o8rWfXDFAUj26s5EljH0&e=>)> (8/3) "New detailed observations with NSF's NOIRLab facilities reveal a young exoplanet, orbiting a young star in the Hyades cluster, that is unusually dense for its size and age. Weighing in at 25 Earth-masses, and slightly smaller than Neptune, this exoplanet's existence is at odds with the predictions of leading planet formation theories. ... To explore the nature and origin of K2-25b, astronomers determined its mass and density. Although the exoplanet's size was initially measured with NASA's Kepler satellite, the size measurement was refined using high-precision measurements from the WIYN 0.9-meter Telescope at KPNO and the 3.5-meter telescope at Apache Point Observatory (APO) in New Mexico."

## Astronomers Spot Glowing 'Butterfly' In Deep Space

Fox News <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020080502nasa-26r-3Demail-2Dbd5e-26l-3D024-2D3b0-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=CNvECLhY6sxSDLbNayX1CHeJEV3GXdvWwV5yRpjYcaY&s=hKWSj2e1BI\\_PcOIIz5xSuC7vAUKdKPPFWqxEOV0BzY&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020080502nasa-26r-3Demail-2Dbd5e-26l-3D024-2D3b0-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=CNvECLhY6sxSDLbNayX1CHeJEV3GXdvWwV5yRpjYcaY&s=hKWSj2e1BI_PcOIIz5xSuC7vAUKdKPPFWqxEOV0BzY&e=>)> (8/4, Ciaccia) "Astronomers have spotted a 'butterfly' in deep space. ... NGC 2899 is not the only 'butterfly' structure to be spotted in space in recent memory. In March 2019, NASA's Spitzer Space Telescope spotted Westerhout 40 (W40) 1,400 light-years from the sun."

## Space Tech

### SpaceX Launches Starship Prototype On Dramatic Test Flight

CBS News <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020080502nasa-26r-3Demail-2Dbd5e-26l-3D025-2Dda4-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=CNvECLhY6sxSDLbNayX1CHeJEV3GXdvWwV5yRpjYcaY&s=m-](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020080502nasa-26r-3Demail-2Dbd5e-26l-3D025-2Dda4-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=CNvECLhY6sxSDLbNayX1CHeJEV3GXdvWwV5yRpjYcaY&s=m-)>

5KPP2RZkS32sFrJFrdrOG5O91gY-jUFsV0mW7qEQQ&e=> (8/4, Harwood) "After repeated delays for a variety of technical issues, SpaceX successfully launched a methane-powered prototype of its planned high-power Starship rocket on Tuesday. The company sent a dummy stage aloft from its south Texas test facility for a brief up-and-down hop to a nearby landing pad. The test flight came just two days after a SpaceX Crew Dragon spacecraft brought two NASA astronauts safely back to Earth with a Gulf of Mexico splashdown after a near-flawless test flight expected to clear the way for operational missions later this year."

#### SpaceX's Starship SN5 Prototype Soars On 1st Test Flight! 'Mars Is Looking Real,' Elon Musk Says

SPACE <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020080502nasa-26r-3Demail-2Dbd5e-26l-3D026-2Dd6d-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=CNvECLhY6sxSDLbNayX1CHeJEV3GXdvWwV5yRpjYcaY&s=VqYB7cuBpLDN5wOr4bQDD\\_w1PzT6687OxmdA-JrVSfM&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020080502nasa-26r-3Demail-2Dbd5e-26l-3D026-2Dd6d-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=CNvECLhY6sxSDLbNayX1CHeJEV3GXdvWwV5yRpjYcaY&s=VqYB7cuBpLDN5wOr4bQDD_w1PzT6687OxmdA-JrVSfM&e=>) (8/4, Wall) "SpaceX just flew a full-size prototype of its Starship Mars-colonizing spacecraft for the first time ever. The Starship SN5 test vehicle took to the skies for about 40 seconds this afternoon (Aug. 4) at SpaceX's facilities near the South Texas village of Boca Chica, performing a small hop that could end up being a big step toward human exploration of the Red Planet."

#### SpaceX Just Launched A Full-Size Starship Rocket Prototype Hundreds Of Feet Above Texas

Business Insider <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020080502nasa-26r-3Demail-2Dbd5e-26l-3D027-2Dd12-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=CNvECLhY6sxSDLbNayX1CHeJEV3GXdvWwV5yRpjYcaY&s=TQa98ExaMhbrgWSp-WvftdyC0l8mb6H8A7hSDmoP\\_Wk&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020080502nasa-26r-3Demail-2Dbd5e-26l-3D027-2Dd12-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=CNvECLhY6sxSDLbNayX1CHeJEV3GXdvWwV5yRpjYcaY&s=TQa98ExaMhbrgWSp-WvftdyC0l8mb6H8A7hSDmoP_Wk&e=>) (8/4, Mosher, McFall-Johnsen) "SpaceX is one giant grain-silo launch closer to reaching Mars. The aerospace company, founded by Elon Musk in 2002, launched and landed an early prototype of a potentially revolutionary rocket system called Starship at 7:57 p.m. ET on Monday. The flight occurred at SpaceX's expanding rocket factory, development, and test site in Boca Chica, a relatively remote region at the southeastern tip of Texas."

#### Starship Prototype Takes 150 Meter 'Hop' At SpaceX Facility In South Texas

Houston Chronicle <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020080502nasa-26r-3Demail-2Dbd5e-26l-3D028-2D8b0-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=CNvECLhY6sxSDLbNayX1CHeJEV3GXdvWwV5yRpjYcaY&s=DgXHG9OwpNE91dQXsDKGMR3-Z0ahzSZMV1\\_fvmETZUs&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020080502nasa-26r-3Demail-2Dbd5e-26l-3D028-2D8b0-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=CNvECLhY6sxSDLbNayX1CHeJEV3GXdvWwV5yRpjYcaY&s=DgXHG9OwpNE91dQXsDKGMR3-Z0ahzSZMV1_fvmETZUs&e=>) (8/4, Leinfelder) "A SpaceX prototype built in south Texas took a 150-meter 'hop' on Tuesday, the latest advancement for a company that recently launched NASA astronauts and is aggressively pushing toward the moon and Mars. Billionaire Elon Musk's SpaceX is developing prototypes of its Starship spacecraft in Boca Chica, which is located just outside of Brownsville. This vehicle, paired with the Super Heavy rocket, is designed to carry people to the moon, Mars and beyond."

#### SpaceX Clears Big Hurdle On Next-Gen Starship Rocket Program

Spaceflight Now <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020080502nasa-26r-3Demail-2Dbd5e-26l-3D029-2De0e-26t-](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020080502nasa-26r-3Demail-2Dbd5e-26l-3D029-2De0e-26t-)

3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=CNvECLhY6sxSDLbNayX1ChEJEV3GXdvWwV5yRpjYcaY&s=F3wuFvYtKYmUTYaC-tB897YDOtqJi2nDgqVZ3litLLU&e=> (8/5, Clark) "A prototype rocket for a massive reusable vehicle SpaceX is designing to fly people to the moon and Mars took off from a launching stand in South Texas on Tuesday, flew to a height of roughly 500 feet, then made a controlled descent to a nearby landing pad. The 500-foot (150-meter) 'hop' test was the first of a Starship rocket with full-size propellant tanks, and it sets the stage for a series of progressively higher atmospheric demonstration flights with future vehicles."

#### SpaceX's Starship Prototype Successfully Flies In Test

Vice <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020080502nasa-26r-3Demail-2Dbd5e-26l-3D02a-2D0c8-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=CNvECLhY6sxSDLbNayX1ChEJEV3GXdvWwV5yRpjYcaY&s=EU0XFRk8xsU55nR9u\\_fVixmilFHQ2IJZcbb8HggqIM&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020080502nasa-26r-3Demail-2Dbd5e-26l-3D02a-2D0c8-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=CNvECLhY6sxSDLbNayX1ChEJEV3GXdvWwV5yRpjYcaY&s=EU0XFRk8xsU55nR9u_fVixmilFHQ2IJZcbb8HggqIM&e=>) (8/5, Ferreira) "A prototype of SpaceX's experimental Starship spacecraft took to the air for the first time on Tuesday for a test flight that reached an altitude of about 150 meters. This initial 'hop' of the vehicle, which is called Starship SN5, occurred at 6:57pm local time at SpaceX's launch complex in Boca Chica, Texas. Previous ground tests of this generation of Starship prototypes had resulted in failures including catastrophic explosions."

#### SpaceX Forced To Abort Starship 'Hop' After Engine Trouble

BGR <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020080502nasa-26r-3Demail-2Dbd5e-26l-3D02b-2D123-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=CNvECLhY6sxSDLbNayX1ChEJEV3GXdvWwV5yRpjYcaY&s=cvwgpJ7FjwnAx--oADzOodlvTELRLhNV8bYOfWCdmzE&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020080502nasa-26r-3Demail-2Dbd5e-26l-3D02b-2D123-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=CNvECLhY6sxSDLbNayX1ChEJEV3GXdvWwV5yRpjYcaY&s=cvwgpJ7FjwnAx--oADzOodlvTELRLhNV8bYOfWCdmzE&e=>) (8/4, Wehner) "SpaceX was preparing to launch its Starship prototype on a short 'hop' test, but engine trouble halted the test at the last possible second. An issue with the engine triggered an automatic abort, according to SpaceX boss Elon Musk."

#### New SpaceX Starship Fails To Fire, But The Mars Rocket Has More Chances

CNET News <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020080502nasa-26r-3Demail-2Dbd5e-26l-3D02c-2D3f2-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=CNvECLhY6sxSDLbNayX1ChEJEV3GXdvWwV5yRpjYcaY&s=\\_2XEUq8xKT0WPCj50POHI PC6c3qmt-quq6vuWyh1ReQ&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020080502nasa-26r-3Demail-2Dbd5e-26l-3D02c-2D3f2-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=CNvECLhY6sxSDLbNayX1ChEJEV3GXdvWwV5yRpjYcaY&s=_2XEUq8xKT0WPCj50POHI PC6c3qmt-quq6vuWyh1ReQ&e=>) (8/4, Mack) "Update, Aug. 4., 5 p.m. PT: The hop went off successfully. Read about it here. SpaceX's latest Starship prototype had another false start Tuesday morning, as a test 'hop' of the next-generation rocket was aborted before ignition."

#### An Early Version Of Starship Takes Its First, Tentative Steps Off Earth

Ars Technica <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020080502nasa-26r-3Demail-2Dbd5e-26l-3D02d-2D7ac-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=CNvECLhY6sxSDLbNayX1ChEJEV3GXdvWwV5yRpjYcaY&s=FRit0BqeEreAISpPx7MRVh KzgbYTENS1QaKqqlyb12s&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020080502nasa-26r-3Demail-2Dbd5e-26l-3D02d-2D7ac-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=CNvECLhY6sxSDLbNayX1ChEJEV3GXdvWwV5yRpjYcaY&s=FRit0BqeEreAISpPx7MRVh KzgbYTENS1QaKqqlyb12s&e=>) (8/4, Berger) "Just so we're clear about this, SpaceX built a Mars rocket out of rolls of steel. In tents. In South Texas. In weeks. And on Tuesday evening, a little more than an hour before the Sun sank into



the rolling Texas horizon, this Starship prototype rumbled to life and left the ground for the first time. It rose from a stand, with its single Raptor rocket engine burning clean. Video shows the 30-meter-tall vehicle ascending to about 150 meters, moving laterally, and then beginning to descend.”

#### NASA's Nancy Grace Roman Space Telescope Will Send The Hunt For Exoplanets Into Warp Speed

SPACE <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020080502nasa-26r-3Demail-2Dbd5e-26l-3D02e-2D18f-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=CNvECLhY6sxSDLbNayX1CHeJEV3GXdvWwV5yRpjYcaY&s=Mo0AcwY2KUR2vzU5\\_zKngEjUHWUwQJDd9yTV\\_9OH5B4&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020080502nasa-26r-3Demail-2Dbd5e-26l-3D02e-2D18f-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=CNvECLhY6sxSDLbNayX1CHeJEV3GXdvWwV5yRpjYcaY&s=Mo0AcwY2KUR2vzU5_zKngEjUHWUwQJDd9yTV_9OH5B4&e=>) (8/4, Howell) “A new NASA space observatory could push planet-hunting forward at warp speed by gathering data up to 500 times faster than the venerable Hubble Space Telescope does. The Nancy Grace Roman Space Telescope (formerly known as the Wide-Field Infrared Survey Telescope or WFIRST) passed a key ground-system design review this month, according to NASA. Roman, as the telescope is called in short, relies on technology that was originally built for spy missions on Earth. Instead, after its launch in the mid-2020s, Roman will spy on exoplanets across the galaxy, as well as many other cosmic phenomena.”

#### NASA's Lucy Mission Passes Critical Mission Milestone

Phys (UK) <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020080502nasa-26r-3Demail-2Dbd5e-26l-3D02f-2D5ae-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=CNvECLhY6sxSDLbNayX1CHeJEV3GXdvWwV5yRpjYcaY&s=7ww7cxArzvPZyItBAzSvZ8gzUerFD\\_aA15HrqDozm8l&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020080502nasa-26r-3Demail-2Dbd5e-26l-3D02f-2D5ae-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=CNvECLhY6sxSDLbNayX1CHeJEV3GXdvWwV5yRpjYcaY&s=7ww7cxArzvPZyItBAzSvZ8gzUerFD_aA15HrqDozm8l&e=>) (8/4) “Last week marked the completion of a major milestone on the path to spacecraft assembly, test, and launch operations for NASA's Lucy mission. The Systems Integration Review ensured segments, components, and subsystems, scientific instrumentation, electrical and communication systems, and navigation systems are on schedule to be integrated into the system. It confirmed that facilities, support personnel, and plans and procedures are on schedule to support integration.”

#### NASA's Lucy Mission Passes Systems Integration Review

SlashGear <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020080502nasa-26r-3Demail-2Dbd5e-26l-3D030-2Db6c-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=CNvECLhY6sxSDLbNayX1CHeJEV3GXdvWwV5yRpjYcaY&s=tWBJBupz2OpWkMNBUKU5vA9a7ERGTeyL9suLqsRiofU&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020080502nasa-26r-3Demail-2Dbd5e-26l-3D030-2Db6c-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=CNvECLhY6sxSDLbNayX1CHeJEV3GXdvWwV5yRpjYcaY&s=tWBJBupz2OpWkMNBUKU5vA9a7ERGTeyL9suLqsRiofU&e=>) (8/4, McGlaun) “NASA has announced that its Lucy mission has passed a critical mission milestone bringing it closer to launch. The Systems Integration Review is complete and ensures that segments, components, and subsystems, along with scientific instrumentation, electrical and communication systems, and navigation systems are all on schedule to be integrated into the system.”

#### Next Virgin Orbit Flight Test To Carry NASA CubeSats

Aviation Week <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020080502nasa-26r-3Demail-2Dbd5e-26l-3D031-2D830-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=CNvECLhY6sxSDLbNayX1CHeJEV3GXdvWwV5yRpjYcaY&s=4EP1qwjFhdnKO\\_vSbgNLG](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020080502nasa-26r-3Demail-2Dbd5e-26l-3D031-2D830-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=CNvECLhY6sxSDLbNayX1CHeJEV3GXdvWwV5yRpjYcaY&s=4EP1qwjFhdnKO_vSbgNLG)

VkjsC8wj6HFUJZtoTfWARw&e=> (8/4) "As it incorporates lessons learned from the abbreviated debut flight of its LauncherOne small satellite rocket, Virgin Orbit said Aug. 3 it is planning for a second demonstration mission before year's..."

#### SpaceX Prototype Starship Survives Low-Altitude Hop

Aviation Week <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020080502nasa-26r-3Demail-2Dbd5e-26l-3D032-2D45d-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=CNvECLhY6sxSDLbNayX1ChEJEV3GXdvWwV5yRpjYcaY&s=5A55ZJHwa82c-AFBCEEVrMzdOS3eHkuspVrxlv1yb9g&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020080502nasa-26r-3Demail-2Dbd5e-26l-3D032-2D45d-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=CNvECLhY6sxSDLbNayX1ChEJEV3GXdvWwV5yRpjYcaY&s=5A55ZJHwa82c-AFBCEEVrMzdOS3eHkuspVrxlv1yb9g&e=>) (8/5) "A prototype Mars-class reusable spaceship developed by SpaceX took a nearly 500-ft (150 m) hop off a launch stand near Brownsville, Texas, on Aug. 4, deploying landing legs and touching down 45 sec..."

#### Various

#### New NASA Office Coordinates Rideshare Launches Of Smallsat Science Missions

Space News <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020080502nasa-26r-3Demail-2Dbd5e-26l-3D033-2Dcc7-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=CNvECLhY6sxSDLbNayX1ChEJEV3GXdvWwV5yRpjYcaY&s=c\\_Uax\\_HcBOZpLOFyRM5VdRdJVLnzfMo5ZbyXW2Von0s&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020080502nasa-26r-3Demail-2Dbd5e-26l-3D033-2Dcc7-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=CNvECLhY6sxSDLbNayX1ChEJEV3GXdvWwV5yRpjYcaY&s=c_Uax_HcBOZpLOFyRM5VdRdJVLnzfMo5ZbyXW2Von0s&e=>) (8/4, Foust) "NASA has established an office to coordinate rideshare launch opportunities for its growing number of smallsat science missions, taking advantage of excess capacity on launches of larger spacecraft. NASA's Science Mission Directorate (SMD) established the rideshare office earlier this year as part of broader efforts to promote the use of cubesats and other smallsats to carry out a wide range of missions."

#### Other

#### Now In Development: Virgin Galactic's Mach 3 Supersonic Flight

Forbes <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020080502nasa-26r-3Demail-2Dbd5e-26l-3D034-2D6cb-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=CNvECLhY6sxSDLbNayX1ChEJEV3GXdvWwV5yRpjYcaY&s=oL3C8-3J5SYHLM73A5Sz6lKA1-SPv20CaxEB2ktl7u4&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020080502nasa-26r-3Demail-2Dbd5e-26l-3D034-2D6cb-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=CNvECLhY6sxSDLbNayX1ChEJEV3GXdvWwV5yRpjYcaY&s=oL3C8-3J5SYHLM73A5Sz6lKA1-SPv20CaxEB2ktl7u4&e=>) (8/4, Werner) "Virgin Galactic's main focus has been space tourism culminating in plans to start commercial spaceflight next year assuming two more test flights go well. But back down on earth the company is also initiating plans to develop an aircraft that can fly at 60,000 feet three times the speed of sound, connecting New York to London in two hours or Sydney to London in four. (By comparison, it took 19 hours on Qantas's record breaking test flight connecting those two cities last year.)"

#### Virgin Galactic Unveils Initial Design Concept Of High-Speed Aircraft

Aerospace Technology <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020080502nasa-26r-3Demail-2Dbd5e-26l-3D035-2D643-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=CNvECLhY6sxSDLbNayX1ChEJEV3GXdvWwV5yRpjYcaY&s=lbGuqgwo48-\\_tOVetVROaG9Q7taiDOtFhE40XyMjAsw&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020080502nasa-26r-3Demail-2Dbd5e-26l-3D035-2D643-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=CNvECLhY6sxSDLbNayX1ChEJEV3GXdvWwV5yRpjYcaY&s=lbGuqgwo48-_tOVetVROaG9Q7taiDOtFhE40XyMjAsw&e=>) (8/4) "Vertically integrated aerospace and space travel company Virgin

Galactic has unveiled an initial design concept of its high-speed aircraft. The unveiling follows as Virgin Galactic concluded its Mission Concept Review (MCR) programme milestone.”

## Elon Musk’s SpaceX: We Now Want To Bring Starlink Internet From Space To 5 Million In US

ZDNet <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020080502nasa-26r-3Demail-2Dbd5e-26l-3D036-2Df1e-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=CNvECLhY6sxSDLbNayX1CHeJEV3GXdvWwV5yRpjYcaY&s=b8tg\\_4CNa4F8yH8\\_IVehu-KZF2GhIWuBLc66zw4XmfQ&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020080502nasa-26r-3Demail-2Dbd5e-26l-3D036-2Df1e-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=CNvECLhY6sxSDLbNayX1CHeJEV3GXdvWwV5yRpjYcaY&s=b8tg_4CNa4F8yH8_IVehu-KZF2GhIWuBLc66zw4XmfQ&e=>) (8/4, Tung) “Elon Musk’s SpaceX has applied for a license to roll out five million ‘UFO on a stick’ end-user terminals, after 700,000 US residents signed up to be updated about the service’s availability. ‘SpaceX seeks to increase the number of fixed earth stations authorized under this blanket license from 1,000,000 to 5,000,000,’ the company said in an application to the Federal Communications Commission (FCC).”

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## **[EXTERNAL] NASA Morning Briefing for Wednesday, June 30, 2021**

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Editor's Note

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### Russian Cargo Ship Lifts Off For International Space Station

AP

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### Stunning Image Shows International Space Station Moving Across The Sun

The Hill

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### Northrop Grumman's Cygnus Cargo Ship Departs Space Station To Begin New Mission In Orbit

SPACE

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### Washington Goes Crazy With Talk Of UFOs, Alien Life

Washington Times

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## NASA Ranks As The Best Place To Work In Government For Ninth Year

NextGov

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## After Delayed SpaceX Launch, Musk Says Reform Needed For Humanity To ‘Become A Spacefaring Civilization’

Fox Business

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Flight

No content.

Earth

## Mountaintop Glacier Ice Is Disappearing In Tropics Globally

Forbes

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## A Massive Lake Suddenly Vanished In Antarctica, Scientists Discover

Vice

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#### NASA Studying Louisiana River Delta System

KIAH-TV Houston

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Humans in Space

#### Russian Cargo Ship Lifts Off For International Space Station

AP

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021063002nasa&r=email-dc4f&l=00c-cb5&t=c&data=04|01|randy.c.cruz@nasa.gov|50669770d14b4949ab4208d93bb5fa7e|7005d45845be48ae8140d43da96dd17b|0|0|637606475049299132|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQljojV2luMzliLCJBTiI6Ikh1aWwiLCJXVCi6Mn0=|1000&sdata=1aRedpu9OLfRQBVbXK4iGZto+vGG3v97vDdFzZMUcew=&reserved=0>> (6/29) “An uncrewed Russian cargo ship blasted off Wednesday on a mission to deliver supplies to the International Space Station. The Progress MS-17 lifted off atop a Soyuz rocket from the Russian space complex in Baikonur, Kazakhstan, at 4:27 a.m. (23:27 GMT Tuesday).”

#### Russia’s Progress Cargo Ship Successfully Launches To Space Station

SPACE

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## Russian Cargo Ship Sets Off After The International Space Station In Dramatic Sky Show

CBS News

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## Roscosmos Launches Progress MS-17 To ISS

NASA Space Flight

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021063002nasa&r=email-dc4f&l=00f-6e1&t=c&data=04|01|randy.c.cruz@nasa.gov|50669770d14b4949ab4208d93bb5fa7e|7005d45845be48ae8140d43da96dd17b|0|0|637606475049319044|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikl1haWwiLCJXVCi6Mn0=|1000&sdata=cX0JfBeBzJBo7Mg0VVKxr8kAIBD+5K+eBB6zy1XSztQ=&reserved=0>> (6/29, Navin, Kanayama) “Roscosmos has launched their latest resupply mission to the International Space Station, Progress MS-17. The launch occurred at 23:27 UTC on June 29 from Site 31/6 at the Baikonur Cosmodrome in Kazakhstan. A Soyuz 2.1a launch vehicle was used to launch the Progress MS-17 spacecraft. The mission is known to NASA as Progress 78P, as Progress MS-17 is the 78th Russian resupply mission to the ISS.”

## Stunning Image Shows International Space Station Moving Across The Sun

The Hill

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021063002nasa&r=email-dc4f&l=010-5d5&t=c&data=04|01|randy.c.cruz@nasa.gov|50669770d14b4949ab4208d93bb5fa7e|7005d45845be48ae8140d43da96dd17b|0|0|637606475049319044|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikl1haWwiLCJXVCi6Mn0=|1000&sdata=jZUBwzr0s5ja3YU8L13RR6huDZUswBuoyZlIjKv+2Y=&reserved=0>> (6/29, Guzman) “NASA has released a breathtaking composite image that shows the International Space Station (ISS) crossing in front of the sun. The image captured by NASA photographer Joel Kowsky shows the ISS as a small shape with visible solar arrays on both sides with the sun as a glowing, bright orange backdrop.”

## Spectacular Image Captures International Space Station Crossing In Front Of The Sun During Astronaut Spacewalk

CBS News

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last week as it transited the sun at about five miles per second, or about 18,000 miles per hour. The images, which feature the sun as a glowing orange backdrop to the orbiting laboratory, were taken from Nellysford, Virginia, NASA said in a statement Monday.”

## NASA Shares A Spectacular Image Of The ISS Transiting The Sun

SlashGear

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021063002nasa&r=email-dc4f&l=012-98f&t=c&data=04|01|randy.c.cruz@nasa.gov|50669770d14b4949ab4208d93bb5fa7e|7005d45845be48ae8140d43da96dd17b|0|0|637606475049338959|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6I6k1haWwiLCJXVCi6Mn0=|1000&sdata=wKJZVqdanli6THd/RhHOyfc0Tzvi8MJDDpZaHn/ugqk=&reserved=0>> (6/29, McGlaun) “The International Space Station has been in orbit for many years. The space station has been used as a platform for conducting various scientific research that has resulted in some great science over the years. Currently, the ISS is being serviced by both Russian and American spacecraft with a crew of international astronauts on board.”

## Northrop Grumman’s Cygnus Cargo Ship Departs Space Station To Begin New Mission In Orbit

SPACE

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021063002nasa&r=email-dc4f&l=013-8af&t=c&data=04|01|randy.c.cruz@nasa.gov|50669770d14b4949ab4208d93bb5fa7e|7005d45845be48ae8140d43da96dd17b|0|0|637606475049338959|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6I6k1haWwiLCJXVCi6Mn0=|1000&sdata=FuLqJMzFud6chKQ7PsiCdnsiCHUWCa9Eew1foxw8ojE=&reserved=0>> (6/29, Thompson) “A Northrop Grumman Cygnus cargo spacecraft successfully undocked from the International Space Station Tuesday (June 29) at 12:25 p.m. EDT (1625 GMT), more than four months after it arrived in orbit. The undocking aired live on NASA TV, with the spacecraft separating from the orbital outpost right on time, enabling the craft to begin a secondary mission before its planned fiery demise.”

## Cygnus Supply Ship Departs Space Station After Four-month Mission

Spaceflight Now

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021063002nasa&r=email-dc4f&l=014-6ab&t=c&data=04|01|randy.c.cruz@nasa.gov|50669770d14b4949ab4208d93bb5fa7e|7005d45845be48ae8140d43da96dd17b|0|0|637606475049348917|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6I6k1haWwiLCJXVCi6Mn0=|1000&sdata=McaCVlu3DZf0k2/p6PrgAEm2OP0tnthBgHb58E6xYdA=&reserved=0>> (6/29, Clark) “A Cygnus spacecraft owned by Northrop Grumman departed the International Space Station Tuesday, concluding a four-month mission that delivered more than 8,000 pounds of cargo. The automated resupply freighter will deploy five small CubeSats before re-entering the atmosphere and burning up over the Pacific Ocean.”

## Do You Want To Go To Space?

Discovery Channel

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021063002nasa&r=email-dc4f&l=015-07b&t=c&data=04|01|randy.c.cruz@nasa.gov|50669770d14b4949ab4208d93bb5fa7e|7005d45845be48ae8140d43da96dd17b|0|0|637606475049348917|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6I6k1haWwiLCJXVCi6Mn0=|1000&sdata=qu6WxB3KZHq+gbm6DDvS3TA9IsUgyEZM1xSexF/dQTs=&reserved=0>> (6/29) “Discovery’s new series, WHO WANTS TO BE AN ASTRONAUT is giving regular people the chance to compete for an official spot aboard a rocket to outer space. The winner will get to live at the International Space Station (ISS) for

eight days. We caught up with former NASA astronaut and mechanical engineer, Mike Massimino, to ask him about life aboard the ISS, and tips for aspiring astronauts.”

## Remembering The Crew Of Soyuz 11, The Only Astronauts To Die In Space

Discover Magazine

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021063002nasa&r=email-dc4f&l=016-e2b&t=c&data=04|01|randy.c.cruz@nasa.gov|50669770d14b4949ab4208d93bb5fa7e|7005d45845be48ae8140d43da96dd17b|0|0|637606475049358862|Unknown|TWFpbGZsb3d8eyJWljoimc4wLjAwMDAiLCJQljoiv2luMzliLCJBTiI6lk1haWwiLCJXVCi6Mn0=|1000&sdata=mxyo0Gpxq5tkjpM1X8hYmiHyf/+GeLzQtFnlBYdzQfl=&reserved=0>> (6/29, Evans) “A look of troubled uncertainty creased the man’s face. Kneeling beside him, another member of the recovery team likewise listened to the Soyuz 11 capsule, which had just landed following a record-breaking 23-day stay at the world’s first space station. Moments before, both men were eagerly clamoring to greet the returning cosmonauts — Georgi Dobrovolski, Vladislav Volkov, and Viktor Patsayev — whose fame swept Soviet Russia like a whirlwind in June 1971. But when they knocked on the capsule, they were met with only ominous silence.”

## Jeff Bezos Is Soon To Visit Space

Forbes

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021063002nasa&r=email-dc4f&l=017-7a0&t=c&data=04|01|randy.c.cruz@nasa.gov|50669770d14b4949ab4208d93bb5fa7e|7005d45845be48ae8140d43da96dd17b|0|0|637606475049358862|Unknown|TWFpbGZsb3d8eyJWljoimc4wLjAwMDAiLCJQljoiv2luMzliLCJBTiI6lk1haWwiLCJXVCi6Mn0=|1000&sdata=bDRu06cLTwE0OuWDZzGzSOdXUBf8qFomETV1t4I4KBY=&reserved=0>> (6/29, Placido) “Jeff Bezos, one of the world’s wealthiest men, is due to (briefly) leave Earth in late July, launched into space by his private spaceflight company Blue Origin. Quite a few earthlings want him to stay up there; more than 138,000 have signed a tongue-in-cheek petition proposing that Bezos be banned from returning to Earth.”

## Moon to Mars

## China Once Said It Couldn’t Put A Potato In Space. Now It’s Eyeing Mars

CNBC

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021063002nasa&r=email-dc4f&l=018-dd0&t=c&data=04|01|randy.c.cruz@nasa.gov|50669770d14b4949ab4208d93bb5fa7e|7005d45845be48ae8140d43da96dd17b|0|0|637606475049368820|Unknown|TWFpbGZsb3d8eyJWljoimc4wLjAwMDAiLCJQljoiv2luMzliLCJBTiI6lk1haWwiLCJXVCi6Mn0=|1000&sdata=hNHWZFKgM8fqaF3gqzHI2e73RzaY+9ZoZcPNgDhQUKk=&reserved=0>> (6/30, Kharpal) “In 1957, the Soviet Union launched Sputnik, the first artificial satellite, which sparked a space race with the U.S. China, however, was nowhere to be seen. While the U.S. and the Soviet Union were battling for superiority in this new domain, Mao Zedong, one of the founders of the Chinese Communist Party (CCP), reportedly said: ‘China cannot even put a potato in space.’”

## A Lunar Farside Telescope Could Detect Exoplanets Through Their Magnetospheres

Universe Today

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021063002nasa&r=email-dc4f&l=019-683&t=c&data=04|01|randy.c.cruz@nasa.gov|50669770d14b4949ab4208d93bb5fa7e|7005d45845be48ae8140d43da96dd17b|0|0|637606475049378775|Unknown|TWFpbGZsb3d8eyJWljoimc4wLjAwMDAiLCJQljoiv2luMzliLCJBTiI6lk1>>

haWwiLCJXVCi6Mn0=|1000&sdata=hFYvWPyAgZmnJJ0pzhQtonVG5wtJ99HoC44w3KYS7RM=&reserved=0> (6/29, Koberlein) “It’s difficult to do radio astronomy on Earth, and it’s getting harder every day. Our everyday reliance on radio technology means that radio interference is a constant challenge, even in remote areas. And for some wavelengths even the Earth’s atmosphere is a problem, absorbing or scattering radio light so that Earth-based telescopes can’t observe these wavelengths well. ... NASA is currently studying how we might build a radio telescope on the Moon. If it is built in the coming decades, we might finally see the aurora glow of a distant Earth.”

#### NASA May Have Finally Solved A Mars Methane Mystery

CNET News

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021063002nasa&r=email-dc4f&l=01a-682&t=c&data=04|01|randy.c.cruz@nasa.gov|50669770d14b4949ab4208d93bb5fa7e|7005d45845be48ae8140d43da96dd17b|0|0|637606475049378775|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQljojV2luMzliLCJBTiI6I6k1haWwiLCJXVCi6Mn0=|1000&sdata=XNSJ3dRH1mwXL6W0F156E2k278xCUnmBIAnG9Cc1Pc4=&reserved=0>> (6/29, Kooser) “Methane. On Earth, it’s the stuff of cow farts and burps. On Mars, it’s the stuff of mysteries. Scientists have been puzzling over methane readings from Mars, and NASA may be a step closer to figuring out what’s going on with the gas on the red planet. It turns out the time of day has a big impact on methane detections.”

#### NASA’s Moon-bound Mannequin Astronaut Named After Hero Of Troubled Apollo 13 Mission

CNN

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021063002nasa&r=email-dc4f&l=01b-56e&t=c&data=04|01|randy.c.cruz@nasa.gov|50669770d14b4949ab4208d93bb5fa7e|7005d45845be48ae8140d43da96dd17b|0|0|637606475049388732|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQljojV2luMzliLCJBTiI6I6k1haWwiLCJXVCi6Mn0=|1000&sdata=hj7Xfu6afxnWU25E7wrQ844kOcCvUH3rGYI8Rn5xCqk=&reserved=0>> (6/29, Rogers) “After a weeks-long challenge to name NASA’s moon-bound mannequin (or ‘Moonikin’ as NASA has dubbed it), the people have chosen: Campos is expected to take off on the uncrewed Artemis I moon mission slated for November. The name is a dedication to the late Arturo Campos, a Mexican American electrical engineer at NASA who was instrumental in bringing the imperiled Apollo 13 crew safely back home in 1970, according to NASA.”

#### Dust Problems Draining Power From NASA’s InSight Mars Lander

SPACE

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021063002nasa&r=email-dc4f&l=01c-3d8&t=c&data=04|01|randy.c.cruz@nasa.gov|50669770d14b4949ab4208d93bb5fa7e|7005d45845be48ae8140d43da96dd17b|0|0|637606475049388732|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQljojV2luMzliLCJBTiI6I6k1haWwiLCJXVCi6Mn0=|1000&sdata=dsm/O7H+HV8WVTNyl0NzS2xk37wz4ybGmBH90pSCGEE=&reserved=0>> (6/29, Howell) “Martian dust accumulating on the panels of NASA’s InSight lander could force the Red Planet mission to end its work within the next 10 months, its principal investigator warned during a recent update. To save power and preserve InSight’s essential items like heaters in the cold Martian environment, mission managers have already turned off several instruments on the lander. NASA has also tried a new way of encouraging the wind to blow off sand, but with limited success.”

#### NASA’s Mars Helicopter Ingenuity Could Keep Flying The Martian Skies For Months

SPACE

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2d4&t=c&data=04|01|randy.c.cruz@nasa.gov|50669770d14b4949ab4208d93bb5fa7e|7005d45845be48ae8140d43da96dd17b|0|0|637606475049398697|Unknown|TWFpbGZsb3d8eyJWljoic4wLjAwMDAiLCJQljoiv2luMzliLCJBTiI6Ikh1haWwiLCJXVCi6Mn0=|1000&sdata=OQsCvshxkcvDCbDwTs7ZBpz9t82sugdy8oWVP3CZWk=&reserved=0> (6/29, Wall) “The future of aerial Mars exploration looks bright. NASA’s Mars helicopter Ingenuity, which landed inside Mars’ Jezero Crater with the agency’s Perseverance rover in February, has now completed eight Red Planet flights. That’s three more than the maximum targeted for the 4-lb. (1.8 kilograms) chopper’s original technology-demonstration mission — and Ingenuity isn’t done yet.”

#### NASA Reveals The Public’s Favorite Dummy Name: Commander Moonikin

SlashGear

<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021063002nasa&r=email-dc4f&l=01e-afb&t=c&data=04|01|randy.c.cruz@nasa.gov|50669770d14b4949ab4208d93bb5fa7e|7005d45845be48ae8140d43da96dd17b|0|0|637606475049398697|Unknown|TWFpbGZsb3d8eyJWljoic4wLjAwMDAiLCJQljoiv2luMzliLCJBTiI6Ikh1haWwiLCJXVCi6Mn0=|1000&sdata=llrbU31OALUQVeD8VczmkxmU9oF00N0qz63DNLjVpjs=&reserved=0> (6/29, Roston) “A few weeks ago, NASA asked the public to vote on their favorite name for the manikin (a type of human-sized dummy) that’ll be used as part of the Artemis I lunar mission. Space fans spoke and now NASA is back with the final name for its latest manikin: Commander Moonikin Campos. Yes, that’s right. Cmdr. Moonikin will be fitted with its own spacesuit and launched all by itself into space.”

#### Solar System and Beyond

#### ‘Pac-Man’ In Space: Black Holes Gobble Up Neutron Stars In First Evidence Of A Rare Celestial Event

CNN

<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021063002nasa&r=email-dc4f&l=01f-715&t=c&data=04|01|randy.c.cruz@nasa.gov|50669770d14b4949ab4208d93bb5fa7e|7005d45845be48ae8140d43da96dd17b|0|0|637606475049408651|Unknown|TWFpbGZsb3d8eyJWljoic4wLjAwMDAiLCJQljoiv2luMzliLCJBTiI6Ikh1haWwiLCJXVCi6Mn0=|1000&sdata=EVaWCyYhqVq21saM1CT+RWdlmykDk7oi1YwhO1mYm3M=&reserved=0> (6/29, Strickland) “Nearly a billion years ago, two of the most extreme objects in the universe came together in a death spiral, and one of them didn’t make it out alive. For the first time ever, astronomers have detected two separate instances of black holes swallowing dense neutron stars – and it played out like Pac-Man in space. ... ‘We’ve now seen the first examples of black holes merging with neutron stars, so we know that they’re out there,’ said Maya Fishbach, a NASA Einstein Postdoctoral Fellow and LIGO Scientific Collaboration member.”

#### Mystery Explosion 1,000 Years Ago May Be A Rare, Third Type Of Supernova

LiveScience

<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021063002nasa&r=email-dc4f&l=020-6c6&t=c&data=04|01|randy.c.cruz@nasa.gov|50669770d14b4949ab4208d93bb5fa7e|7005d45845be48ae8140d43da96dd17b|0|0|637606475049408651|Unknown|TWFpbGZsb3d8eyJWljoic4wLjAwMDAiLCJQljoiv2luMzliLCJBTiI6Ikh1haWwiLCJXVCi6Mn0=|1000&sdata=0VEJI0N/U8t7ms4cDeupmVqj+pWvwhon9ihFL7mEsb4g=&reserved=0> (6/29, Specktor) “On July 4, 1054 — about 700 years before the United States popped its first celebratory firework — a mysterious light exploded in the sky. The blast was visible around the world, lingering in the daytime sky for nearly a month, and visible at night for nearly two years, according to NASA. At the time, Chinese astronomers labeled the mysterious blaze a ‘guest star’ — a temporary heavenly object that seemingly appeared from nothing, then vanished to nothing.”

## Giant Comet Zooming Toward The Sun Is Largest Ever Seen

USA Today

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021063002nasa&r=email-dc4f&l=021-c68&t=c&data=04|01|randy.c.cruz@nasa.gov|50669770d14b4949ab4208d93bb5fa7e|7005d45845be48ae8140d43da96dd17b|0|0|637606475049418608|Unknown|TWFpbGZsb3d8eyJWljoic4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6IkhWwiLCJXVCi6Mn0=|1000&sdata=Jk44/rgy//Xnw3J1NCVnSj1/B3tPNkK+00qQhSO4M/Q=&reserved=0>> (6/29, Rice) “This is a big one. A giant comet – which scientists say is arguably the largest comet discovered in modern times – is on its way toward the sun and will make its closest approach to Earth in 2031. ... The comet probably came from the Oort Cloud, which is believed to be a giant spherical shell that surrounds the solar system, according to NASA. Most long-period comets such as this one come from the Oort Cloud, NASA said.”

## Astronomers Believe There May Be More Earth-sized Planets Than They Thought

SlashGear

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021063002nasa&r=email-dc4f&l=022-ea2&t=c&data=04|01|randy.c.cruz@nasa.gov|50669770d14b4949ab4208d93bb5fa7e|7005d45845be48ae8140d43da96dd17b|0|0|637606475049418608|Unknown|TWFpbGZsb3d8eyJWljoic4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6IkhWwiLCJXVCi6Mn0=|1000&sdata=rMTgACcI5u5qZPwklralnS5V9jyep8mQyJXf9TeTs=&reserved=0>> (6/29, McGlaun) “Some astronomers believe that exoplanet searches may be missing nearly half of all Earth-sized planets orbiting other stars. The findings by astronomers suggest that Earth-sized planets could be undiscovered in binary star systems hidden by the glare of the parent stars. Scientists note that roughly half of all stars are binary systems meaning they could be overlooking vast numbers of Earth-sized planets. Astronomers on the project used twin telescopes from the Gemini Observatory to determine that many planet-hosting stars identified by NASA’s TESS exoplanet mission are actually binary pairs with planets orbiting one of the stars in the pair.”

## Earth-Like Planets May Be Lurking In The Glare Of Binary Star Systems

New Atlas

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021063002nasa&r=email-dc4f&l=023-2b5&t=c&data=04|01|randy.c.cruz@nasa.gov|50669770d14b4949ab4208d93bb5fa7e|7005d45845be48ae8140d43da96dd17b|0|0|637606475049428567|Unknown|TWFpbGZsb3d8eyJWljoic4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6IkhWwiLCJXVCi6Mn0=|1000&sdata=CYJStrD9ONtDcp0E11xekmP/zhzK3KBBBRJS1ewEFpM=&reserved=0>> (6/29, Wood) “Double star systems may be concealing a population of potentially habitable Earth-sized planets in their combined glare, according to the results of a newly published study. Roughly half of all stars are thought to exist in binary systems, in which two massive stellar bodies orbit around a common center of mass. ... The scientists behind the study sought to discover how many stars in a sample of data collected by NASA’s TESS exoplanet hunting mission were actually part of a double star system. They also hoped to shed light on whether it was likely that the intense light from the stars was capable of obscuring the presence of hitherto unknown Earth-like worlds.”

## Scientists Say There’s No Life On Venus — But Jupiter Has Potential

CBS News

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Lewis) “It turns out the clouds of Venus aren’t made of the right stuff to support life — so now, scientists are turning to Jupiter instead. ... The findings come nearly a month after NASA announced two new discovery missions to the inferno-like planet, scheduled to launch between 2028 and 2030. One of those missions could help determine if Venus could have supported life billions of years ago.”

These Scientists Spent Decades Pushing NASA To Go Back To Venus. Now They’re On A Hot Streak.

Popular Science

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021063002nasa&r=email-dc4f&l=025-9ed&t=c&data=04|01|randy.c.cruz@nasa.gov|50669770d14b4949ab4208d93bb5fa7e|7005d45845be48ae8140d43da96dd17b|0|0|637606475049438528|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikl1haWwiLCJXVCi6Mn0=|1000&sdata=z2rdIAVlwwltM/1PSFNp8mOgnrLgly5/58BkISKTAi0=&reserved=0>> (6/29) “Jörn Helbert was standing outside a stranger’s apartment in the north end of Berlin with a bouquet of yellow roses. It was June 2020, and the woman behind the door was in mandatory quarantine. ... Helbert, Dyar, and a team of colleagues were in the last stages of pitching NASA on a mission called VERITAS, which would send a satellite to map Venus at higher resolution than ever before.”

Venus Can’t Sustain Life In The Clouds, But Jupiter Has Potential

CNET News

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021063002nasa&r=email-dc4f&l=026-3bc&t=c&data=04|01|randy.c.cruz@nasa.gov|50669770d14b4949ab4208d93bb5fa7e|7005d45845be48ae8140d43da96dd17b|0|0|637606475049438528|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikl1haWwiLCJXVCi6Mn0=|1000&sdata=g0NHws/X/ir8wOsuOUFeiZLLK0dzcd+fl6XOGyDyltA=&reserved=0>> (6/29, Ryan) “Venus clouds have captivated Earthlings for decades. They form a dazzling mirror that obscures the planet’s surface and, in the 1950s, one Israeli scholar even speculated the clouds may hide a world teeming with insect life capable of enduring the extreme heat. ... The researchers were quick to point out that their find wasn’t a definitive sign of life in the clouds of Venus, but scientists and the public were buzzing all the same. It inspired Jim Bridenstine, NASA’s administrator at the time, to declare it was ‘time to prioritize Venus.’”

Space Tech

Stratodynamics Completes Turbulence-Detection Sensor Flights

Aviation Week

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Various

Washington Goes Crazy With Talk Of UFOs, Alien Life

Washington Times

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021063002nasa&r=email-dc4f&l=028-e5c&t=c&data=04|01|randy.c.cruz@nasa.gov|50669770d14b4949ab4208d93bb5fa7e|7005d45845be48ae8140d43da96dd17b|0|0|637606475049448475|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikl1haWwiLCJXVCi6Mn0=|1000&sdata=oZnIB0yLiby7AtHrn1j4afXa1LesWxDInBASiy5HSWM=&reserved=0>> (6/29, Curl) “ANALYSIS/OPINION: Every summer in Washington, D.C., the dog days arrive. Temperatures soar into the 100s in the nation’s capital, part of which was literally built in a swamp. ... NASA Administrator Bill Nelson, a former astronaut and U.S. senator, said Monday that he doesn’t think we ‘are alone’ here on Earth.”

#### NASA Administrator Bill Nelson Believes We Are Not Alone In The Universe

##### Fox News

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#### NASA Ranks As The Best Place To Work In Government For Ninth Year

##### NextGov

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#### Agencies Score High Marks From Employees On Handling Of Pandemic, But Leadership Issues Persist

##### Federal News Network

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021063002nasa&r=email-dc4f&l=02b-c51&t=c&data=04|01|randy.c.cruz@nasa.gov|50669770d14b4949ab4208d93bb5fa7e|7005d45845be48ae8140d43da96dd17b|0|0|637606475049468393|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikl1haWwiLCJXVCi6Mn0=|1000&sdata=dGqUpx4E+jvhPePnLbkLMPYgLMsvPqDZi4z543JsHY=&reserved=0>> (6/29, Moges) “Federal agencies received overwhelmingly positive feedback on their handling of the pandemic in 2020, but leaders still have much work to do to earn their employee’s confidence. That’s according to this year’s Best Places to Work in the Federal Government rankings. ... In maybe the least surprising result, NASA continued its domination among large agencies, ranking highest for the ninth year in a row with a score of 86.6 points — a 5.1 point increase from 2019. Rounding out the rest of the top five is the Intelligence Community with 76.7 points, followed by the Transportation Department (76.1), the Department of Health and Human Services (75.3) and the Commerce

Department (74.9).”

#### DC Circ. Relaunches Ex-NASA Worker’s Disability Bias Case

Law360

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“The D.C. Circuit revived a disability bias case from a former NASA employee on Tuesday, finding he wasn’t required to forfeit a \$35,000 U.S. Equal Employment Opportunity Commission win in order...”

#### Colombia Catches Hacker Wanted In The U.S. For ‘Gozi’ Virus

Washington Post

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“Colombian officials say they have arrested a Romanian hacker who is wanted in the U.S. for distributing a virus that infected more than a million computers from 2007 to 2012. ... Victims included individuals, corporations and also computers belonging to NASA.”

#### Federal Agencies Need Stricter Limits On Facial Recognition To Protect Privacy, Says Government Watchdog

Washington Post

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021063002nasa&r=email-dc4f&l=02e-1f9&t=c&data=04|01|randy.c.cruz@nasa.gov|50669770d14b4949ab4208d93bb5fa7e|7005d45845be48ae8140d43da96dd17b|0|0|637606475049478347|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6IkhWwiLCJXVCi6Mn0=|1000&sdata=OJ6wrTvpBUdq5PdkbY+2uuCs+Eljbgos24hly0U7uBE=&reserved=0>> (6/29)  
“The use of facial recognition technology is widespread throughout the federal government, and many agencies do not even know which systems they are using. That needs to change, the federal government’s main watchdog said in a new report. Twenty agencies — including departments not generally associated with law enforcement, such as the U.S. Postal Service, the Fish and Wildlife Service and NASA — have used the tech, according to the Government Accountability Office.”

#### Raymond Soto: The Awe And Wonder Of The Kennedy Space Center

USA Today

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021063002nasa&r=email-dc4f&l=02f-593&t=c&data=04|01|randy.c.cruz@nasa.gov|50669770d14b4949ab4208d93bb5fa7e|7005d45845be48ae8140d43da96dd17b|0|0|637606475049488303|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6IkhWwiLCJXVCi6Mn0=|1000&sdata=of3fLEH9GjU6X38ynHT2YleWYgaenXXBkw2VCuNJsqr=&reserved=0>> (6/29)  
“Editor’s Note: The USA TODAY NETWORK is auctioning its inaugural nonfungible token (NFT) inspired by the first newspaper delivered to space in 1971. Apollo 14 astronaut Alan Shepard, the first American in space, transported a special edition of TODAY, now FLORIDA TODAY and part of the USA TODAY NETWORK, to the moon and back. In celebration of the 50th anniversary of Shepard’s visit, select stories from that edition are being republished, and visual

journalist Pat Shannahan assembled more than 300 photographs, illustrations and front pages from five decades of space coverage to recreate the cover as an interactive mosaic.”

#### Evidence Suggests Aliens Might Be Surveilling Our Troops. Should We Be Worried?

Daily Caller

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021063002nasa&r=email-dc4f&l=030-c3d&t=c&data=04|01|randy.c.cruz@nasa.gov|50669770d14b4949ab4208d93bb5fa7e|7005d45845be48ae8140d43da96dd17b|0|0|637606475049488303|Unknown|TWFpbGZsb3d8eyJWIjoic4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikh1haWwiLCJXVCi6Mn0=|1000&sdata=U2hWTKPBt7cekuW9SRoJlqNF756LejOWPuGBqFmeO8=&reserved=0>> (6/29, Hall) “The Office of the Director of National Intelligence released a report Friday on unidentified flying objects but didn’t exclude the possibility that aliens exist. Experts and commentators have called for more research into this topic to solve the questions the public has on the unidentified aerial phenomena. ... Just because UAPs are unidentified doesn’t mean they’re aliens, Ravi Koppurapu, a research scientist at NASA, told the Daily Caller News Foundation.”

#### NASA Is Using Data Science To Fill Its Data Science Skills Gap

ZDNet

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021063002nasa&r=email-dc4f&l=031-a17&t=c&data=04|01|randy.c.cruz@nasa.gov|50669770d14b4949ab4208d93bb5fa7e|7005d45845be48ae8140d43da96dd17b|0|0|637606475049498261|Unknown|TWFpbGZsb3d8eyJWIjoic4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikh1haWwiLCJXVCi6Mn0=|1000&sdata=B0sfcMUQLf9SVjfy4ZMeKssV2m3nycqhq7BzgBfnFA=&reserved=0>> (6/29, Samuels) “All the evidence suggests it’s tough to get hold of talented data scientists – and that’s even true at NASA, says David Meza, acting branch chief of people analytics and senior data scientist at the US space agency. So what does a skills gap look like at NASA? Meza says his team is still taking a ‘deep dive’ into the organisation’s data science talent demands – but clear patterns are emerging, particularly in terms of identifying capability that already exists within the organisation.”

Other

#### After Delayed SpaceX Launch, Musk Says Reform Needed For Humanity To ‘Become A Spacefaring Civilization’

Fox Business

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021063002nasa&r=email-dc4f&l=032-67f&t=c&data=04|01|randy.c.cruz@nasa.gov|50669770d14b4949ab4208d93bb5fa7e|7005d45845be48ae8140d43da96dd17b|0|0|637606475049498261|Unknown|TWFpbGZsb3d8eyJWIjoic4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikh1aWwiLCJXVCi6Mn0=|1000&sdata=h4NjLzVz4sVYLZ7XDYAV6retO4UecHoAtPoVUPLGv0=&reserved=0>> (6/29, Best) “SpaceX was seconds away from sending dozens of satellites into orbit aboard its Falcon 9 rocket on Tuesday when the launch was called off because an airplane entered its launch zone. The launch’s 24-hour delay earned the ire of SpaceX CEO Elon Musk, who tweeted that the rocket’s ‘keep out zone’ is ‘unreasonably gigantic.’”

#### SpaceX Scrubs Transporter 2 Launch Attempt Due To Range Violation

NASA Space Flight

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021063002nasa&r=email-dc4f&l=033-1db&t=c&data=04|01|randy.c.cruz@nasa.gov|50669770d14b4949ab4208d93bb5fa7e|7005d45845be48ae8140d43da96dd17b|0|0|637606475049508216|Unknown|TWFpbGZsb3d8eyJWIjoic4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikh1>

haWwiLCJXVCI6Mn0=|1000&sdata=unPuHdm+eenQhoyDI0mV3i7jiQVHboTMLObunx4NU8Y=&reserved=0> (6/29, Lentz) "SpaceX was preparing to launch the Transporter 2 mission on Tuesday, June 29 at 14:56 EDT (18:56 UTC) from Space Launch Complex 40 (SLC-40) at Cape Canaveral Space Force Station. However, the countdown was held at T-30 seconds due to an aircraft within the range's restricted airspace, setting up a next attempt no earlier than Wednesday, June 30."

#### Falcon 9 Launch Scrub Highlights Airspace Integration Problems

Space News

<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021063002nasa&r=email-dc4f&l=034-

112&t=c&data=04|01|randy.c.cruz@nasa.gov|50669770d14b4949ab4208d93bb5fa7e|7005d45845be48ae8140d43da96dd17b|0|0|637606475049508216|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikl1haWwiLCJXVCI6Mn0=|1000&sdata=QCilWAYGuRkCE3oT1UWZMwP6da8KBwAi0e06uw8xfiM=&reserved=0> (6/29, Foust) "A SpaceX launch scrubbed in the final seconds of its countdown when an aircraft violated restricted airspace June 29 has aligned both the launch industry and the airline industry in their criticism of the Federal Aviation Administration. SpaceX was preparing to launch a Falcon 9 from Cape Canaveral Space Force Station in Florida at 2:56 p.m. Eastern. The Transporter-2 mission is carrying 88 satellites on SpaceX's second dedicated smallsat rideshare missions, supporting customers ranging from NASA and the Pentagon's Space Development Agency to several companies developing remote sensing and communications constellations."

#### Rarely Heard Sonic Booms Expected Tuesday As SpaceX Launches, Lands Falcon 9 Rocket

USA Today

<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021063002nasa&r=email-dc4f&l=035-

e41&t=c&data=04|01|randy.c.cruz@nasa.gov|50669770d14b4949ab4208d93bb5fa7e|7005d45845be48ae8140d43da96dd17b|0|0|637606475049518172|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikl1haWwiLCJXVCI6Mn0=|1000&sdata=jjHBK+BW+qLiZ5eo+YcOy1pw09Psqfb5JGIFXyfy4Bo=&reserved=0> (6/29, Kelly) "A rarely heard cannonade of sonic booms will reverberate across the Space Coast on Tuesday, the result of a SpaceX Falcon 9 rocket launch and subsequent landing at Cape Canaveral Space Force Station. After a 2:56 p.m. liftoff from Launch Complex 40, the rocket's 162-foot booster will separate from the payload-hauling second stage, flip around, and begin an autonomous descent toward nearby Landing Zone 1. Though it will have flown to an altitude hundreds of thousands of feet above Earth's surface, the booster will touch down just 5 1/2 miles from where it started."

#### Starlink Will Be Here In August, Elon Musk Says

Gizmodo

<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021063002nasa&r=email-dc4f&l=036-

35c&t=c&data=04|01|randy.c.cruz@nasa.gov|50669770d14b4949ab4208d93bb5fa7e|7005d45845be48ae8140d43da96dd17b|0|0|637606475049528128|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikl1haWwiLCJXVCI6Mn0=|1000&sdata=8bVrT9HM6fjM4j+WHRJ/ec1aGTG7mRmRE8Y+h0TUUY=&reserved=0> (6/29, Provenzano) "The low-orbit satellite broadband service Starlink will be available for global coverage beginning in August, Elon Musk said on Tuesday, with the exception of the north and south poles. During a virtual talk at the Mobile World Congress 2021, Musk announced that Starlink's high-speed broadband service is 'operational now in about 12 countries, and more are being added every month.'"

#### Elon Musk Counts On 500,000 Starlink Users Within The Next Year

The Verge

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021063002nasa&r=email-dc4f&l=037-aeb&t=c&data=04|01|randy.c.cruz@nasa.gov|50669770d14b4949ab4208d93bb5fa7e|7005d45845be48ae8140d43da96dd17b|0|0|637606475049528128|Unknown|TWFpbGZsb3d8eyJWljoimc4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikl1haWwiLCJXVCi6Mn0=|1000&sdata=yFZfnygrm8L5EYLOM2kGihq1xHYqY8TKnd/BkXF94o=&reserved=0>> (6/29, Roulette) “SpaceX’s satellite internet network, Starlink, should have roughly 500,000 users within the next 12 months, Elon Musk said at the Mobile World Congress (MWC) conference on Tuesday. SpaceX’s current goal, Musk said, is to beam broadband internet to most of the planet by August. The internet network, in the midst of an open beta phase, has launched more than 1,700 satellites to low-Earth orbit since 2018 and recently surpassed a ‘strategically significant’ benchmark of 69,420 active users, Musk told MWC.”

Low Supply Drove U.S. Home Prices Higher In April

Washington Post

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SpaceX Had To Reschedule Its Rocket Launch Because A Helicopter Entered The ‘Keep Out Zone’ With Seconds To Go — And Elon Musk Isn’t Happy About It

Insider

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021063002nasa&r=email-dc4f&l=039-0a4&t=c&data=04|01|randy.c.cruz@nasa.gov|50669770d14b4949ab4208d93bb5fa7e|7005d45845be48ae8140d43da96dd17b|0|0|637606475049538088|Unknown|TWFpbGZsb3d8eyJWljoimc4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikl1haWwiLCJXVCi6Mn0=|1000&sdata=evZu5rFNjYOOlNiymsJHFfQ/g0JuEkBGRhfpuCtDqWA=&reserved=0>> (6/29, Canales) “Tesla CEO Elon Musk said a SpaceX launch was called off because an aircraft entered the so-called keep out zone. Musk, who also is CEO of SpaceX, tweeted Tuesday that the ‘keep out zone’ is ‘unreasonably gigantic,’ and since an aircraft entered it, the company was not able to launch its own.”

Elon Musk Calls For Reform After SpaceX Flight Canceled Due To Air Space Crowding

Newsweek

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## Elon Musk Calls Rocket Launch Regulations 'Broken' After Aircraft Delays SpaceX Launch

CNBC

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021063002nasa&r=email-dc4f&l=03b-222&t=c&data=04|01|randy.c.cruz@nasa.gov|50669770d14b4949ab4208d93bb5fa7e|7005d45845be48ae8140d43da96dd17b|0|0|637606475049548041|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikh1haWwiLCJXVCi6Mn0=|1000&sdata=oxHysLU3w/kacXDzNMq6zecdMUVgMvcFKUn9h5Chbw=&reserved=0>> (6/29, Sheetz) "SpaceX was seconds away from launching its 20th mission of this year Tuesday when the countdown was halted due to an aircraft entering the launch range, delaying the mission by at least a day. Elon Musk took to Twitter to voice his frustration about the delay, reiterating prior criticisms he has made about regulations around the business of launching rockets."

## Elon Musk Says Starlink Has 2 Major Telecommunications Partners

Fox Business

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## Elon Musk Says SpaceX Is Losing Money On Its Starlink Terminals But Has Found A Way To Cut Costs With Updated Versions

Insider

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021063002nasa&r=email-dc4f&l=03d-efa&t=c&data=04|01|randy.c.cruz@nasa.gov|50669770d14b4949ab4208d93bb5fa7e|7005d45845be48ae8140d43da96dd17b|0|0|637606475049557997|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikh1aWwiLCJXVCi6Mn0=|1000&sdata=/+k7sbADJzGf0fP4W1+BH5OG0CKqw7QtDzM9yvJhmnE=&reserved=0>> (6/29) "Elon Musk said Starlink will build new satellite terminals that can help the company save money. Terminals currently cost \$1,000 for each, he said. They're sold to customers for \$500."

## Elon Musk Says Starlink Will Be Available Worldwide In August

CNET News

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021063002nasa&r=email-dc4f&l=03e-f75&t=c&data=04|01|randy.c.cruz@nasa.gov|50669770d14b4949ab4208d93bb5fa7e|7005d45845be48ae8140d43da96dd17b|0|0|637606475049567954|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikh1aWwiLCJXVCi6Mn0=|1000&sdata=BoAqN6tfkvC5gDKTSkyTIUgz/RBy7cujCtMY5rBnl=&reserved=0>> (6/29, Reardon) "Elon Musk's satellite broadband service, Starlink, will be available worldwide except the North and South Poles starting in August, the billionaire entrepreneur said Tuesday during a talk at the virtual Mobile World Congress 2021. Starlink is 'operational now in about 12 countries, and more are being added every month,' Musk said."

## SpaceX Rocket Launch Carrying 88 Satellites Delayed By A Wayward Plane

SPACE

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## SpaceX Transporter-2 Launch Today Scrubbed And Elon Musk Isn't Happy

SlashGear

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## Elon Musk Touts SpaceX Surging Internet Growth, But Still Says Goal Is To Avoid Bankruptcy

CNN Business

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021063002nasa&r=email-dc4f&l=041-72a&t=c&data=04|01|randy.c.cruz@nasa.gov|50669770d14b4949ab4208d93bb5fa7e|7005d45845be48ae8140d43da96dd17b|0|0|637606475049577909|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikl1haWwiLCJXVCi6Mn0=|1000&sdata=aF3Le6odTzg+3jXITf1BnYVmZJaNdQf/J3qfb3aS6VQ=&reserved=0>> (6/29, Wattles) “SpaceX has put more than 1,500 internet-beaming satellites into orbit, signed up more than 69,000 customers, installed ground stations in 12 countries and has plans to expand its one-of-a-kind network’s coverage all over the world — except the North and South pole — by next month. Still, SpaceX CEO Elon Musk said Tuesday, not running out of money is top of mind.”

## SpaceX Scrubs Transporter-2 Launch Due To Range Issue [Updated]

Ars Technica

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021063002nasa&r=email-dc4f&l=042-b99&t=c&data=04|01|randy.c.cruz@nasa.gov|50669770d14b4949ab4208d93bb5fa7e|7005d45845be48ae8140d43da96dd17b|0|0|637606475049587866|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikl1haWwiLCJXVCi6Mn0=|1000&sdata=gpotnJ4RMjo3PX/H9gPoKbZ0p7KyTPqZUzeBEumZk5Q=&reserved=0>> (6/29, Berger) “3pm ET Tuesday update: The countdown clock got to T-11 seconds on Tuesday afternoon before SpaceX called a hold to the launch of its Transporter-2 rideshare mission. The scrub was necessitated by a range issue caused by an airplane in the launch zone. The company will now turn around the vehicle for another launch attempt on Wednesday afternoon.”



## Musk Says May Need \$30 Billion To Keep Starlink In Orbit

Reuters

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021063002nasa&r=email-dc4f&l=043-04c&t=c&data=04|01|randy.c.cruz@nasa.gov|50669770d14b4949ab4208d93bb5fa7e|7005d45845be48ae8140d43da96dd17b|0|0|637606475049587866|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikl1haWwiLCJXVCi6Mn0=|1000&sdata=J5NB/1qNO0tVyQkul+xPD8x6+qaqLGkNCIUREGrvss=&reserved=0>> (6/29, Mukherjee, Laudette) “Billionaire entrepreneur Elon Musk said on Tuesday that his Starlink satellite internet venture was growing quickly as he forecast total investment costs in the business at between \$20 billion and \$30 billion. Without disclosing details, he also said Starlink has ‘two quite significant partnerships with major country telcos’ that could help the SpaceX division plug gaps in fifth-generation mobile and cellular networks.”

## SpaceX Had To Reschedule Its Rocket Launch Because A Helicopter Entered The ‘Keep Out Zone’ With Seconds To Go – And Elon Musk Isn’t Happy About It

Insider

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021063002nasa&r=email-dc4f&l=044-747&t=c&data=04|01|randy.c.cruz@nasa.gov|50669770d14b4949ab4208d93bb5fa7e|7005d45845be48ae8140d43da96dd17b|0|0|637606475049597823|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikl1haWwiLCJXVCi6Mn0=|1000&sdata=RJa4eT/zibhz8FwX+I6wIlnOQ/26FwKY2sAyzBuG2Bck=&reserved=0>> (6/29) “Elon Musk tweeted an aircraft crossed the ‘keep out zone,’ preventing a SpaceX rocket launch. The SpaceX CEO said that the zone is ‘unreasonably gigantic.’”

## Virgin Orbit Looks To Increase Launch Rates In 2022

Space News

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021063002nasa&r=email-dc4f&l=045-002&t=c&data=04|01|randy.c.cruz@nasa.gov|50669770d14b4949ab4208d93bb5fa7e|7005d45845be48ae8140d43da96dd17b|0|0|637606475049597823|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikl1haWwiLCJXVCi6Mn0=|1000&sdata=VY/2U/9GHu4Eq9luSScZIXfvy7mgkvZejKrY0mn7o/A=&reserved=0>> (6/29, Foust) “On the eve of its second revenue-generating launch, Virgin Orbit is looking to 2022 to ramp up its launch activity and operate from several airports in the United States and Great Britain. In a call with reporters June 29, Virgin Orbit Chief Executive Dan Hart confirmed that the company was ‘green for launch’ on a LauncherOne mission called ‘Tubular Bells: Part One.’”

## SpaceX’s Starship Could Launch To Orbit For 1st Time As Soon As July

SPACE

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## Former U.S. Air Force Top Counsel Tom Ayres Joins Voyager Space

### Space News

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## **[EXTERNAL] NASA Morning Briefing for Wednesday, March 25, 2020**

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### Editor's Note

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#### Top Stories

##### Study: Antarctic Glacier Retreated 3 Miles In 22 Years

The Hill <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020032502nasa-26r-3Demail-2Dafb9-26l-3D003-2Ded2-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=4MUKGB04LFj\\_vvWeFMYBJfjAexbAKuJuK6gOerxBvjks=penVIVUzYdquLS1fg-R0q\\_89H3NeTHo8-LOhuF0G8Cs&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020032502nasa-26r-3Demail-2Dafb9-26l-3D003-2Ded2-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=4MUKGB04LFj_vvWeFMYBJfjAexbAKuJuK6gOerxBvjks=penVIVUzYdquLS1fg-R0q_89H3NeTHo8-LOhuF0G8Cs&e=>)> (3/24, Guzman) "Scientists say a glacier on the icy continent of Antarctica that contains enough water to eventually raise global sea levels by 5 feet has been melting rapidly in the last two decades. A new study published in the journal Geophysical Research Letters found East Antarctica's Denman Glacier has retreated nearly 3 miles in just the past 22 years. Researchers at the University of California, Irvine and NASA's Jet Propulsion Laboratory are concerned the shape of the ground surface beneath the ice sheet could make it more susceptible to climate-driven collapse."

##### How Astronaut Nick Hague Survived An Aborted Soyuz Flight

Forbes <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020032502nasa-26r-3Demail-2Dafb9-26l-3D004-2D85f-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=4MUKGB04LFj\\_vvWeFMYBJfjAexbAKuJuK6gOerxBvjks=Bm6JesRDP68mI\\_T0iCp9uEXHh-Xfr-oWoulZGcmidJk&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020032502nasa-26r-3Demail-2Dafb9-26l-3D004-2D85f-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=4MUKGB04LFj_vvWeFMYBJfjAexbAKuJuK6gOerxBvjks=Bm6JesRDP68mI_T0iCp9uEXHh-Xfr-oWoulZGcmidJk&e=>)> (3/24, Clash) "Nick Hague is one lucky man. On October 11, 2018, less than two minutes into flight traveling at 4,000 mph and about 30 miles above the Earth, his Soyuz MS-10 rocket failed. Quick thinking and automated systems separated the crew from the rocket immediately, and allowed them to make a violent bullet reentry into the Earth's atmosphere. They landed, of course, way off course in a remote part of Kazakhstan, but at least they were alive – and uninjured. Undaunted, Hague flew again on the Soyuz MS-12, in 2019, this time docking with the International Space Station and living there for several months. We recently caught up with Hague, 44, to

discuss these events and more. Following are edited excerpts from a longer telephone conversation from his home in Houston, Texas.”

#### Isolation Tips From An Astronaut Who Spent A Year In Space

USA Today <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020032502nasa-26r-3Demail-2Dafb9-26l-3D005-2D4a5-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=4MUKGB04LFj\\_vvWeFMYBJfjAexbAKuJuK6gOerxBvjks=s=hKiosPwwRCK2vQlff-VniZY5lflI3GDFgUpOVf1cYPU&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020032502nasa-26r-3Demail-2Dafb9-26l-3D005-2D4a5-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=4MUKGB04LFj_vvWeFMYBJfjAexbAKuJuK6gOerxBvjks=s=hKiosPwwRCK2vQlff-VniZY5lflI3GDFgUpOVf1cYPU&e=>) (3/24) “Don’t get cabin fever while you’re at home self-isolating. Hear how to stay mentally and physically healthy from retired NASA astronaut Scott Kelly.”

#### SpaceX’s Simulated Spacecraft Becomes Unstable In Parachute Test: CNBC

Reuters <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020032502nasa-26r-3Demail-2Dafb9-26l-3D006-2D6ab-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=4MUKGB04LFj\\_vvWeFMYBJfjAexbAKuJuK6gOerxBvjks=s=9S9uhQZOJ5mGLFfyf1j4imcYfn4YbT7R4kwtH75UY9k&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020032502nasa-26r-3Demail-2Dafb9-26l-3D006-2D6ab-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=4MUKGB04LFj_vvWeFMYBJfjAexbAKuJuK6gOerxBvjks=s=9S9uhQZOJ5mGLFfyf1j4imcYfn4YbT7R4kwtH75UY9k&e=>) (3/25) “Private rocket company SpaceX had an incident during parachute testing for its Crew Dragon capsule, in which the simulated spacecraft being tested became unstable and was dropped early, according to a tweet from a CNBC reporter. No one was injured in the incident, according to the tweet.”

#### Curiosity Rover Shares New Selfie, Climbs Steep Hill On Mars

CNN <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020032502nasa-26r-3Demail-2Dafb9-26l-3D007-2Dcb0-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=4MUKGB04LFj\\_vvWeFMYBJfjAexbAKuJuK6gOerxBvjks=s=6BiUeqqw5tnMSpulEPbVU2sQ0hTg97tj3AYjjOV8Ts&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020032502nasa-26r-3Demail-2Dafb9-26l-3D007-2Dcb0-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=4MUKGB04LFj_vvWeFMYBJfjAexbAKuJuK6gOerxBvjks=s=6BiUeqqw5tnMSpulEPbVU2sQ0hTg97tj3AYjjOV8Ts&e=>) (3/24, Strickland) “NASA’s Curiosity rover just conquered a major milestone on Mars – and it took a selfie to celebrate the feat. Curiosity recently finished a record-setting climb by rolling up its steepest hill to date. It’s called Greenheugh Pediment and the challenging hill created a 31-degree tilt for the rover. Previously, the only other rover to experience more of a tilt was the Opportunity rover’s 32-degree record set in 2016.”

#### 8 European Spacecraft Put In Hibernation Amid Virus Lockdown

Associated Press <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020032502nasa-26r-3Demail-2Dafb9-26l-3D008-2D636-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=4MUKGB04LFj\\_vvWeFMYBJfjAexbAKuJuK6gOerxBvjks=s=rWNe2Tm1CTvaA7jgBABzIUmuPxGr9br6gvklGntJmll&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020032502nasa-26r-3Demail-2Dafb9-26l-3D008-2D636-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=4MUKGB04LFj_vvWeFMYBJfjAexbAKuJuK6gOerxBvjks=s=rWNe2Tm1CTvaA7jgBABzIUmuPxGr9br6gvklGntJmll&e=>) (3/24) “The European Space Agency said Tuesday that it is putting eight of its spacecraft into hibernation as it scales down operations during the coronavirus outbreak. The agency said it is further reducing the already limited number of staff working on site at its mission control in Darmstadt, Germany. As a result, the instruments and data collection on some space probes are being temporarily stopped.”

Flight

No content.

Earth

### Study: Antarctic Glacier Retreated 3 Miles In 22 Years

The Hill <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020032502nasa-26r-3Demail-2Dafb9-26l-3D009-2D3cf-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=4MUKGB04LFj\\_vvWeFMYBJfjAexbAKuJuK6gOerxBvjk&s=uJr0Uq8gkVhGAgusuJzhaWWPftA6339ryDbf8-NUyBE&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020032502nasa-26r-3Demail-2Dafb9-26l-3D009-2D3cf-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=4MUKGB04LFj_vvWeFMYBJfjAexbAKuJuK6gOerxBvjk&s=uJr0Uq8gkVhGAgusuJzhaWWPftA6339ryDbf8-NUyBE&e=>) (3/24, Guzman) "Scientists say a glacier on the icy continent of Antarctica that contains enough water to eventually raise global sea levels by 5 feet has been melting rapidly in the last two decades. A new study published in the journal Geophysical Research Letters found East Antarctica's Denman Glacier has retreated nearly 3 miles in just the past 22 years. Researchers at the University of California, Irvine and NASA's Jet Propulsion Laboratory are concerned the shape of the ground surface beneath the ice sheet could make it more susceptible to climate-driven collapse."

### Antarctic Glacier Melting Fast Enough To Raise Sea Level By 5 Feet: Study

New York Daily News <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020032502nasa-26r-3Demail-2Dafb9-26l-3D00a-2De30-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=4MUKGB04LFj\\_vvWeFMYBJfjAexbAKuJuK6gOerxBvjk&s=oa-LrhEdhm\\_iFwX4TUn5Noh-MeyYw05orsQ2NSXv-g&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020032502nasa-26r-3Demail-2Dafb9-26l-3D00a-2De30-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=4MUKGB04LFj_vvWeFMYBJfjAexbAKuJuK6gOerxBvjk&s=oa-LrhEdhm_iFwX4TUn5Noh-MeyYw05orsQ2NSXv-g&e=>) (3/24, Braine) "An Antarctic glacier previously thought to have been more stable than its melting neighbors has retreated by 3 miles over the past 22 years, indicating it could be an Achilles heel in the climate change scenario, a new study says. The retreat of the Denman Glacier in eastern Antarctica has drawn attention to the shape of the land underneath the ice sheet could increase its susceptibility to collapse due to climate change and warming, researchers at the University of California, Irvine (UCI) and NASA's Jet Propulsion Laboratory said in a statement."

### Melting Faster Than Expected, This Vast Glacier Could Raise Seas By 5 Feet

SlashGear <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020032502nasa-26r-3Demail-2Dafb9-26l-3D00b-2Db5d-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=4MUKGB04LFj\\_vvWeFMYBJfjAexbAKuJuK6gOerxBvjk&s=IdUMFu7PZYNUhV2B2\\_D7HZpjy6loQVvkZEyW2DauOVk4&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020032502nasa-26r-3Demail-2Dafb9-26l-3D00b-2Db5d-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=4MUKGB04LFj_vvWeFMYBJfjAexbAKuJuK6gOerxBvjk&s=IdUMFu7PZYNUhV2B2_D7HZpjy6loQVvkZEyW2DauOVk4&e=>) (3/24, Davies) "A fast-retreating glacier melted through climate change could release billions of tons of ice, researchers have discovered, enough to raise global sea levels almost five feet. East Antarctica had been considered an area less at risk for glacial melt by scientists tracking global warming, but new findings published this week suggest that is not in fact the case. ... Looking at historical data covering the past 22 years, researchers at the University of California, Irvine and NASA's Jet Propulsion Laboratory found signs of potential marine ice sheet instability."

### Greenland Is Now Melting; Report Says It Shed 600 Billion Tons Of Ice

Tech Times <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020032502nasa-26r-3Demail-2Dafb9-26l-3D00c-2D9e9-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=4MUKGB04LFj\\_vvWeFMYBJfjAexbAKuJuK6gOerxBvjk&s=Bq31PtI4uU-](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020032502nasa-26r-3Demail-2Dafb9-26l-3D00c-2D9e9-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=4MUKGB04LFj_vvWeFMYBJfjAexbAKuJuK6gOerxBvjk&s=Bq31PtI4uU-)



NHufd95BHEUxOAUbKfYFjfb4ioeWhc9z0&e=> (3/24) "Here's a public service announcement: Coronavirus is not the only problem that humans are facing today; Greenland is also heating up at a faster rate than before. This means that climate change is still knocking Mother Nature on a very rapid process compared to before. Based on research, Greenland had just lost ice amounting to 600 billion tons within just two months from 2019. ... According to a research published in Geophysical Exploration Letters and National Aeronautics and Space Administration or NASA, Greenland which located in the North Atlantic Ocean is now seeking everyone's help as the island reportedly lost 600 billion tons of ice in a two-month season in 2019 which caused the global sea to increase levels by nearly a tenth of an inch or 2.2 millimeters."

#### Antarctica Alert: NASA Data Detects Dramatic Instability Under 'Doomsday' Denman Glacier

Daily Express (UK) <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020032502nasa-26r-3Demail-2Dafb9-26l-3D00d-2D416-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=4MUKGB04LFj\\_vvWeFMYBJfjAexbAKuJuK6gOerxBvjk&s=UZGdifXdazNsKI1EjvA64EtA4L1Ht7iw9nixo5M4mdl&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020032502nasa-26r-3Demail-2Dafb9-26l-3D00d-2D416-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=4MUKGB04LFj_vvWeFMYBJfjAexbAKuJuK6gOerxBvjk&s=UZGdifXdazNsKI1EjvA64EtA4L1Ht7iw9nixo5M4mdl&e=>) (3/24, Fish) "ANTARCTICA experts have warned the ice continent's Denman Glacier is far more vulnerable than anticipated, suggesting climate change could have apocalyptic repercussions. An Antarctic glacier containing enough water to eventually raise global sea levels by five feet (1.5m) has been melting dramatically in the last two decades. This doomsday report is the result of landmark NASA research."

#### Ancestor Of All Modern Animals Found In Ancient Australian Mud

UPI <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020032502nasa-26r-3Demail-2Dafb9-26l-3D00e-2Dd96-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=4MUKGB04LFj\\_vvWeFMYBJfjAexbAKuJuK6gOerxBvjk&s=gK6gITvgFBZfs1SWxHHpBwvrc3L2Rd-ZGwgNpep15ZQ&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020032502nasa-26r-3Demail-2Dafb9-26l-3D00e-2Dd96-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=4MUKGB04LFj_vvWeFMYBJfjAexbAKuJuK6gOerxBvjk&s=gK6gITvgFBZfs1SWxHHpBwvrc3L2Rd-ZGwgNpep15ZQ&e=>) (3/24, Hays) "A tiny worm-like species called *Ikaria wariootia* sits at the top of the family tree that contains most modern animals, including humans. ... After winning grant funding from NASA, a team of researchers in the United States and Australia were able make out imprints along the rims of the burrows using a three-dimensional laser scanner."

#### America's Supercomputers Are Now Helping Scientists Fight Coronavirus

Vice <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020032502nasa-26r-3Demail-2Dafb9-26l-3D00f-2De09-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=4MUKGB04LFj\\_vvWeFMYBJfjAexbAKuJuK6gOerxBvjk&s=S8ANBK5gkOCBQ\\_Mi600A2M8ghjalb7qmTBrEC6l1kCA&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020032502nasa-26r-3Demail-2Dafb9-26l-3D00f-2De09-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=4MUKGB04LFj_vvWeFMYBJfjAexbAKuJuK6gOerxBvjk&s=S8ANBK5gkOCBQ_Mi600A2M8ghjalb7qmTBrEC6l1kCA&e=>) (3/24, Bender) "The White House announced the creation of a supercomputing consortium on Monday that will pool resources to aid in researching and modelling COVID-19. Fourteen different organisations, both federal and private, will give teams of scientists free access to time on their high-powered computing clusters and support from staff. ... NASA will be sharing its High-End Computing Capability Portfolio, which the organization uses for large-scale modeling and simulations, while Rensselaer Polytechnic Institute (RPI) will enlist AiMOS, a supercomputer designed to explore applications of artificial intelligence."

#### Humans in Space

#### How Astronaut Nick Hague Survived An Aborted Soyuz Flight

Forbes <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020032502nasa-26r-3Demail-2Dafb9-26l-3D010-2Dda9-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=4MUKGB04LFj\\_vvWeFMYBJfjAexbAKuJuK6gOerxBvjk&s=pi9NodbKFHihEHJAc8HGM8QMsg5OjEhHbhNZjFNPYto&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020032502nasa-26r-3Demail-2Dafb9-26l-3D010-2Dda9-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=4MUKGB04LFj_vvWeFMYBJfjAexbAKuJuK6gOerxBvjk&s=pi9NodbKFHihEHJAc8HGM8QMsg5OjEhHbhNZjFNPYto&e=>) (3/24, Clash) “Nick Hague is one lucky man. On October 11, 2018, less than two minutes into flight traveling at 4,000 mph and about 30 miles above the Earth, his Soyuz MS-10 rocket failed. Quick thinking and automated systems separated the crew from the rocket immediately, and allowed them to make a violent bullet reentry into the Earth’s atmosphere. They landed, of course, way off course in a remote part of Kazakhstan, but at least they were alive – and uninjured. Undaunted, Hague flew again on the Soyuz MS-12, in 2019, this time docking with the International Space Station and living there for several months. We recently caught up with Hague, 44, to discuss these events and more. Following are edited excerpts from a longer telephone conversation from his home in Houston, Texas.”

#### Isolation Tips From An Astronaut Who Spent A Year In Space

USA Today <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020032502nasa-26r-3Demail-2Dafb9-26l-3D011-2Dccb-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=4MUKGB04LFj\\_vvWeFMYBJfjAexbAKuJuK6gOerxBvjk&s=YbqDBLA1nEda45Jjg9K\\_eWG0LwwtdeV6D39sXIgRZZ4&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020032502nasa-26r-3Demail-2Dafb9-26l-3D011-2Dccb-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=4MUKGB04LFj_vvWeFMYBJfjAexbAKuJuK6gOerxBvjk&s=YbqDBLA1nEda45Jjg9K_eWG0LwwtdeV6D39sXIgRZZ4&e=>) (3/24) “Don’t get cabin fever while you’re at home self-isolating. Hear how to stay mentally and physically healthy from retired NASA astronaut Scott Kelly.”

#### 4 Astronauts Reveal Their Secrets To Surviving Months Of Isolation With Other People

Business Insider <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020032502nasa-26r-3Demail-2Dafb9-26l-3D012-2D6e0-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=4MUKGB04LFj\\_vvWeFMYBJfjAexbAKuJuK6gOerxBvjk&s=LQANzMZ2gc2TkRXHiZoBgW5KEGoKZELEDn-588f658g&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020032502nasa-26r-3Demail-2Dafb9-26l-3D012-2D6e0-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=4MUKGB04LFj_vvWeFMYBJfjAexbAKuJuK6gOerxBvjk&s=LQANzMZ2gc2TkRXHiZoBgW5KEGoKZELEDn-588f658g&e=>) (3/24, Mosher) “Space may be the final frontier, but living off of Earth can be extremely challenging. Due to a long and fussy list of survival needs, plus the expense of traveling to and from orbit, residing and working in space means eeking it out in very cramped accommodations for long periods of time. ... Here are some of the most sage and sensible tips from NASA’s and other space agencies’ finest.”

#### Chris Hadfield And Other Astronauts Share Self-Isolation Tips During Coronavirus

CNET News <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020032502nasa-26r-3Demail-2Dafb9-26l-3D013-2D7a9-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=4MUKGB04LFj\\_vvWeFMYBJfjAexbAKuJuK6gOerxBvjk&s=FI8eNYa\\_-jHueD9BBI74oPW\\_UiT0A7zAJPePj8Me7No&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020032502nasa-26r-3Demail-2Dafb9-26l-3D013-2D7a9-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=4MUKGB04LFj_vvWeFMYBJfjAexbAKuJuK6gOerxBvjk&s=FI8eNYa_-jHueD9BBI74oPW_UiT0A7zAJPePj8Me7No&e=>) (3/24, Burton) “For the most up-to-date news and information about the coronavirus pandemic, visit the WHO website. Self-isolating and social distancing to help slow down the spread of coronavirus isn’t easy, but for astronauts like Chris Hadfield it’s completely normal. Working in close quarters with limited supplies while far from family and friends is what astronauts must get used to while working for months at a time in space.”

Astronauts Know How To Handle Isolation: Here Are Tips From Scott Kelly, Peggy Whitson And More.

SPACE <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020032502nasa-26r-3Demail-2Dafb9-26l-3D014-2D8f8-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=4MUKGB04LFj\\_vvWeFMYBJfjAexbAKuJuK6gOerxBvjk&s=Fwhf3iMQHDD3V1CmfECS6\\_kAfIIA5ZrcTZ0ZADb34sY&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020032502nasa-26r-3Demail-2Dafb9-26l-3D014-2D8f8-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=4MUKGB04LFj_vvWeFMYBJfjAexbAKuJuK6gOerxBvjk&s=Fwhf3iMQHDD3V1CmfECS6_kAfIIA5ZrcTZ0ZADb34sY&e=>) (3/24, Gohd) "Right now, a huge percentage of people around the globe are living in isolation to "flatten the curve" and reduce the spread of the coronavirus SARS-CoV-2. But it can be really difficult to adjust to social distancing and quarantine, especially for those of us who are used to commuting and traveling and going out with our friends. Luckily, astronauts have immeasurable experience with isolation, and a few have chimed in with their expert advice. In a satellite interview with CBS This Morning, retired NASA astronaut Peggy Whitson, who, in 2017 broke the record for cumulative total days spent in space by any NASA astronaut and who has spent a total of 665 days in space, chimed in on the topic today (March 23)."

#### Astronauts Offer Advice On Self-Isolation

WESH-TV Orlando (FL) <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020032502nasa-26r-3Demail-2Dafb9-26l-3D015-2D9f7-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=4MUKGB04LFj\\_vvWeFMYBJfjAexbAKuJuK6gOerxBvjk&s=5Mfq5s7G5mXLOYoWI-BPx3sB49N07rrSAO02OuKf-oc&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020032502nasa-26r-3Demail-2Dafb9-26l-3D015-2D9f7-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=4MUKGB04LFj_vvWeFMYBJfjAexbAKuJuK6gOerxBvjk&s=5Mfq5s7G5mXLOYoWI-BPx3sB49N07rrSAO02OuKf-oc&e=>) (3/24) "You should be spending a lot of time at home right now, doing that self-isolation we're all talking about. And nasa is offering tips to make this time a little easier."

#### Astronaut Advice On Self-Isolation; Orion Space Capsule Transported To Florida

WKCF-TV Orlando (FL) <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020032502nasa-26r-3Demail-2Dafb9-26l-3D016-2D699-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=4MUKGB04LFj\\_vvWeFMYBJfjAexbAKuJuK6gOerxBvjk&s=f8l3\\_PkVTmmTgpl8ntWNEH2BUu2\\_21W1BWx4-CsU1Cc&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020032502nasa-26r-3Demail-2Dafb9-26l-3D016-2D699-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=4MUKGB04LFj_vvWeFMYBJfjAexbAKuJuK6gOerxBvjk&s=f8l3_PkVTmmTgpl8ntWNEH2BUu2_21W1BWx4-CsU1Cc&e=>) (3/24) "You are likely spending a lot more time at home, possibly even self-isolating. NASA wants to offer tips to make this a little easier. Astronauts, after all, are pretty good at living in a confined space for extended periods of time."

#### NASA Joins SpaceX Falcon 9 Investigation

Aviation Week <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020032502nasa-26r-3Demail-2Dafb9-26l-3D017-2D564-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=4MUKGB04LFj\\_vvWeFMYBJfjAexbAKuJuK6gOerxBvjk&s=UI1Q5IX\\_88PaCPUMvpAJpoFcsQdTRSVADpnLVDdkC0A&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020032502nasa-26r-3Demail-2Dafb9-26l-3D017-2D564-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=4MUKGB04LFj_vvWeFMYBJfjAexbAKuJuK6gOerxBvjk&s=UI1Q5IX_88PaCPUMvpAJpoFcsQdTRSVADpnLVDdkC0A&e=>) (3/24) "Representatives from NASA's Commercial Crew Program are joining the SpaceX investigation into why a Falcon 9 engine shut down early during launch last week, NASA said on March 23."

#### NASA To Participate In SpaceX Engine Anomaly Investigation

Space News <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020032502nasa-26r-3Demail-2Dafb9-26l-3D018-2Ddeb4-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=4MUKGB04LFj\\_vvWeFMYBJfjAexbAKuJuK6gOerxBvjk&s=UI1Q5IX\\_88PaCPUMvpAJpoFcsQdTRSVADpnLVDdkC0A&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020032502nasa-26r-3Demail-2Dafb9-26l-3D018-2Ddeb4-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=4MUKGB04LFj_vvWeFMYBJfjAexbAKuJuK6gOerxBvjk&s=UI1Q5IX_88PaCPUMvpAJpoFcsQdTRSVADpnLVDdkC0A&e=>)

3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=4MUKGB04LFj\_vvWeFMYBJfjAexbAKuJuK6gOerxBvj&s=a6f0\_hcfPZykHQeYW-BiH5-FZHvXcDty9RBUrR98h6E&e=> (3/24, Foust) "NASA representatives will be part of an ongoing SpaceX investigation into an engine anomaly on a recent Falcon 9 launch as the company prepares for a Crew Dragon mission carrying two NASA astronauts. NASA spokesman Josh Finch said March 24 that personnel from NASA's commercial crew program will be represented in SpaceX's investigation of an engine that prematurely shut down during a March 18 launch of 60 Starlink satellites. That participation is intended to comply with provisions in SpaceX's Commercial Crew Transportation Capability, or CCTCap, contract with NASA."

#### SpaceX's Simulated Spacecraft Becomes Unstable In Parachute Test: CNBC

Reuters <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020032502nasa-26r-3Demail-2Dafb9-26l-3D019-2D932-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=4MUKGB04LFj\\_vvWeFMYBJfjAexbAKuJuK6gOerxBvj&s=JMphsCeDe2E7utvlyhKi5hqbURMdGOIH8f07a5qWpQe&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020032502nasa-26r-3Demail-2Dafb9-26l-3D019-2D932-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=4MUKGB04LFj_vvWeFMYBJfjAexbAKuJuK6gOerxBvj&s=JMphsCeDe2E7utvlyhKi5hqbURMdGOIH8f07a5qWpQe&e=>) (3/25) "Private rocket company SpaceX had an incident during parachute testing for its Crew Dragon capsule, in which the simulated spacecraft being tested became unstable and was dropped early, according to a tweet from a CNBC reporter. No one was injured in the incident, according to the tweet."

#### SpaceX Reports Problem During Crew Dragon Parachute Test

Space News <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020032502nasa-26r-3Demail-2Dafb9-26l-3D01a-2D8fa-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=4MUKGB04LFj\\_vvWeFMYBJfjAexbAKuJuK6gOerxBvj&s=6vSUakj3rfhY3H2eG1fZzjh\\_mRiMN2\\_sTzEu8D7RTrg&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020032502nasa-26r-3Demail-2Dafb9-26l-3D01a-2D8fa-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=4MUKGB04LFj_vvWeFMYBJfjAexbAKuJuK6gOerxBvj&s=6vSUakj3rfhY3H2eG1fZzjh_mRiMN2_sTzEu8D7RTrg&e=>) (3/24, Foust) "SpaceX said March 24 that one of the final parachute tests for its Crew Dragon spacecraft went awry, a problem it blamed on the test setup and not a flaw with the parachutes themselves. In a statement, SpaceX said that it attempted to perform a parachute test by dropping a test article from a helicopter. The company didn't describe the test article, but in some past tests it has used a mockup of a Crew Dragon spacecraft."

#### SpaceX Statement On Parachute Test Article Loss

SpaceRef <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020032502nasa-26r-3Demail-2Dafb9-26l-3D01b-2D432-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=4MUKGB04LFj\\_vvWeFMYBJfjAexbAKuJuK6gOerxBvj&s=WLIOS7ebeLy-d0yRqj50pgqdYHirDqYudne3IMXcc7M&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020032502nasa-26r-3Demail-2Dafb9-26l-3D01b-2D432-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=4MUKGB04LFj_vvWeFMYBJfjAexbAKuJuK6gOerxBvj&s=WLIOS7ebeLy-d0yRqj50pgqdYHirDqYudne3IMXcc7M&e=>) (3/24) "During a planned parachute drop test today, the test article suspended underneath the helicopter became unstable. Out of an abundance of caution and to keep the helicopter crew safe, the pilot pulled the emergency release. As the helicopter was not yet at target conditions, the test article was not armed, and as such, the parachute system did not initiate the parachute deployment sequence."

#### U.S. Government Aims For Better Coordination In Space Weather Campaign

Space News <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020032502nasa-26r-3Demail-2Dafb9-26l-3D01c-2Db04-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=4MUKGB04LFj\\_vvWeFMYBJfjAexbAKuJuK6gOerxBvj&s=wtvwbxCOYc97q3ehoBZw5xZGuwqpJRbj1w8GJT78kw&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020032502nasa-26r-3Demail-2Dafb9-26l-3D01c-2Db04-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=4MUKGB04LFj_vvWeFMYBJfjAexbAKuJuK6gOerxBvj&s=wtvwbxCOYc97q3ehoBZw5xZGuwqpJRbj1w8GJT78kw&e=>) (3/25, Werner) "After decades of fighting to be taken seriously, meteorologists say space

weather is beginning to get the attention it deserves. The Trump administration established the Space Weather Operations, Research and Mitigation working group, an interagency panel to coordinate federal work aimed at building resilience to the effects of space weather. In addition, space weather legislation is pending in the U.S. Senate and House of Representatives. ... Meanwhile, NASA is preparing to send people beyond low Earth orbit for the first time in 50 years, exposing astronauts to higher levels of the sun's radiation."

#### Apollo 15 Astronaut Al Worden Has Passed Away

Universe Today <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020032502nasa-26r-3Demail-2Dafb9-26l-3D01d-2Dc8c-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=4MUKGB04LFj\\_vvWeFMYBJfjAexbAKuJuK6gOerxBvjks=3E0rGNb9QZLB4c7ctcOMswkr5tRu6lptNKjvfg5-7c&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020032502nasa-26r-3Demail-2Dafb9-26l-3D01d-2Dc8c-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=4MUKGB04LFj_vvWeFMYBJfjAexbAKuJuK6gOerxBvjks=3E0rGNb9QZLB4c7ctcOMswkr5tRu6lptNKjvfg5-7c&e=>)> (3/24, Williams) "Last Wednesday (March 18th), the world was saddened to hear of the death of Apollo astronaut Alfred "Al" Worden, who passed away after suffering a stroke at an assisted living facility in Texas. A former Colonel in the US Marine Corps who obtained his Bachelor of Science from West Point Academy in 1955 and his Master of Science at the University of Michigan in 1963, Worden went on to join NASA."

#### Moon to Mars

##### Curiosity Rover Shares New Selfie, Climbs Steep Hill On Mars

CNN <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020032502nasa-26r-3Demail-2Dafb9-26l-3D01e-2D152-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=4MUKGB04LFj\\_vvWeFMYBJfjAexbAKuJuK6gOerxBvjks=Z7mrzR11qsfyUSrTMLReCFTEFDNkzANzIsv1Ruq3qs&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020032502nasa-26r-3Demail-2Dafb9-26l-3D01e-2D152-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=4MUKGB04LFj_vvWeFMYBJfjAexbAKuJuK6gOerxBvjks=Z7mrzR11qsfyUSrTMLReCFTEFDNkzANzIsv1Ruq3qs&e=>)> (3/24, Strickland) "NASA's Curiosity rover just conquered a major milestone on Mars – and it took a selfie to celebrate the feat. Curiosity recently finished a record-setting climb by rolling up its steepest hill to date. It's called Greenheugh Pediment and the challenging hill created a 31-degree tilt for the rover. Previously, the only other rover to experience more of a tilt was the Opportunity rover's 32-degree record set in 2016."

##### NASA's Curiosity Rover On Mars Just Climbed Its Steepest Slope Yet (And Snapped A Selfie)

SPACE <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020032502nasa-26r-3Demail-2Dafb9-26l-3D01f-2D7a3-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=4MUKGB04LFj\\_vvWeFMYBJfjAexbAKuJuK6gOerxBvjks=9Wgj5YQ9JUHolfpI0eEcBYgJvX7COEBOjr6aQDmMxaU&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020032502nasa-26r-3Demail-2Dafb9-26l-3D01f-2D7a3-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=4MUKGB04LFj_vvWeFMYBJfjAexbAKuJuK6gOerxBvjks=9Wgj5YQ9JUHolfpI0eEcBYgJvX7COEBOjr6aQDmMxaU&e=>)> (3/24, Wall) "NASA's Mars rover Curiosity just climbed its steepest Red Planet slope to date, after snapping a nice selfie that gives us a better appreciation of the achievement. Curiosity crested a promontory called the Greenheugh Pediment on March 6, showing considerable perseverance in the process. (Perseverance, by the way, is the name of NASA's next Mars rover, a life-hunting robot that's scheduled to launch this July.)"

##### Trump's NASA Budget Request Could Spell Big Changes For Mars Missions

SPACE <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020032502nasa-26r-3Demail-2Dafb9-26l-3D020-2Df27-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020032502nasa-26r-3Demail-2Dafb9-26l-3D020-2Df27-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD)>

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mHkTTiYCEf5ROyus&m=4MUKGB04LFj\_vvWeFMYBJfjAexbAKuJuK6gOerxBvjk&s=buLYu2ssSQfGse7HpZQs1f6xs  
A1M1fOS\_WdEKIJesIY&e=> (3/24, Bartels) "If President Donald Trump's budget request becomes reality, NASA may  
need to shuffle some Red Planet missions, including developing a new Mars Ice Mapper. Trump and his administration  
sent Congress a budget request for the 2021 fiscal year in February. In its fine print, the Trump administration's 2021  
budget request included a few major potential changes to NASA's Mars robotic exploration program. It suggests  
reducing funding for the 2001 Mars Odyssey and Curiosity programs so drastically that these missions would  
essentially end, and it introduces a new Mars Ice Mapper orbital mission for the agency to consider."

#### Firefly Targets Summer Launch, Unveils Plans For Lunar Delivery Service

Ars Technica <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020032502nasa-26r-3Demail-2Dafb9-26l-3D021-2D1bb-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020032502nasa-26r-3Demail-2Dafb9-26l-3D021-2D1bb-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD)>  
8-

mHkTTiYCEf5ROyus&m=4MUKGB04LFj\_vvWeFMYBJfjAexbAKuJuK6gOerxBvjk&s=wOp8Y4rSrGHmZREUiX9x7I1Ri  
-cpivgPHLDHJNHObW4&e=> (3/24, Berger) "NASA's Artemis plan to return humans to the surface of the Moon has  
gotten the lion's share of public attention over the last year, but the space agency's innovative program to deliver  
material to the surface of the Moon has arguably spurred more commercial activity. The Commercial Lunar Services  
Program (or CLPS, which rhymes with chips) has put \$2.8 billion on the table for delivery services. Over the next  
decade, a pool of more than a dozen companies is eligible to bid for contracts to deliver scientific instruments to the  
surface of the Moon. As an added benefit, NASA is helping to stimulate a cislunar economy."

#### Artemis I Spacecraft Environmental Testing Complete

SpaceRef <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020032502nasa-26r-3Demail-2Dafb9-26l-3D022-2D932-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020032502nasa-26r-3Demail-2Dafb9-26l-3D022-2D932-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD)>  
8-mHkTTiYCEf5ROyus&m=4MUKGB04LFj\_vvWeFMYBJfjAexbAKuJuK6gOerxBvjk&s=B0g-  
nxDuDqHXMHivZQaCuJoiXUJFL37Vji7p\_odkvmk&e=> (3/25) "After four months of rigorous testing in the world's  
premier space environments simulation facility at NASA's Plum Brook Station, the Orion spacecraft for the Artemis I  
mission is certified and another step toward being ready for flight. The test campaign, which was completed ahead of  
schedule in mid-March, subjected the spacecraft to the extreme temperatures and electromagnetic conditions it will  
endure during its uncrewed test flight around the Moon and back to ensure it will perform as designed."

#### Solar System and Beyond

##### NASA Asteroid Probe Will Dodge Building-size Boulders To Snatch Sample Of Bennu

SPACE <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020032502nasa-26r-3Demail-2Dafb9-26l-3D023-2D46c-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020032502nasa-26r-3Demail-2Dafb9-26l-3D023-2D46c-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD)>  
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mHkTTiYCEf5ROyus&m=4MUKGB04LFj\_vvWeFMYBJfjAexbAKuJuK6gOerxBvjk&s=FEim9rSWskZLlclPSaRQxO6dtv  
ffGD8wdnpT-q8uvN0&e=> (3/24, Bartels) "Snatching a piece of asteroid Bennu was supposed to be — well, not easy,  
but certainly manageable: scope out the space rock, find some flat spots, swoop down at one, come back home. But  
when NASA's OSIRIS-REx spacecraft arrived at Bennu in December 2018, the scientists and engineers on the  
mission realized that the asteroid was much, much rockier than they had expected. Like, boulders everywhere.  
Boulders as big as buildings. Boulders you do not want your fancy spacecraft to bang into."

##### Asteroid MAPPED: NASA Releases Space Rock Bennu Photo In 'Unprecedented Detail'

Daily Express (UK) <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020032502nasa-26r-3Demail-2Dafb9-26l-3D024-2D706-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=4MUKGB04LFj\\_vvWeFMYBJfjAexbAKuJuK6gOerxBvjk&s=rWrQGkaog9m0zYTzLRuMoBN6GnjCt9-VPZmGSmbDSjg&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020032502nasa-26r-3Demail-2Dafb9-26l-3D024-2D706-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=4MUKGB04LFj_vvWeFMYBJfjAexbAKuJuK6gOerxBvjk&s=rWrQGkaog9m0zYTzLRuMoBN6GnjCt9-VPZmGSmbDSjg&e=>) (3/24, Fish) "This global map of asteroid Bennu's surface is a mosaic of images collected by NASA's OSIRIS-REx spacecraft between March 7 and April 19 last year. The US space agency confirmed 2,155 PolyCam images were stitched together and corrected to produce the resulting asteroid mosaic."

#### News And Articles On Science And Technology

Phys (UK) <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020032502nasa-26r-3Demail-2Dafb9-26l-3D025-2D4d9-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=4MUKGB04LFj\\_vvWeFMYBJfjAexbAKuJuK6gOerxBvjk&s=0egewqO096JfDSPn\\_1E1CMfZTxCS12pORYqWSy0Jw5c&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020032502nasa-26r-3Demail-2Dafb9-26l-3D025-2D4d9-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=4MUKGB04LFj_vvWeFMYBJfjAexbAKuJuK6gOerxBvjk&s=0egewqO096JfDSPn_1E1CMfZTxCS12pORYqWSy0Jw5c&e=>) (3/24, Tate) "Icy gas clouds found in deep space between stars are believed to be the birthplace of planets and solar systems. Scientists want to know what these clouds are made of, but, so far, even the most powerful telescopes have not been able to provide a complete answer. ... But scientists' ability to detect these homonuclear molecules is expected to change with findings from the new James Webb Space Telescope, the world's largest and most technically advanced space observatory with a huge infrared telescope. 'It is an engineering marvel and very good at detecting faint light. We will see things we've never seen before,' said Loeffler."

#### UFO Sighting: NASA Addresses 'Alien Geometrical Craft' Conspiracy Claims

Daily Express (UK) <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020032502nasa-26r-3Demail-2Dafb9-26l-3D026-2D334-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=4MUKGB04LFj\\_vvWeFMYBJfjAexbAKuJuK6gOerxBvjk&s=By9j4RGqaHHt-vpfp6sYcrmQUVCeTz\\_GnPDiyGAI5wE&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020032502nasa-26r-3Demail-2Dafb9-26l-3D026-2D334-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=4MUKGB04LFj_vvWeFMYBJfjAexbAKuJuK6gOerxBvjk&s=By9j4RGqaHHt-vpfp6sYcrmQUVCeTz_GnPDiyGAI5wE&e=>) (3/24, Fish) "UFO debunker UFO of Interest tackled the visual phenomenon in early March, calling it out as a 'recurring image artefact caused by internal reflections of a planet.' NASA confirmed this diagnosis late last week in an update on the STEREO website."

#### Comet ATLAS May Soon Be So Bright That It's Visible From Earth With The Naked Eye

Newsweek <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020032502nasa-26r-3Demail-2Dafb9-26l-3D027-2D6d8-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=4MUKGB04LFj\\_vvWeFMYBJfjAexbAKuJuK6gOerxBvjk&s=tXJVVICxTAoNi0nj45abTepDrl\\_zK3Ljk4-aPD5ISu0&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020032502nasa-26r-3Demail-2Dafb9-26l-3D027-2D6d8-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=4MUKGB04LFj_vvWeFMYBJfjAexbAKuJuK6gOerxBvjk&s=tXJVVICxTAoNi0nj45abTepDrl_zK3Ljk4-aPD5ISu0&e=>) (3/24, Georgiou) "A newly discovered comet known as C/2019 Y4 (ATLAS) is making its way toward our sun and is rapidly increasing in brightness. Astronomers spotted the comet on December 28, 2019, using the ATLAS (Asteroid Terrestrial-impact Last Alert System) robotic astronomical survey system in Hawaii, hence the name. ... NASA data indicates that the comet takes just over 6,000 years to make one full circle around our star. It appears that ATLAS has a very similar orbit to that of the Great Comet of 1844, indicating that it could be a fragment of this object."

#### NASA News: Space Agency Reveals Stunning Image Of Heart Of The Milky Way

Daily Express (UK) <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020032502nasa-26r-3Demail-2Dafb9-26l-3D028-2De9f-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=4MUKGB04LFj\\_vvWeFMYBJfjAexbAKuJuK6gOerxBvjk&s=5xWmQQ8z1VPY4LcBKreKy\\_pWS4X7YuTzVWiLPHZ5Pol&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020032502nasa-26r-3Demail-2Dafb9-26l-3D028-2De9f-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=4MUKGB04LFj_vvWeFMYBJfjAexbAKuJuK6gOerxBvjk&s=5xWmQQ8z1VPY4LcBKreKy_pWS4X7YuTzVWiLPHZ5Pol&e=>) (3/24, Martin) "X-ray images from NASA have shown the middle of our galaxy in stunning detail. The image from the space agency shows a plethora of stunning colours caused by gasses heated up to one million degrees Celsius and a supermassive black hole, Sagittarius A\*, which has a mass of around four million times that of the Sun."

#### How Researchers Produce Sharp Images Of A Black Hole

Universe Today <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020032502nasa-26r-3Demail-2Dafb9-26l-3D029-2D521-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=4MUKGB04LFj\\_vvWeFMYBJfjAexbAKuJuK6gOerxBvjk&s=Cw3dhN1JVLX1Hol\\_xVFM\\_kCEVbKXdCoeAE47EiS75X0&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020032502nasa-26r-3Demail-2Dafb9-26l-3D029-2D521-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=4MUKGB04LFj_vvWeFMYBJfjAexbAKuJuK6gOerxBvjk&s=Cw3dhN1JVLX1Hol_xVFM_kCEVbKXdCoeAE47EiS75X0&e=>) (3/24, Williams) "In April of 2019, the Event Horizon Telescope collaboration history made history when it released the first image of a black hole ever taken. This accomplishment was decades in the making and triggered an international media circus. The picture was the result of a technique known as interferometry, where observatories across the world combined light from their telescopes to create a composite image. ... The team's research was made possible in part by grants issued by NASA, the National Science Foundation (NSF), the Department of Energy (DoE), and multiple scientific and research foundations."

#### Space Tech

##### Starliner Flight Raises Profile Of Space Network

Space News <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020032502nasa-26r-3Demail-2Dafb9-26l-3D02a-2D5ba-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=4MUKGB04LFj\\_vvWeFMYBJfjAexbAKuJuK6gOerxBvjk&s=rZD-0WP5pUQU4gTPIKofEbw4\\_Sc7etufxW4KiFP5HDI&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020032502nasa-26r-3Demail-2Dafb9-26l-3D02a-2D5ba-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=4MUKGB04LFj_vvWeFMYBJfjAexbAKuJuK6gOerxBvjk&s=rZD-0WP5pUQU4gTPIKofEbw4_Sc7etufxW4KiFP5HDI&e=>) (3/24, Werner) "When Boeing's CST-100 Starliner failed to reach the International Space Station in December, initial reports pegged part of the problem to NASA's Tracking and Data Relay Satellite System (TDRSS). Later analysis revealed software issues led to Starliner's abbreviated test flight. Still, the mission raised the profile of TDRSS and underscored the need for robust communications in low Earth orbit. Since the 1970s, NASA has updated its Space Network repeatedly to keep up with demand. Seven satellites and four ground stations provide the bulk of communications for more than 40 missions including the International Space Station, NASA's Hubble Space Telescope and Transiting Exoplanet Satellite Survey."

##### NASA To Hand Off Spacecraft Communications To Industry

Space News <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020032502nasa-26r-3Demail-2Dafb9-26l-3D02b-2Df4e-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=4MUKGB04LFj\\_vvWeFMYBJfjAexbAKuJuK6gOerxBvjk&s=QihvWeHEsAb58aYCSI0NSC7niqYlqlb9mGMJaZL8fNI&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020032502nasa-26r-3Demail-2Dafb9-26l-3D02b-2Df4e-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=4MUKGB04LFj_vvWeFMYBJfjAexbAKuJuK6gOerxBvjk&s=QihvWeHEsAb58aYCSI0NSC7niqYlqlb9mGMJaZL8fNI&e=>) (3/24, Werner) "NASA is preparing to hand off to the private sector much of the work of



communicating with spacecraft in Earth and lunar orbit. 'This is an opportunity to promote U.S. industry, potentially improve the cost of service, and allow NASA to place its energy and focus on advanced capabilities which are not yet available in the commercial market,' Badri Younes, NASA's deputy associate administrator for space communications and navigation, said by email."

#### Bigelow Aerospace Lays Off All Employees: Report

SPACE <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020032502nasa-26r-3Demail-2Dafb9-26l-3D02c-2Daa9-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=4MUKGB04LFj\\_vvWeFMYBJfjAexbAKuJuK6gOerxBvjks=Rmp0xflmfBTh4u5ksQK5SK5GmCuABdYFJ2tEyKvbh3Q&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020032502nasa-26r-3Demail-2Dafb9-26l-3D02c-2Daa9-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=4MUKGB04LFj_vvWeFMYBJfjAexbAKuJuK6gOerxBvjks=Rmp0xflmfBTh4u5ksQK5SK5GmCuABdYFJ2tEyKvbh3Q&e=>) (3/24, Wall) "A company that builds expandable space habitats has laid off its entire workforce, according to media reports. Nevada-based Bigelow Aerospace, which has long aimed to set up outposts in Earth orbit and on the moon, let 20 employees go last week and then laid off all 68 of its remaining workers on Monday (March 23), SpaceNews reported. ... Bigelow Aerospace has been developing NASA-derived expandable-habitat technology for two decades."

#### Various

#### Minecraft Offers Free Educational Content For Students Stuck Home Due To Coronavirus

Washington Post <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020032502nasa-26r-3Demail-2Dafb9-26l-3D02d-2D7af-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=4MUKGB04LFj\\_vvWeFMYBJfjAexbAKuJuK6gOerxBvjks=H4hHHMVW\\_Pt8szwikzcvzhvNGzS8slX2fJn3EpxigWg&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020032502nasa-26r-3Demail-2Dafb9-26l-3D02d-2D7af-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=4MUKGB04LFj_vvWeFMYBJfjAexbAKuJuK6gOerxBvjks=H4hHHMVW_Pt8szwikzcvzhvNGzS8slX2fJn3EpxigWg&e=>) (3/24, Park) "'There's so much about online gaming environments that are similar to how we're having to work today,' Deirdre Quarnstrom, Minecraft general manager told The Washington Post, referring to the work-from-home dynamic some are practicing after the coronavirus pandemic. 'It's been such a sudden disruption now. But because [Minecraft's] a digital game, it can translate fairly easily to these work-from-home environments.' ... A NASA-approved, student-built project that invites students to tour the International Space Station, complete with experiments."

#### Message From The NASA Administrator: March 24 Update On Agency Response To Coronavirus

SpaceRef <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020032502nasa-26r-3Demail-2Dafb9-26l-3D02e-2D6da-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=4MUKGB04LFj\\_vvWeFMYBJfjAexbAKuJuK6gOerxBvjks=tbgH94unSwHiJcxAXI\\_F\\_05XgpitrKfUwJ14\\_ua8J6w&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020032502nasa-26r-3Demail-2Dafb9-26l-3D02e-2D6da-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=4MUKGB04LFj_vvWeFMYBJfjAexbAKuJuK6gOerxBvjks=tbgH94unSwHiJcxAXI_F_05XgpitrKfUwJ14_ua8J6w&e=>) (3/24) "Dear NASA family, Our nation is fighting an invisible enemy – coronavirus (COVID-19). NASA is implementing important measures across the agency to do our part to help slow the transmission of COVID-19 and protect our communities. To continue NASA's inspiring mission, the safety of our workforce is our top priority. We will not ask employees and contractors to perform work if we do not have the highest confidence that it is safe to do so."

#### NASA Confirms Kennedy Space Center Employee Tests Positive For Coronavirus

Fox News <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020032502nasa-26r-3Demail-2Dafb9-26l-3D02e-2D6da-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=4MUKGB04LFj\\_vvWeFMYBJfjAexbAKuJuK6gOerxBvjks=tbgH94unSwHiJcxAXI\\_F\\_05XgpitrKfUwJ14\\_ua8J6w&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020032502nasa-26r-3Demail-2Dafb9-26l-3D02e-2D6da-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=4MUKGB04LFj_vvWeFMYBJfjAexbAKuJuK6gOerxBvjks=tbgH94unSwHiJcxAXI_F_05XgpitrKfUwJ14_ua8J6w&e=>)

3Fm-3D2020032502nasa-26r-3Demail-2Dafb9-26l-3D02f-2D7d6-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=4MUKGB04LFj\_vvWeFMYBJfjAexbAKuJuK6gOerxBvjk&s=ibr\_EeA3aZd6qhsW1JdhDJ9-N0ZO1mC3IP88KlgT5Y&e=> (3/24, Ciaccia) "An employee at NASA's Kennedy Space Center has tested positive for the novel coronavirus, Fox News has confirmed. A NASA spokesman said the agency received notification on March 22 that the person tested positive for COVID-19."

#### Coronavirus Hits Kennedy Space Center, Further Complicating NASA's Plans

BGR <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020032502nasa-26r-3Demail-2Dafb9-26l-3D030-2De68-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=4MUKGB04LFj\\_vvWeFMYBJfjAexbAKuJuK6gOerxBvjk&s=x5pOLkCi44UHv-rQHgJ2cj-lawyJ6R2YG-rZ3QNZbk&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020032502nasa-26r-3Demail-2Dafb9-26l-3D030-2De68-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=4MUKGB04LFj_vvWeFMYBJfjAexbAKuJuK6gOerxBvjk&s=x5pOLkCi44UHv-rQHgJ2cj-lawyJ6R2YG-rZ3QNZbk&e=>) (3/25, Wehner) "Coronavirus confirmed in an employee from NASA's Kennedy Space Center in Florida. NASA is trying to keep its various missions on schedule, recently stating that the Mars 2020 mission is still a go, at least for the moment. The employee who tested positive for COVID-19 hadn't been to the center for at least 10 days prior to testing positive for the virus."

#### Other

#### 8 European Spacecraft Put In Hibernation Amid Virus Lockdown

Associated Press <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020032502nasa-26r-3Demail-2Dafb9-26l-3D031-2Db2e-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=4MUKGB04LFj\\_vvWeFMYBJfjAexbAKuJuK6gOerxBvjk&s=bgBUhUkLuYUkfqvqir3R0R1Yn3V9gJgkIhC5-uU00Hc&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020032502nasa-26r-3Demail-2Dafb9-26l-3D031-2Db2e-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=4MUKGB04LFj_vvWeFMYBJfjAexbAKuJuK6gOerxBvjk&s=bgBUhUkLuYUkfqvqir3R0R1Yn3V9gJgkIhC5-uU00Hc&e=>) (3/24) "The European Space Agency said Tuesday that it is putting eight of its spacecraft into hibernation as it scales down operations during the coronavirus outbreak. The agency said it is further reducing the already limited number of staff working on site at its mission control in Darmstadt, Germany. As a result, the instruments and data collection on some space probes are being temporarily stopped."

#### Europe Stalls Science On 4 Space Missions Due To Coronavirus Pandemic

SPACE <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020032502nasa-26r-3Demail-2Dafb9-26l-3D032-2D36b-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=4MUKGB04LFj\\_vvWeFMYBJfjAexbAKuJuK6gOerxBvjk&s=uV7CaMY5VjLWmpMVx8NwxLKVUD5Mxhfos9dmzYErMrY&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020032502nasa-26r-3Demail-2Dafb9-26l-3D032-2D36b-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=4MUKGB04LFj_vvWeFMYBJfjAexbAKuJuK6gOerxBvjk&s=uV7CaMY5VjLWmpMVx8NwxLKVUD5Mxhfos9dmzYErMrY&e=>) (3/24, Goht) "As concerns surrounding the coronavirus pandemic continue to grow, the European Space Agency (ESA) is scaling back on-site personnel and hitting pause on several scientific missions. This decision, which will affect four out of the ESA's 21 active space missions, will allow the agency to divert resources to support the agency's BepiColombo mission to Mercury. That spacecraft is en route to a mission-critical flyby of Earth on April 10 that will help ensure the probe's trajectory to the solar system's innermost planet. This move by ESA has placed the four selected missions in a safe and temporary standby."

#### European Space Agency Shuttles Mars Spacecraft Science Due To Coronavirus

CNET News <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020032502nasa-26r-3Demail-2Dafb9-26l-3D033-2D84f-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=4MUKGB04LFj\\_vvWeFMYBJfjAexbAKuJuK6gOerxBvjk&s=uV7CaMY5VjLWmpMVx8NwxLKVUD5Mxhfos9dmzYErMrY&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020032502nasa-26r-3Demail-2Dafb9-26l-3D033-2D84f-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=4MUKGB04LFj_vvWeFMYBJfjAexbAKuJuK6gOerxBvjk&s=uV7CaMY5VjLWmpMVx8NwxLKVUD5Mxhfos9dmzYErMrY&e=>)

3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-  
mHkTTiYCEf5ROyus&m=4MUKGB04LFj\_vvWeFMYBJfjAexbAKuJuK6gOerxBvjk&s=luPru4PC2JC7siPW\_x2kdaoqd7wSe11XTuSDfd0AhA&e=> (3/24, Kooser) "It's going to be a little quieter in space than usual. The European Space Agency is temporarily shutting down science instruments for some of its spacecraft as it continues to scale down operations during the COVID-19 pandemic. ESA's European Space Operations Centre (ESOC) in Germany is responsible for managing 21 active spacecraft. The shutdown affects some famous missions, including the ExoMars Trace Gas Orbiter, the long-lived Mars Express orbiter and the newly launched Solar Orbiter."

#### COVID-19 Grips World Space Organizations

NASA Space Flight <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020032502nasa-26r-3Demail-2Dafb9-26l-3D034-2Dd98-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=4MUKGB04LFj\\_vvWeFMYBJfjAexbAKuJuK6gOerxBvjk&s=YDdWj7s1lhVcNPBGJtWa6Uy82MMsGSsknu8e8nm5Nwg&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020032502nasa-26r-3Demail-2Dafb9-26l-3D034-2Dd98-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=4MUKGB04LFj_vvWeFMYBJfjAexbAKuJuK6gOerxBvjk&s=YDdWj7s1lhVcNPBGJtWa6Uy82MMsGSsknu8e8nm5Nwg&e=>) (3/24, Gebhardt) "As world leaders grapple and struggle to control the coronavirus pandemic which leads to the COVID-19 disease, the world's space organizations are also adopting various policies to help combat the spread of the illness and protect their workforces. While business remains largely "as usual" in the United States arena, Russian authorities are taking added measures to protect the upcoming crew of the Soyuz MS-16 mission to the International Space Station, while China begins to resume launch operations and Europe shuts its spaceport indefinitely."

#### Op-Ed | A Space Industry Course Correction Under COVID-19

Space News <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020032502nasa-26r-3Demail-2Dafb9-26l-3D035-2D305-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=4MUKGB04LFj\\_vvWeFMYBJfjAexbAKuJuK6gOerxBvjk&s=vU9vyQPA tjG8m-Paq7kzf4EgGTOFV4QlsqFTTmRurjg&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020032502nasa-26r-3Demail-2Dafb9-26l-3D035-2D305-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=4MUKGB04LFj_vvWeFMYBJfjAexbAKuJuK6gOerxBvjk&s=vU9vyQPA tjG8m-Paq7kzf4EgGTOFV4QlsqFTTmRurjg&e=>) (3/24, Boundi, Rolufs) "The space industry is no exception among the industries impacted by COVID-19. In the midst of event cancellations, mission delays, a crash-course in telecommuting, and assurance that the worst is yet to come, whatever business continuity plans have been put in place are now being put to the test of a lifetime. Few, if any, should expect a stellar grade, and the intransigent inefficiencies and flaws in our current systems will be laid bare."

#### SpaceX Sends Some Workers Home After Employee And One Medical Medic Test Positive For COVID-19

CNBC <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020032502nasa-26r-3Demail-2Dafb9-26l-3D036-2D2cb-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=4MUKGB04LFj\\_vvWeFMYBJfjAexbAKuJuK6gOerxBvjk&s=bpRAXLt9AXSJcXH6K3L42ANKSmF-FRU3sXfrf-FlwZ4&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020032502nasa-26r-3Demail-2Dafb9-26l-3D036-2D2cb-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=4MUKGB04LFj_vvWeFMYBJfjAexbAKuJuK6gOerxBvjk&s=bpRAXLt9AXSJcXH6K3L42ANKSmF-FRU3sXfrf-FlwZ4&e=>) (3/24, Kolodny, Farr) "At least one employee and one outside health care provider at SpaceX's headquarters in Hawthorne, California, have tested positive for the COVID-19 coronavirus, sending some employees into quarantine, according to an internal memo seen by CNBC. At the facility, the company has taken other steps to try and protect nervous workers, including handing out protective gear and making hand sanitizer in-house, according to several current employees and family members who spoke to CNBC."

#### Coronavirus Pandemic Forces SpaceX Launch Delay

BGR <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020032502nasa-26r-3Demail-2Dafb9-26l-3D037-2Dbfa-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=4MUKGB04LFj\\_vvWeFMYBJfjAexbAKuJuK6gOerxBvj&s=peqs5FPnuTgs3DH9pDnqkC6olRJzeUFVp2Rg88-bQ5Q&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020032502nasa-26r-3Demail-2Dafb9-26l-3D037-2Dbfa-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=4MUKGB04LFj_vvWeFMYBJfjAexbAKuJuK6gOerxBvj&s=peqs5FPnuTgs3DH9pDnqkC6olRJzeUFVp2Rg88-bQ5Q&e=>) (3/24, Wehner) "SpaceX, which has proven resilient in the face of the coronavirus pandemic, finally felt the impact after its planned launch of a SAOCOM satellite was delayed. The delay comes as Vandenberg Air Force Base is locking down and limiting operations, including rocket launches."

#### Two Workers At SpaceX Test Positive For The Coronavirus

Los Angeles Times <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020032502nasa-26r-3Demail-2Dafb9-26l-3D038-2Dfca-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=4MUKGB04LFj\\_vvWeFMYBJfjAexbAKuJuK6gOerxBvj&s=HZxI9ktVzoZ\\_DhwkmkjwQ8fSoyVLzNKwki-IH6rySwl&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020032502nasa-26r-3Demail-2Dafb9-26l-3D038-2Dfca-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=4MUKGB04LFj_vvWeFMYBJfjAexbAKuJuK6gOerxBvj&s=HZxI9ktVzoZ_DhwkmkjwQ8fSoyVLzNKwki-IH6rySwl&e=>) (3/24, Masunaga) "Two workers at SpaceX's Hawthorne rocket factory have tested positive for the coronavirus, according to an industry official familiar with the matter. Because of the positive test results, the company sent some of its workers home to quarantine and watch for symptoms of the virus, according to CNBC. SpaceX did not respond to a request for comment. The Telegraph first reported the news."

#### Elon Musk's SpaceX: Now 1 Million Starlink User Terminals OKed For US Internet Service

ZDNet <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020032502nasa-26r-3Demail-2Dafb9-26l-3D039-2D35b-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=4MUKGB04LFj\\_vvWeFMYBJfjAexbAKuJuK6gOerxBvj&s=JAAEdIVOXx6cK1fEAizGgTrRpvXDF4tOrp9nJhr26GU&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020032502nasa-26r-3Demail-2Dafb9-26l-3D039-2D35b-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=4MUKGB04LFj_vvWeFMYBJfjAexbAKuJuK6gOerxBvj&s=JAAEdIVOXx6cK1fEAizGgTrRpvXDF4tOrp9nJhr26GU&e=>) (3/24, Tung) "The Federal Communications Commission has approved SpaceX's application to roll out a million user terminals in the US to connect with its growing Starlink satellite broadband network. The approval gives SpaceX a 15-year 'blanket license for the operation of up to 1,000,000 fixed earth stations that will communicate with its non-geostationary orbit satellite system.'"

#### SpaceX Reportedly Quarantines Employees After Positive Coronavirus Tests

CNET News <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020032502nasa-26r-3Demail-2Dafb9-26l-3D03a-2D01d-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=4MUKGB04LFj\\_vvWeFMYBJfjAexbAKuJuK6gOerxBvj&s=RiYDqVaU2mtX1XZ7me56f3GCXxgOIL6LtdUd4PTF0F8&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020032502nasa-26r-3Demail-2Dafb9-26l-3D03a-2D01d-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=4MUKGB04LFj_vvWeFMYBJfjAexbAKuJuK6gOerxBvj&s=RiYDqVaU2mtX1XZ7me56f3GCXxgOIL6LtdUd4PTF0F8&e=>) (3/24, Musil) "SpaceX has placed at least 12 workers in quarantine after one worker and a medic at the company's Southern California facility tested positive for coronavirus, The Telegraph reported Tuesday. Employees at the Hawthorne, California, plant were notified of the infections on Monday, The Telegraph reported, citing an email. One employee was diagnosed after traveling abroad, the newspaper reported."

#### Travel Bans Delay SpaceX Launch For Argentina

Aviation Week <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020032502nasa-26r-3Demail-2Dafb9-26l-3D03b-2Df2b-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=4MUKGB04LFj\\_vvWeFMYBJfjAexbAKuJuK6gOerxBvj&s=peqs5FPnuTgs3DH9pDnqkC6olRJzeUFVp2Rg88-bQ5Q&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020032502nasa-26r-3Demail-2Dafb9-26l-3D03b-2Df2b-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=4MUKGB04LFj_vvWeFMYBJfjAexbAKuJuK6gOerxBvj&s=peqs5FPnuTgs3DH9pDnqkC6olRJzeUFVp2Rg88-bQ5Q&e=>)

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PHfBDQpmhjBpj51kl&e=> (3/24) "The launch of Argentina's Earth-observation Saocom 1B satellite, scheduled for late  
March aboard a SpaceX Falcon 9 rocket, has been postponed due to travel restrictions imposed to combat COVID-  
19."

#### Chinese Astronomers Detect Gamma-Ray Emission From Two Star-forming Galaxies

Phys (UK) <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020032502nasa-26r-3Demail-2Dafb9-26l-3D03c-2Dbaa-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=4MUKGB04LFj\\_vvWeFMYBjAjAexbAKuJuK6gOerxBvjks=nPF9iuBWnnfW3KRskhmSVewwyA\\_R8nFId6QJfLW7i4o&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020032502nasa-26r-3Demail-2Dafb9-26l-3D03c-2Dbaa-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=4MUKGB04LFj_vvWeFMYBjAjAexbAKuJuK6gOerxBvjks=nPF9iuBWnnfW3KRskhmSVewwyA_R8nFId6QJfLW7i4o&e=>) (3/24, Nowakowski) "Astronomers from Nanjing University in China have detected gamma ray emission from two star-forming galaxies designated M33 and Arp 299. The finding, which is detailed in a paper published March 17 on arXiv.org, could be helpful in improving knowledge about the origin of very high-energy emission in galaxies."

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## U.S. Space Force Finally Gets An Astronaut

Washington Times <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020110402nasa-26r-3Demail-2D78fa-26l-3D003-2D5a0-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=sdfbQ-\\_jWIQ4jq0vu0-aPqLDjj\\_h7tEfY3McxLMf158&s=4u11fGMKedWGeYGC8PPT\\_w7XGTzEcvrIP7jnT2Oss2A&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020110402nasa-26r-3Demail-2D78fa-26l-3D003-2D5a0-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=sdfbQ-_jWIQ4jq0vu0-aPqLDjj_h7tEfY3McxLMf158&s=4u11fGMKedWGeYGC8PPT_w7XGTzEcvrIP7jnT2Oss2A&e=>) (11/3, Glenn) "Air Force Col. Michael 'Hopper' Hopkins will be in an appropriate location later this month when he transfers over to the recently created U.S. Space Force. He'll be in space. A veteran NASA astronaut who has already logged more than 166 days in space, Col. Hopkins will switch his name tag from 'Air Force' to 'Space Force' once he is aboard the International Space Station, officials with U.S. Space Force confirmed."

## What's Next After The International Space Station? Plans Afoot For More Off-Earth Outposts.

SPACE <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020110402nasa-26r-3Demail-2D78fa-26l-3D004-2D3c8-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=sdfbQ-\\_jWIQ4jq0vu0-aPqLDjj\\_h7tEfY3McxLMf158&s=Fq\\_eNjFpyhjLqiGL\\_0m\\_QDSXtEYeq4HaRStpfN6lYo&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020110402nasa-26r-3Demail-2D78fa-26l-3D004-2D3c8-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=sdfbQ-_jWIQ4jq0vu0-aPqLDjj_h7tEfY3McxLMf158&s=Fq_eNjFpyhjLqiGL_0m_QDSXtEYeq4HaRStpfN6lYo&e=>) (11/3, Wall) "The International Space Station (ISS) won't be the only off-Earth outpost for much longer, if all goes according to plan. Yesterday (Nov. 2), the huge orbiting laboratory celebrated 20 years of continuous human occupation, a big milestone in humanity's push to extend its footprint into the final frontier."

## NASA Explains How Astronauts Vote From Space, Shows Off ISS Voting Booth

SlashGear <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020110402nasa-26r-3Demail-2D78fa-26l-3D005-2Db7f-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=sdfbQ-\\_jWIQ4jq0vu0-aPqLDjj\\_h7tEfY3McxLMf158&s=0jVaxz\\_k7vaq3XZcbSsQDURQTsrFY\\_2e05j-KwaT\\_xo&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020110402nasa-26r-3Demail-2D78fa-26l-3D005-2Db7f-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=sdfbQ-_jWIQ4jq0vu0-aPqLDjj_h7tEfY3McxLMf158&s=0jVaxz_k7vaq3XZcbSsQDURQTsrFY_2e05j-KwaT_xo&e=>) (11/3, Roston) "NASA has detailed how its astronauts vote in the US presidential election from space, showing off a picture of the 'voting booth' built on the International Space Station. The tricky part, of course, is securely transmitting the votes from the ISS to NASA, but the space agency has a special system in place that makes this possible."

## NASA Contacts Voyager 2 After Months Of Silence

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Flight

No content.

Earth

No content.

Humans in Space

U.S. Space Force Finally Gets An Astronaut

Washington Times <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020110402nasa-26r-3Demail-2D78fa-26l-3D007-2D07e-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=sdfbQ-\\_jWlQ4jq0vu0-aPqLDjj\\_h7tEfY3McxLMfI58&s=ys9zrMqIW-GCn\\_2XFYhqbIrc8yVSTzRkAAbd1U9oHK4&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020110402nasa-26r-3Demail-2D78fa-26l-3D007-2D07e-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=sdfbQ-_jWlQ4jq0vu0-aPqLDjj_h7tEfY3McxLMfI58&s=ys9zrMqIW-GCn_2XFYhqbIrc8yVSTzRkAAbd1U9oHK4&e=>) (11/3, Glenn) “Air Force Col. Michael ‘Hopper’ Hopkins will be in an appropriate location later this month when he transfers over to the recently created U.S. Space Force. He’ll be in space. A veteran NASA astronaut who has already logged more than 166 days in space, Col. Hopkins will switch his name tag from ‘Air Force’ to ‘Space Force’ once he is aboard the International Space Station, officials with U.S. Space Force confirmed.”

What’s Next After The International Space Station? Plans Afoot For More Off-Earth Outposts.

SPACE <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020110402nasa-26r-3Demail-2D78fa-26l-3D008-2D661-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=sdfbQ-\\_jWlQ4jq0vu0-aPqLDjj\\_h7tEfY3McxLMfI58&s=pHmJcR6lvA0DJXEARfGRoUg0Qp3lzTRz5lGQra\\_IYyM&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020110402nasa-26r-3Demail-2D78fa-26l-3D008-2D661-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=sdfbQ-_jWlQ4jq0vu0-aPqLDjj_h7tEfY3McxLMfI58&s=pHmJcR6lvA0DJXEARfGRoUg0Qp3lzTRz5lGQra_IYyM&e=>) (11/3, Wall) “The International Space Station (ISS) won’t be the only off-Earth outpost for much longer, if all goes according to plan. Yesterday (Nov. 2), the huge orbiting laboratory celebrated 20 years of continuous human occupation, a big milestone in humanity’s push to extend its footprint into the final frontier.”

The International Space Station Can’t Last Forever. Here’s How It Will Eventually Die By Fire.

LiveScience <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020110402nasa-26r-3Demail-2D78fa-26l-3D009-2D7a9-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=sdfbQ-\\_jWlQ4jq0vu0-aPqLDjj\\_h7tEfY3McxLMfI58&s=xZIYvwTi-ALBGvsZNjcJgsKjCFJfa1SnLhqsrl8xszg&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020110402nasa-26r-3Demail-2D78fa-26l-3D009-2D7a9-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=sdfbQ-_jWlQ4jq0vu0-aPqLDjj_h7tEfY3McxLMfI58&s=xZIYvwTi-ALBGvsZNjcJgsKjCFJfa1SnLhqsrl8xszg&e=>) (11/3, Bartels) “What goes up must come down — including, sadly enough, the International Space Station. For precisely 20 years now, the massive orbiting laboratory has constantly been home to humans, the lucky handful of Earthlings who at any given time venture into the topsy-turvy world of microgravity. But like the rest of us, the International Space Station is aging. And it can’t stay in orbit on its own indefinitely — it needs a regular boost or fuel injection from visiting spacecraft. If those boosts stop or something else goes wrong, sooner or later, the lab will fall.”

Humans Have Lived On The ISS For 20 Years—Here Are The Coolest Discoveries We’ve Made

Popular Science <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020110402nasa-26r-3Demail-2D78fa-26l-3D00a-2D542-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=sdfbQ-\\_jWlQ4jq0vu0-](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020110402nasa-26r-3Demail-2D78fa-26l-3D00a-2D542-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=sdfbQ-_jWlQ4jq0vu0-)

aPqLDjj\_h7tEfY3McxLMf158&s=kq8f1oqP1P0CM4qVuARD8nfwQ7jyRn7CO46STPpAr58&e=> (11/3, Rubiano) “Twenty years ago, the Earth stopped being the only place in the universe that humans can call ‘home.’ On November 2nd of the year 2000, three men became the first humans to live outside our planet. For 141 days, American William Shepherd and Russians Sergei Krikalev and Yuri Gidzenko orbited the Earth on the International Space Station (ISS), launched two years before. Over the last two decades, the ISS has housed 241 people from 19 countries.”

#### Snoopy Celebrates 20 Years Of Humans On Space Station On New NASA Posters

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aPqLDjj\_h7tEfY3McxLMf158&s=runqj1o5RnKZrvQNTuLKvK0Yu1X4Fo55\_qLXnt7oGuM&e=> (11/3, Pearlman) “Just a week before the first crew took up residency on the International Space Station 20 years ago, NASA’s 100th space shuttle mission landed back on Earth. To celebrate that milestone, the space agency’s employee morale organization distributed a special Snoopy doll, clad in a spacesuit, that recognized the ‘Peanuts pooch ... as a symbol of excellence for the human space flight program.’”

#### Crew-1 Launch Remains On Schedule Despite Sentinel-6 Slip

Space News <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020110402nasa-26r-3Demail-2D78fa-26l-3D00c-2D361-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=sdfbQ-\\_jWIQ4jq0vu0-aPqLDjj\\_h7tEfY3McxLMf158&s=LEHHmqDHE9gN9KqPp-Tlqj4OfZKo90yCa8lzcQv00Ac&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020110402nasa-26r-3Demail-2D78fa-26l-3D00c-2D361-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=sdfbQ-_jWIQ4jq0vu0-aPqLDjj_h7tEfY3McxLMf158&s=LEHHmqDHE9gN9KqPp-Tlqj4OfZKo90yCa8lzcQv00Ac&e=>)> (11/3, Foust) “NASA is delaying the launch of an ocean science satellite on one Falcon 9 rocket, but says that delay will not affect another Falcon 9 launch of a commercial crew mission. The agency announced Nov. 3 it was delaying the launch of the Sentinel-6 Michael Freilich satellite on a Falcon 9 from Vandenberg Air Force Base in California from Nov. 10 to Nov. 21. The reason for the delay, the agency said, was to give SpaceX time to replace two engines in the rocket’s first stage.”

#### SpaceX’s Crew-1 Astronaut Mission For NASA: Live Updates

SPACE <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020110402nasa-26r-3Demail-2D78fa-26l-3D00d-2Da84-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=sdfbQ-\\_jWIQ4jq0vu0-](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020110402nasa-26r-3Demail-2D78fa-26l-3D00d-2Da84-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=sdfbQ-_jWIQ4jq0vu0-)>  
aPqLDjj\_h7tEfY3McxLMf158&s=PHSevJyyK2BdV0KIPx7HSjR82jz88Kqi-ZmIFEAxul0&e=> (11/3) “SpaceX’s Crew-1 mission to the International Space Station is now scheduled to launch on Saturday, Nov. 14, at 7:49 p.m. EST (0049 GMT on Nov. 15), NASA announced Monday (Oct. 26). Originally scheduled to launch Aug. 30, Crew-1 has faced numerous delays in getting off the ground. NASA first pushed the mission to late September, then to Oct. 23, then to Oct. 31 and finally to early to mid-November, citing logistical and technical issues. The newly announced target date firms up that latter timeline.”

#### NASA Explains How Astronauts Vote From Space, Shows Off ISS Voting Booth

SlashGear <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020110402nasa-26r-3Demail-2D78fa-26l-3D00e-2D627-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=sdfbQ-\\_jWIQ4jq0vu0-aPqLDjj\\_h7tEfY3McxLMf158&s=kIGX63SzoOX18N-NyASecR17DSnl0O9JdrjFSkelzgo&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020110402nasa-26r-3Demail-2D78fa-26l-3D00e-2D627-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=sdfbQ-_jWIQ4jq0vu0-aPqLDjj_h7tEfY3McxLMf158&s=kIGX63SzoOX18N-NyASecR17DSnl0O9JdrjFSkelzgo&e=>)> (11/3, Roston) “NASA has detailed how its astronauts vote in the US presidential election from space, showing off a picture of the ‘voting booth’ built on the International Space Station. The

tricky part, of course, is securely transmitting the votes from the ISS to NASA, but the space agency has a special system in place that makes this possible.”

#### How Astronauts Vote From Space: The Only American In Orbit Now Explains

SPACE <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020110402nasa-26r-3Demail-2D78fa-26l-3D00f-2Da2e-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=sdfbQ-\\_jWlQ4jq0vu0-aPqLDjj\\_h7tEfY3McxLMfI58&s=CT8QGoPmcElvYco4VKLbvRjL2HXJaefDQZLGrshNUkM&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020110402nasa-26r-3Demail-2D78fa-26l-3D00f-2Da2e-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=sdfbQ-_jWlQ4jq0vu0-aPqLDjj_h7tEfY3McxLMfI58&s=CT8QGoPmcElvYco4VKLbvRjL2HXJaefDQZLGrshNUkM&e=>) (11/3, Brabaw) “Due to COVID-19, voting in the 2020 election is different for many Americans than in years past, with a greater number of absentee ballots and early voters than ever before. But one American can boast a truly unique experience in casting her ballot. Astronaut Kate Rubins, who has been on the International Space Station since Oct. 14, voted from space a week after she entered orbit. In a NASA Q&A about the 20th anniversary of humans living on the International Space Station, Rubins described her voting process.”

#### November: What's New In Space Exploration This Month?

Discovery Channel <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020110402nasa-26r-3Demail-2D78fa-26l-3D010-2D58e-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=sdfbQ-\\_jWlQ4jq0vu0-aPqLDjj\\_h7tEfY3McxLMfI58&s=mTiWzMiFm6UcFyl\\_rNQI9SALXFZ-FPr1YztLZCf9ncs&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020110402nasa-26r-3Demail-2D78fa-26l-3D010-2D58e-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=sdfbQ-_jWlQ4jq0vu0-aPqLDjj_h7tEfY3McxLMfI58&s=mTiWzMiFm6UcFyl_rNQI9SALXFZ-FPr1YztLZCf9ncs&e=>) (11/3, Rosenfield) “1. SpaceX will launch another satellite for the U.S. Space Force. On November 5, a SpaceX Falcon 9 rocket is set to launch a fourth third-generation navigation satellite known as GPS 3 SV04 for a Global Positioning System in connection with Space Force. It will blast off from the Cape Canaveral Air Force Station in Florida. 2. NASA’s SpaceX Crew-1 mission scheduled to launch this month”

#### Moon to Mars

##### NASA’s Megarocket Mobile Launcher Crawls To The Launch Pad For Moon Mission Prep

SPACE <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020110402nasa-26r-3Demail-2D78fa-26l-3D011-2De40-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=sdfbQ-\\_jWlQ4jq0vu0-aPqLDjj\\_h7tEfY3McxLMfI58&s=vmQpWsE5gJ1Bb3Vc1ICxSD9\\_0Xm5wNUN65EgLfEq6pM&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020110402nasa-26r-3Demail-2D78fa-26l-3D011-2De40-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=sdfbQ-_jWlQ4jq0vu0-aPqLDjj_h7tEfY3McxLMfI58&s=vmQpWsE5gJ1Bb3Vc1ICxSD9_0Xm5wNUN65EgLfEq6pM&e=>) (11/3, Thompson) “NASA’s massive Mobile Launch Platform (MLP) was on the move last month. On Oct. 20, the massive platform rolled out of the Vehicle Assembly Building here at Kennedy Space Center, on top of NASA’s crawler transporter. The 380-foot-tall (116 meters) platform will eventually carry the agency’s massive Space Launch System (SLS) rocket and Orion spacecraft as part of the upcoming Artemis 1 lunar mission, which is set to blast off sometime late next year.”

#### Mars Plays Shepherd To Our Moon’s Long-Lost Twin, Scientists Find

Phys (UK) <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020110402nasa-26r-3Demail-2D78fa-26l-3D012-2D8d0-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=sdfbQ-\\_jWlQ4jq0vu0-aPqLDjj\\_h7tEfY3McxLMfI58&s=hs1-gRBjMwGR0uROZVcmIG2Pk73z4Zf9ZhwhfVksn0-4&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020110402nasa-26r-3Demail-2D78fa-26l-3D012-2D8d0-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=sdfbQ-_jWlQ4jq0vu0-aPqLDjj_h7tEfY3McxLMfI58&s=hs1-gRBjMwGR0uROZVcmIG2Pk73z4Zf9ZhwhfVksn0-4&e=>) (11/3, Christou) “in the journal Icarus, also has implications for finding such primordial objects associated with our own planet. ... An Earth Trojan, named 2010 TK7, was found a decade ago by NASA’s WISE space telescope, but computer modeling showed it is a temporary visitor from the belt of

asteroids between Mars and Jupiter rather than a relic planetesimal from the Earth's formation.”

#### Astronauts And Explorers On Mars Could Eat Lab-Grown Steaks

Universe Today <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020110402nasa-26r-3Demail-2D78fa-26l-3D013-2Db73-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=sdfbQ-\\_jWlQ4jq0vu0-aPqLDjj\\_h7tEfY3McxLMf158&s=PtRjNa-OmjclxulwYdM9gEgShyRIkvmDWhl3xfexPII&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020110402nasa-26r-3Demail-2D78fa-26l-3D013-2Db73-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=sdfbQ-_jWlQ4jq0vu0-aPqLDjj_h7tEfY3McxLMf158&s=PtRjNa-OmjclxulwYdM9gEgShyRIkvmDWhl3xfexPII&e=>) (11/3, Tomaswick) “Growing meat without the need to grow a whole animal has been the dream of agriculturalists and foodies everywhere for decades. More and more companies are jumping on the bandwagon to try to truly recreate the experience of eating meat without the downsides so often associated with its creation. One of those companies is Aleph Farms, based in Israel, which just announced their newest program – Aleph Zero, an effort to grow meat in industrial quantities in space.”

#### NASA's Mars 2020 Perseverance Rover Mission: Live Updates

SPACE <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020110402nasa-26r-3Demail-2D78fa-26l-3D014-2D377-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=sdfbQ-\\_jWlQ4jq0vu0-aPqLDjj\\_h7tEfY3McxLMf158&s=861dOqOCG\\_Lt1KaKiJl0GMBwIYcJ80JDnqBXtRNWzM&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020110402nasa-26r-3Demail-2D78fa-26l-3D014-2D377-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=sdfbQ-_jWlQ4jq0vu0-aPqLDjj_h7tEfY3McxLMf158&s=861dOqOCG_Lt1KaKiJl0GMBwIYcJ80JDnqBXtRNWzM&e=>) (11/3, Gohd) “NASA's Mars rover Perseverance has passed the halfway mark on its road to the Red Planet. The rover, which launched July 30, passed the midpoint of its Martian voyage on Oct. 27 after traveling about 146 million miles (235 million kilometers). Perseverance is scheduled to reach Mars on Feb. 18, where it will land on in a region called Jezero Crater.”

#### Solar System and Beyond

##### NASA Contacts Voyager 2 After Months Of Silence

SlashGear <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020110402nasa-26r-3Demail-2D78fa-26l-3D015-2D127-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=sdfbQ-\\_jWlQ4jq0vu0-aPqLDjj\\_h7tEfY3McxLMf158&s=UBOdNYXuUpfIZ\\_sQ8hx3wdeRZDXl4Qx4ZofBcRxxkFY&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020110402nasa-26r-3Demail-2D78fa-26l-3D015-2D127-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=sdfbQ-_jWlQ4jq0vu0-aPqLDjj_h7tEfY3McxLMf158&s=UBOdNYXuUpfIZ_sQ8hx3wdeRZDXl4Qx4ZofBcRxxkFY&e=>) (11/3, McGlaun) “On October 29, NASA confirmed that mission operators could send a series of commands to the Voyager 2 spacecraft that has been exploring space for 43 years. Voyager 2 had been off-line since March, while the only radio antennae capable of sending commands to the spacecraft was down while getting upgrades. The antenna is located in Canterbury, Australia, and is known as Deep Space Station 43.”

##### After An Antenna Repair On Earth, NASA Is Now Able To Command Voyager 2 Again

CNN <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020110402nasa-26r-3Demail-2D78fa-26l-3D016-2D377-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=sdfbQ-\\_jWlQ4jq0vu0-aPqLDjj\\_h7tEfY3McxLMf158&s=aizoFsQ61KSuyeRzYTS\\_NZR-vChwdQ9uOXst4koAWdk&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020110402nasa-26r-3Demail-2D78fa-26l-3D016-2D377-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=sdfbQ-_jWlQ4jq0vu0-aPqLDjj_h7tEfY3McxLMf158&s=aizoFsQ61KSuyeRzYTS_NZR-vChwdQ9uOXst4koAWdk&e=>) (11/3, Prior) “Election Day may have us tied up in anxious knots today. But we can also take solace in the fact that nearly 12 billion miles away, one of humanity's greatest achievements is twinkling back at us, and our understanding of the mysteries of the universe continues to unfold. After a seven-month hiatus without being able to command Voyager 2, NASA is now able to communicate new directions and procedures to the craft, the

agency announced.”

### NASA Sends First Commands To Voyager 2 In Eight Months

New Atlas <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020110402nasa-26r-3Demail-2D78fa-26l-3D017-2D741-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=sdfbQ-\\_jWIQ4jq0vu0-aPqLDjj\\_h7tEfY3McxLMfI58&s=x4\\_if1-GxQ1ywATLXZrBp1jICF\\_-1VRHIWx0Y7BVwxE&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020110402nasa-26r-3Demail-2D78fa-26l-3D017-2D741-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=sdfbQ-_jWIQ4jq0vu0-aPqLDjj_h7tEfY3McxLMfI58&s=x4_if1-GxQ1ywATLXZrBp1jICF_-1VRHIWx0Y7BVwxE&e=>) (11/4, Szondy) “NASA is back in contact with Voyager 2 after almost eight months of silence. Radio communication has not been possible because the Deep Space Station 43 (DSS43) in Australia is undergoing an upgrade, but on October 29 it sent a signal to Voyager 2, which successfully carried out the commands and returned a confirmation signal.”

### NASA Successfully Contacts Voyager 2, Billions Miles Away From Earth

Tech Times <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020110402nasa-26r-3Demail-2D78fa-26l-3D018-2Df2c-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=sdfbQ-\\_jWIQ4jq0vu0-aPqLDjj\\_h7tEfY3McxLMfI58&s=41jrgm4\\_l7ys8ns5vqeaURjZYvLG6\\_laiJgZyB3Fj\\_I&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020110402nasa-26r-3Demail-2D78fa-26l-3D018-2Df2c-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=sdfbQ-_jWIQ4jq0vu0-aPqLDjj_h7tEfY3McxLMfI58&s=41jrgm4_l7ys8ns5vqeaURjZYvLG6_laiJgZyB3Fj_I&e=>) (11/3) “The National Aeronautics and Space Administration (NASA) was able to send a message to its Voyager 2, which is 11.6 billion miles away from Earth. NASA achieved this fantastic feat using the new hardware of Deep Space Station 43. According to Sci Tech Daily, the space agency’s mission operators sent a series of commands to Voyager 2 spacecraft on Oct. 29. It is the first one since mid-March.”

### After 7 Months, NASA Reminds Voyager 2 Probe That Earth Is Still Here

Gizmodo <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020110402nasa-26r-3Demail-2D78fa-26l-3D019-2Dbc5-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=sdfbQ-\\_jWIQ4jq0vu0-aPqLDjj\\_h7tEfY3McxLMfI58&s=lx8rrlSjw-wW-PXzhhRqg5M6tYPyYgy1o5kCRPvRDq0&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020110402nasa-26r-3Demail-2D78fa-26l-3D019-2Dbc5-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=sdfbQ-_jWIQ4jq0vu0-aPqLDjj_h7tEfY3McxLMfI58&s=lx8rrlSjw-wW-PXzhhRqg5M6tYPyYgy1o5kCRPvRDq0&e=>) (11/3, Dvorsky) “Mission operators have been unable to send radio transmissions to the Voyager 2 space probe since mid-March, but a recent test of newly installed hardware is a good sign that upgrades to NASA’s Deep Space Network are proceeding as planned. NASA sent a command to Voyager 2 on October 29, something it hadn’t been able to do for seven months, according to an agency statement. Mission operators did so using Deep Space Station 43 (DSS43)—the only radio antenna capable of communicating with the spacecraft. Launched in 1977, Voyager 2 is currently 11,677 million miles (18,792 million km) from Earth. It and its partner Voyager 1 are the most distant human-made objects in the universe.”

### NASA Calls Voyager 2, And The Spacecraft Answers From Interstellar Space

Ars Technica <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020110402nasa-26r-3Demail-2D78fa-26l-3D01a-2D4d4-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=sdfbQ-\\_jWIQ4jq0vu0-aPqLDjj\\_h7tEfY3McxLMfI58&s=nbFXqxOqUzWqkWyxNNvnG\\_Q60b9Qw-9pzMBwVYjJ2tQ&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020110402nasa-26r-3Demail-2D78fa-26l-3D01a-2D4d4-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=sdfbQ-_jWIQ4jq0vu0-aPqLDjj_h7tEfY3McxLMfI58&s=nbFXqxOqUzWqkWyxNNvnG_Q60b9Qw-9pzMBwVYjJ2tQ&e=>) (11/3, Berger) “The Voyager 2 spacecraft has been gone from Earth for more than 43 years, and it now lies 125 astronomical units from our planet. That is 125 times the distance between the Earth and Sun. Understandably, this distance makes it rather difficult for NASA to communicate with its far-flung spacecraft—there is a time delay of more than 17 hours. However, with Voyager 2, there is another complication in talking to the spacecraft.”

## NASA Contacts Voyager 2 Probe For The First Time Since March

Engadget <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020110402nasa-26r-3Demail-2D78fa-26l-3D01b-2D0ee-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=sdfbQ-\\_jWIQ4jq0vu0-aPqLDjj\\_h7tEfY3McxLMfI58&s=GqU3Xwfqe\\_3rf6bxWrQm-9PLBWc8es0C3Kyrb9l0lGM&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020110402nasa-26r-3Demail-2D78fa-26l-3D01b-2D0ee-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=sdfbQ-_jWIQ4jq0vu0-aPqLDjj_h7tEfY3McxLMfI58&s=GqU3Xwfqe_3rf6bxWrQm-9PLBWc8es0C3Kyrb9l0lGM&e=>) (11/3, Fingas) “NASA just made contact with Voyager 2 for the first time since March thanks to a key technology upgrade. The agency has revealed that it sent commands to the probe on October 29th using the recently upgraded Deep Space Station 43 dish in Canberra, Australia. The instructions were part of a test for new hardware, including a radio transmitter that hadn’t been replaced in 47 years — before Voyager 2 even launched.”

## Touch And Go: NASA’s Delicate Mission To Sample Asteroid Bennu : Short Wave

NPR <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020110402nasa-26r-3Demail-2D78fa-26l-3D01c-2Ddeb6-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=sdfbQ-\\_jWIQ4jq0vu0-aPqLDjj\\_h7tEfY3McxLMfI58&s=xU7yvu-ERBAbSDQ3aTjPLQvMdQKRZ01Y29XF\\_bTe9SU&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020110402nasa-26r-3Demail-2D78fa-26l-3D01c-2Ddeb6-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=sdfbQ-_jWIQ4jq0vu0-aPqLDjj_h7tEfY3McxLMfI58&s=xU7yvu-ERBAbSDQ3aTjPLQvMdQKRZ01Y29XF_bTe9SU&e=>) (11/3) “MADDIE SOFIA, HOST: You’re listening to SHORT WAVE from NPR. ... SOFIA: Fine, fine, fine. OK that’s true. There is no escape. But today we are talking asteroids, specifically an asteroid named Bennu. It’s more than 200 million miles away. It orbits the sun in about 1.2 Earth years. NASA sent a spacecraft to the asteroid in 2016, right?”

## NASA Flaunts Upclose Images Of Asteroid Bennu But Baffled Over Dark ‘Depression’

Tech Times <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020110402nasa-26r-3Demail-2D78fa-26l-3D01d-2D7e0-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=sdfbQ-\\_jWIQ4jq0vu0-aPqLDjj\\_h7tEfY3McxLMfI58&s=kmwnGGzj97kF5I3P3cjNZfS3JldFYsRy0H4paUMxB-Q&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020110402nasa-26r-3Demail-2D78fa-26l-3D01d-2D7e0-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=sdfbQ-_jWIQ4jq0vu0-aPqLDjj_h7tEfY3McxLMfI58&s=kmwnGGzj97kF5I3P3cjNZfS3JldFYsRy0H4paUMxB-Q&e=>) (11/3, Robles) “NASA has released images taken by navigation camera’s (NavCam 2) field of view on October 20 when OSIRIS-Rex touched and took samples from the surface of asteroid Bennu, as reported by SciTech Daily. During NASA’s sample collection event of the OSIRIS-REx mission, the spacecraft was brought from site Nightingale. The sampling arm’s shadow is seen in the lower part of the video as the spacecraft came to the site, Nightingale.”

## Osiris-Rex Takes Over Generous Bite Of Asteroid Bennu

Aviation Week <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020110402nasa-26r-3Demail-2D78fa-26l-3D01e-2Dedc-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=sdfbQ-\\_jWIQ4jq0vu0-aPqLDjj\\_h7tEfY3McxLMfI58&s=RSVpLyTQ1TW5H9KJObz2wKafh4Z8OLHufYILWzR2CpE&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020110402nasa-26r-3Demail-2D78fa-26l-3D01e-2Dedc-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=sdfbQ-_jWIQ4jq0vu0-aPqLDjj_h7tEfY3McxLMfI58&s=RSVpLyTQ1TW5H9KJObz2wKafh4Z8OLHufYILWzR2CpE&e=>) (11/4) “Osiris-Rex’s sample collector was filled to overflowing after touching down on the surface of asteroid Bennu on Oct. 20, causing a mylar flap to become slightly wedged open and allowing some particles to escape. The flap—the black bulge on the left inside the ring—is designed to keep the collected material locked inside the sample collector. The unsealed areas appear to be caused by larger rocks that did not fully pass through the flap. A NASA press conference at 5 p.m. on a Friday is usually not good news, and sure enough the team overseeing the Osiris-Rex asteroid sample-return mission had a problem to discuss—one they loved...”

## Hellscape Lava Planet Rains Rocks, Suffers From Supersonic Winds

CNET News <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020110402nasa-26r-3Demail-2D78fa-26l-3D01f-2Da12-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=sdfbQ-\\_jWlQ4jq0vu0-aPqLDjj\\_h7tEfY3McxLMf158&s=7ZBo07Tc4oVy2CQDpAxpF7mnpbkhG0\\_K\\_ubJJ58YNQ&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020110402nasa-26r-3Demail-2D78fa-26l-3D01f-2Da12-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=sdfbQ-_jWlQ4jq0vu0-aPqLDjj_h7tEfY3McxLMf158&s=7ZBo07Tc4oVy2CQDpAxpF7mnpbkhG0_K_ubJJ58YNQ&e=>)> (11/3, Kooser) "If you ever need to feel more grateful for Earth, then just take a moment to contemplate some of the truly horrifying exoplanets that lurk outside our own solar system. Take, for example, K2-141b, a nightmare 'lava planet' where it rains rock. ... The researchers hope next-generation telescopes like NASA's much-delayed James Webb Space Telescope will be able to take a closer look at the exoplanet and tell us if the computer simulations are accurate."

#### Enter Comet S3 Erasmus: A Bright Comet For November

Universe Today <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020110402nasa-26r-3Demail-2D78fa-26l-3D020-2Dbd4-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=sdfbQ-\\_jWlQ4jq0vu0-aPqLDjj\\_h7tEfY3McxLMf158&s=E3L90Bd53CsNdF1YW6t80rFXhCQO0qS9b5WbVSUnCk&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020110402nasa-26r-3Demail-2D78fa-26l-3D020-2Dbd4-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=sdfbQ-_jWlQ4jq0vu0-aPqLDjj_h7tEfY3McxLMf158&s=E3L90Bd53CsNdF1YW6t80rFXhCQO0qS9b5WbVSUnCk&e=>)> (11/3, Dickinson) "Ready for one more comet for 2020? Thus far, this year has been a memorable one for comet watchers, with a steady stream of binocular fuzzball comets, crowned by the amazing sight of naked eye comet C/2020 F3 NEOWISE this past summer. 2020 cometary alumni has also included comets F8 SWAN, P1 NEOWISE, and M3 ATLAS. Now, newly discovered Comet C/2020 S3 Erasmus takes center stage."

#### Election Day Asteroid Didn't Hit--NASA Says 2 More Will Pass Earth Today

Newsweek <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020110402nasa-26r-3Demail-2D78fa-26l-3D021-2D612-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=sdfbQ-\\_jWlQ4jq0vu0-aPqLDjj\\_h7tEfY3McxLMf158&s=TceVF1JA1H97a89vZAK-xzQIAHr0qQihZYio0cQ7UVc&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020110402nasa-26r-3Demail-2D78fa-26l-3D021-2D612-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=sdfbQ-_jWlQ4jq0vu0-aPqLDjj_h7tEfY3McxLMf158&s=TceVF1JA1H97a89vZAK-xzQIAHr0qQihZYio0cQ7UVc&e=>)> (11/3, Osborne) "The 'election day asteroid' that Neil deGrasse Tyson said would 'buzz-cut' Earth on November 2 did not hit our planet. The asteroid—a refrigerator-sized space-rock dubbed 2018 VP1—flew past Earth safely having been forecast to come within around 4,000 miles of our planet, which is an extremely small distance in astronomical terms. ... NASA said there was a 0.41 percent chance of the asteroid entering Earth's atmosphere but even then said it would not hit the surface of the planet. Instead, it said it may graze the outer edges of the atmosphere—a 6,200 mile thick layer known as the exosphere."

#### NASA's Juno Spacecraft Spots 'Sprites' And 'Elves' Dancing In Jupiter's Atmosphere

SPACE <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020110402nasa-26r-3Demail-2D78fa-26l-3D022-2D214-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=sdfbQ-\\_jWlQ4jq0vu0-aPqLDjj\\_h7tEfY3McxLMf158&s=zpDVxFWog99E8Q1NCjZ5g-XWTaw10F7Z3h19Fh1hY1o&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020110402nasa-26r-3Demail-2D78fa-26l-3D022-2D214-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=sdfbQ-_jWlQ4jq0vu0-aPqLDjj_h7tEfY3McxLMf158&s=zpDVxFWog99E8Q1NCjZ5g-XWTaw10F7Z3h19Fh1hY1o&e=>)> (11/3, Brabaw) "Just in time for Halloween, NASA announced results from the space agency's Juno mission that suggest 'sprites' or 'elves' could be frolicking in Jupiter's upper atmosphere. Named for mischievous fairy-like creatures from European myth, sprites are transient luminous events (TLE) seen from far above a lightning storm, including storms on Earth. Lightning triggers these TLEs, which brighten miles of sky above a thunderstorm and closely resemble a jellyfish. Each sprite lasts for only a few milliseconds, making them difficult to spot."

#### New Eclipsing Binary System Detected By Kepler Spacecraft



Phys (UK) <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020110402nasa-26r-3Demail-2D78fa-26l-3D023-2D254-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=sdfbQ-\\_jWlQ4jq0vu0-aPqLDjj\\_h7tEfY3McxLMfl58&s=tarJfvTNjF63E8JlRtnDcvfMfl68qAnWLopbeTxnK6U&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020110402nasa-26r-3Demail-2D78fa-26l-3D023-2D254-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=sdfbQ-_jWlQ4jq0vu0-aPqLDjj_h7tEfY3McxLMfl58&s=tarJfvTNjF63E8JlRtnDcvfMfl68qAnWLopbeTxnK6U&e=>) (11/3, Nowakowski) “An international team of astronomers reports the discovery of a new eclipsing binary system using NASA’s Kepler spacecraft during its prolonged mission known as K2. The system, designated EPIC 216747137, appears to be a post-common-envelope binary (PCEB) of HW Virginis class. The finding is detailed in a paper published October 26 on arXiv.org.”

#### NASA Finally Contacts Voyager 2 After Unprecedented Seven-Month Silence

Forbes <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020110402nasa-26r-3Demail-2D78fa-26l-3D024-2D95a-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=sdfbQ-\\_jWlQ4jq0vu0-aPqLDjj\\_h7tEfY3McxLMfl58&s=8CAe10BJMC03b1g32Wm2c6trbTgbK0Hlr473sKhH3-E&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020110402nasa-26r-3Demail-2D78fa-26l-3D024-2D95a-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=sdfbQ-_jWlQ4jq0vu0-aPqLDjj_h7tEfY3McxLMfl58&s=8CAe10BJMC03b1g32Wm2c6trbTgbK0Hlr473sKhH3-E&e=>) (11/4, Siegel) “In the history of spaceflight, only five spacecraft ever launched by humanity possess enough energy to leave the gravitational pull of our Solar System. While thousands upon thousands of objects have been launched into space, overcoming the gravitational pull of planet Earth, the Sun is more than 300,000 times as massive as our home planet, and is far more difficult to escape from. A combination of fast launch speeds and gravitational assists from other planets were required to leave our Solar System, with only Pioneer 10 and 11, Voyager 1 and 2, and New Horizons attaining ‘escape velocity’ from our Sun.”

Space Tech

No content.

Various

#### Fairfax City School Board Renames Middle School To Honor Katherine Johnson

WJLA-TV <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020110402nasa-26r-3Demail-2D78fa-26l-3D025-2D0bf-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=sdfbQ-\\_jWlQ4jq0vu0-aPqLDjj\\_h7tEfY3McxLMfl58&s=fN\\_mNoKSglqhcQpS1vTExUhVo7140hoNMENAKBGFwt0&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020110402nasa-26r-3Demail-2D78fa-26l-3D025-2D0bf-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=sdfbQ-_jWlQ4jq0vu0-aPqLDjj_h7tEfY3McxLMfl58&s=fN_mNoKSglqhcQpS1vTExUhVo7140hoNMENAKBGFwt0&e=>) Washington (11/3) “Well the Fairfax City School Board voted to rename Lanier Middle School ‘Katherine Johnson Middle School.’ Sydney Lanier, who the school was named after, was a Confederate soldier.”

Other

#### Europe's Arianespace Struggles For Relevance In SpaceX Era

Financial Times <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020110402nasa-26r-3Demail-2D78fa-26l-3D026-2De50-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=sdfbQ-\\_jWlQ4jq0vu0-aPqLDjj\\_h7tEfY3McxLMfl58&s=\\_PG-4ybOjbVQcgygmwURSCT2d-w08YCHfzvCtgz7EM4&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020110402nasa-26r-3Demail-2D78fa-26l-3D026-2De50-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=sdfbQ-_jWlQ4jq0vu0-aPqLDjj_h7tEfY3McxLMfl58&s=_PG-4ybOjbVQcgygmwURSCT2d-w08YCHfzvCtgz7EM4&e=>) (11/3, Hollinger) “For decades the Ariane rocket has been a symbol of European

technological prowess — proof that the EU plays a vital role in the space race...”

SpaceX Wants To Impose Its ‘Own Legal Regime’ On Mars For Human Settlements. A Space Law Expert Says That’s Dubious, But Earth Should Take It Seriously Anyway.

Business Insider <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020110402nasa-26r-3Demail-2D78fa-26l-3D027-2Dfe6-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=sdfbQ-\\_jWIQ4jq0vu0-aPqLDjj\\_h7tEfY3McxLMfI58&s=n7CcBk0mFZ67mqRXaLhWSW-M2sydlt2zQLMGqV769tw&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020110402nasa-26r-3Demail-2D78fa-26l-3D027-2Dfe6-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=sdfbQ-_jWIQ4jq0vu0-aPqLDjj_h7tEfY3McxLMfI58&s=n7CcBk0mFZ67mqRXaLhWSW-M2sydlt2zQLMGqV769tw&e=>) (11/3, Mosher) “SpaceX may try impose its ‘own legal regime’ on Mars and form a ‘self-governing,’ self-sustaining settlement where Earth laws wouldn’t apply. Though this may sound like a page taken out of a sci-fi novel, Elon Musk’s aerospace company has indicated its intentions to do just that in two recent and remarkable posts.”

ESA Awards €1.5 Million To Three German Launch Startups

Space News <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020110402nasa-26r-3Demail-2D78fa-26l-3D028-2D25c-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=sdfbQ-\\_jWIQ4jq0vu0-aPqLDjj\\_h7tEfY3McxLMfI58&s=AdTP790rnvc-oalCWGiA0S2DsfOByL2NBs4YqeC-6zg&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020110402nasa-26r-3Demail-2D78fa-26l-3D028-2D25c-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=sdfbQ-_jWIQ4jq0vu0-aPqLDjj_h7tEfY3McxLMfI58&s=AdTP790rnvc-oalCWGiA0S2DsfOByL2NBs4YqeC-6zg&e=>) (11/3, Parsonson) “The European Space Agency awarded German launch startups HyImpulse Technologies, Rocket Factory Augsburg, and Isar Aerospace a combined 1.5 million euros (\$1.7 million) to support development of competing microlaunchers. The three support contracts announced Nov. 3 are worth 500,000 euros each and are the first awarded under Boost!, an ESA program that aims to foster new commercial space transportation services. The agency adopted Boost! during Space19+, an ESA ministerial-level council meeting held in November 2019, and announced an open call for proposals in April.”

SpaceX Will Stream Potentially Fireworks-Filled Starship Test Flight

CNET News <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020110402nasa-26r-3Demail-2D78fa-26l-3D029-2De3f-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=sdfbQ-\\_jWIQ4jq0vu0-aPqLDjj\\_h7tEfY3McxLMfI58&s=SA2Vv7PIMp3k7VvWPcp0b2Omajljz9LpmUD3BPP4Y-c&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020110402nasa-26r-3Demail-2D78fa-26l-3D029-2De3f-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=sdfbQ-_jWIQ4jq0vu0-aPqLDjj_h7tEfY3McxLMfI58&s=SA2Vv7PIMp3k7VvWPcp0b2Omajljz9LpmUD3BPP4Y-c&e=>) (11/4, Mack) “The latest prototype of Elon Musk’s planned Mars rocket has been coming together at the SpaceX development facility in Boca Chica, Texas. SN8 looks more like an actual rocket than previous iterations, and it could be the first to make an actual high altitude flight, though Musk has been quick to lower expectations.”

Elon Musk Shares Starlink’s Expansion Roadmap

SlashGear <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020110402nasa-26r-3Demail-2D78fa-26l-3D02a-2Da06-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=sdfbQ-\\_jWIQ4jq0vu0-aPqLDjj\\_h7tEfY3McxLMfI58&s=JB\\_vGJ3cVyPITBmZN\\_WjmHrLzwnXatTmpEMiDSculal&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020110402nasa-26r-3Demail-2D78fa-26l-3D02a-2Da06-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=sdfbQ-_jWIQ4jq0vu0-aPqLDjj_h7tEfY3McxLMfI58&s=JB_vGJ3cVyPITBmZN_WjmHrLzwnXatTmpEMiDSculal&e=>) (11/3, Davies) “SpaceX’s Starlink satellite internet service is aiming to add ‘several thousand more’ beta participants, with Elon Musk dropping fresh details about plans for the high-tech network. The focus of more than a dozen SpaceX launches, Starlink relies on a growing constellation of satellites orbiting the Earth, with specially-designed terminals on the ground using them to get online.”

## SpaceX's Starlink: Beta Tester Reveals More About Elon Musk's Internet From Space Service

ZDNet <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020110402nasa-26r-3Demail-2D78fa-26l-3D02b-2Dee0-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=sdfbQ-\\_jWIQ4jq0vu0-aPqLDjj\\_h7tEfY3McxLMf158&s=r7zhXtkVwaUy891rOV0cPBqkIxKFWdzge6f5UThD0hg&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020110402nasa-26r-3Demail-2D78fa-26l-3D02b-2Dee0-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=sdfbQ-_jWIQ4jq0vu0-aPqLDjj_h7tEfY3McxLMf158&s=r7zhXtkVwaUy891rOV0cPBqkIxKFWdzge6f5UThD0hg&e=>) (11/3, Tung) "An early Starlink public beta tester has shared his experience of taking his new UFO-on-a-stick terminal dish to a remote area to find out whether the satellite service lives up to SpaceX CEO Elon Musk's claims. Reddit user Wandering-coder shared his account and a series of photos of Starlink in action with a 300W battery power supply while in remote national forest this week."

## Elon Musk Says SpaceX Will Expand Its Starlink Internet Test

New York Post <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020110402nasa-26r-3Demail-2D78fa-26l-3D02c-2D715-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=sdfbQ-\\_jWIQ4jq0vu0-aPqLDjj\\_h7tEfY3McxLMf158&s=uwCQTYvwy34M9\\_kvgh5NBNxZUB3\\_qQaMKnBBcmGKml0&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020110402nasa-26r-3Demail-2D78fa-26l-3D02c-2D715-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=sdfbQ-_jWIQ4jq0vu0-aPqLDjj_h7tEfY3McxLMf158&s=uwCQTYvwy34M9_kvgh5NBNxZUB3_qQaMKnBBcmGKml0&e=>) (11/3, Manskar) "SpaceX is expanding a test of its Starlink satellite internet and could bring the service to other countries next year, CEO Elon Musk says. The space-exploration firm will send out 'several thousand more' invitations to customers this week for the so-called beta test of Starlink, which connects users to the internet through a network of hundreds of satellites orbiting the Earth, Musk tweeted Monday."

## Elon Musk: Europe To Get Starlink As Early As February, More U.S. Invites Coming Soon

Mashable <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020110402nasa-26r-3Demail-2D78fa-26l-3D02d-2Dc65-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=sdfbQ-\\_jWIQ4jq0vu0-aPqLDjj\\_h7tEfY3McxLMf158&s=\\_9DcBJRStZRuBefNwHXG4N67ePwIxSg1MCDWoE-LZkY&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020110402nasa-26r-3Demail-2D78fa-26l-3D02d-2Dc65-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=sdfbQ-_jWIQ4jq0vu0-aPqLDjj_h7tEfY3McxLMf158&s=_9DcBJRStZRuBefNwHXG4N67ePwIxSg1MCDWoE-LZkY&e=>) (11/3, Schroeder) "SpaceX's satellite-based, broadband internet service Starlink will soon be available to a lot more people. The company's CEO Elon Musk tweeted on Monday that 'several thousand more Starlink beta participation invitations' are coming this week."

## Elon Musk Says That 'Several Thousand' More Starlink Internet Beta Invitations Will Be Sent Out This Week In The US — And That The Service Could Reach Europe By February

Business Insider <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020110402nasa-26r-3Demail-2D78fa-26l-3D02e-2D843-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=sdfbQ-\\_jWIQ4jq0vu0-aPqLDjj\\_h7tEfY3McxLMf158&s=lyNkywdRL\\_dSDt4uedGo0cSre3q7f5kSz9JVeyl4peA&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020110402nasa-26r-3Demail-2D78fa-26l-3D02e-2D843-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=sdfbQ-_jWIQ4jq0vu0-aPqLDjj_h7tEfY3McxLMf158&s=lyNkywdRL_dSDt4uedGo0cSre3q7f5kSz9JVeyl4peA&e=>) (11/3, Duffy) "SpaceX CEO Elon Musk said Monday that 'several thousand' more invitations for the company's Starlink internet public beta would be sent out in the coming days and that it could expand to Europe early next year. Starlink's goal is to beam high-speed internet service around the Earth from a network of satellites. Some users in the public beta, which launched on October 26, have reported blistering download speeds of more than 160 megabits per second."

## ULA Launch

WKMG-TV Orlando (FL) <[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2020110402nasa-26r-3Demail-2D78fa-26l-3D02f-2D19e-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=sdfbQ-\\_jWlQ4jq0vu0-aPqLDjj\\_h7tEfY3McxLMfl58&s=n\\_kYogSHpTPGQs\\_Cw8YAuhedkcwYD4gbV9S4KBZCeGw&e=>](https://urldefense.proofpoint.com/v2/url?u=https-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2020110402nasa-26r-3Demail-2D78fa-26l-3D02f-2D19e-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=sdfbQ-_jWlQ4jq0vu0-aPqLDjj_h7tEfY3McxLMfl58&s=n_kYogSHpTPGQs_Cw8YAuhedkcwYD4gbV9S4KBZCeGw&e=>)> (11/3) “Well, it is a big week here in central Florida. Tomorrow, United Launch Alliance is set to launch a secret spy satellite that supports the US Department of Defense on a rocket from Cape Canaveral.”

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## Daily Report for Friday, June 18 to Monday, June 21

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From: Margetta, Robert J. (HQ-NA020) <robert.j.margetta@nasa.gov>  
To: HQ-DL-OCOMM-Daily <hq-dl-ocomm-daily@mail.nasa.gov>, code-p@lists.hq.nasa.gov, nasa@bulletinintelligence.com  
Sent: June 18, 2021 7:53:32 AM EDT  
Received: June 18, 2021 7:53:50 AM EDT  
Attachments: DAILY REPORT 06-18-2021.docx

Good morning.

Attached and below is the Communications Daily Report for products and activities Friday through Monday.

Thank you,

Rob Margetta

NASA Communications Daily Report

Friday, June 18 – Monday, June 21

FRIDAY, June 18

Activities

-Astronaut Drew Feustel for Rosedale School/Calgary Board of Education.

-Astronaut Victor Glover for Amazon Global Air.

-Anniversary: LRO/LCROSS launch

Social Media Activity

Humans in Space

-A new episode of the Houston We Have a Podcast episode entitled “200 Episodes” will be amplified on flagship social media.

Solar System and Beyond

-A new episode of the Gravity Assist Podcast entitled “Climate Change” with Gavin Schmidt will be amplified on flagship social media accounts

-A Tumblr post showcasing the new Sun Science stamps released by the United States Postal Service will be amplified by flagship accounts. Additionally, a story will be shared on the @NASA Instagram account, and an Instagram engagement will occur between NASA and the USPS accounts.

NASA tv

-11 am – SpaceCast Weekly – Johnson Space Center (All Channels)

## HQ Products

### Podcast

-10 am – Gravity Assist Podcast - Climate with Gavin Schmidt.

## Center Products

### Podcast

-Houston We Have a Podcast “Liftoff Live” episode 200 / Johnson

### Image/Video

-10 am – Image feature- Summer Solstice in the Northern Hemisphere / Goddard

oJune 20 marks the summer solstice in the Northern Hemisphere. A solstice is the point in Earth’s orbit where one half of the planet is receiving the most daylight and the other the least.

-10 am – Hubble Friday image and caption / Goddard

### Blog Post

-Artemis I LVSA Foaming and Integration / Kennedy

oBlog post on Artemis I Launch Vehicle Stage Adapter (LVSA) will be mated atop the core stage upon completion of thermal protection system (TPS) foaming.

## Web Articles

-Sun Science Stamps Highlight a Decade of Sun-Watching from Space / Goddard

-10 am – 2021 RASC-AL Forum Winning Teams Announced / Langley

## Saturday, June 19

### Activities

-Anniversary: Viking 1 Mars Orbit Insertion

### Social Media Activity

### Agency

-In celebration of Juneteenth an image feature will be shared on nasa.gov with original posts on flagship social media accounts.

## SUNDAY, June 20

### Activities

·8 am – U.S. EVA 75 (Kimbrough and Pesquet) IROSA

oU.S. EVA 75 (Kimbrough and Pesquet) to install 4B channel IROSA solar panels, EVA start 8 a.m., live on NASA TV.

·Ingenuity Flight 8

oIf the flight takes place, data will be down to Earth Monday evening.

·Anniversary: OSTM/JASON 2 Launch (2008)

#### Social Media Activity

#### Humans in Space

·Live coverage of Expedition 65 spacewalk with NASA astronaut Shane Kimbrough and ESA astronaut Thomas Pesquet beginning at 6:30 am EDT on NASA TV, the NASA App, the agency website, and flagship social media channels.

#### Solar System and Beyond

·To highlight the beginning of Summer Solstice flagship accounts will share original posts.

#### MONDAY, June 21

#### Activities

·10:50 am – Megan McArthur w/ Bloomberg New Catalyst.

oISS Downlink: Megan McArthur and Mark Vande Hei with Bloomberg New Catalyst economic forum and deferred release July 4 message.

· [TENTATIVE]White Sands' Julio Padilla with HBO docuseries "How To with John Wilson."

oJulio Padilla with HBO docuseries "How To with John Wilson," filming at White Sands Test Facility lab about tastes and smells and his work on the Materials and Components team testing for odors inside a spacecraft, and why it's vital that astronauts aren't exposed to malodors or toxic odors in space.

·Space.com interview with Webb's Lee Feinberg.

oPhone Media Interview: Chelsea Hohd, a reporter with Space.com, interviews Lee Feinberg, Webb's optical telescope element.

·Interview: Science Channel with Ravi Kumar Kopparapu (moved from June 15).

oScience Channel interview with Ravi Kumar Kopparapu, Research AST, Planetary Studies about biosignatures (based on the upcoming report on UFO/UAPS).

·Astronaut Jessica Meir for Raising A Reader Massachusetts, Boston.

#### Social Media Activity

## Moon to Mars

- Flagship social media accounts will engage with and amplify posts published by LEGO in support of the LEGO Education Artemis I lessons announcement.

## HQ Products

### Release

- Mechanical Integration Services and Technologies (MIST) II.

### Web Article

- 3 pm – OSTEM MUREP OCEAN Award Announcement

- oSTEM awards institutions through MUREP's Ocean Biology and Biogeochemistry (OCEAN) solicitation to Minority Serving Institutions (MSIs).

## Center Products

### Blog Post

- 2 pm – Boeing CFT Atlas V Rocket Arrives at KSC / Kennedy

- oBlog post highlighting the arrival of the Atlas V rocket at the Florida spaceport.

### Web Articles

- NASA Releases DRAFT RFP for xEVA spacesuits and services / Johnson

- oNASA recently shifted its strategy for xEVA Artemis spacesuits to an industry-centered approach. One or more commercial partners, in collaboration with NASA, will design, develop, build, assemble, test, and maintain a fleet of flight and training xEVA equipment.

- 10 am – Looking to the Clouds to Improve Climate Models / Armstrong

- oA web feature about the Nephelometer Experiment, or NephEx, scheduled to launch aboard a high-altitude balloon (A nephelometer measures aerosol concentrations through photometry).

- 11:30 am – Sentinel-6 Michael Freilich First Data / JPL

- oThe first low-resolution data products are in on Sentinel-6 Michael Freilich since its November 2020 launch.

- 2 pm – Prototype Venus Balloon Detects Quake on Earth / JPL

- oIn a new study, a team developing a balloon prototype that would float above Venus, safe from its scorching temperatures and crushing atmosphere, document how they were able to use a seismometer aboard the balloon to detect 4.2 magnitude temblor 16,000 feet below in Richmond, California.



## Attachment

### 1. DAILY REPORT 06-18-2021.docx

Type: application/vnd.openxmlformats-officedocument.wordprocessingml.document  
Size: 43 KB (44,485 bytes)

**Attachment #1**

**DAILY REPORT 06-18-2021.docx**

**Original view**

4 pages (displayed on pages 7 to 10)

# NASA Communications Daily Report

Friday, June 18 – Monday, June 21

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## **FRIDAY, JUNE 18**

### **ACTIVITIES**

- Astronaut Drew Feustel for Rosedale School/Calgary Board of Education.
- Astronaut Victor Glover for Amazon Global Air.
- Anniversary: LRO/LCROSS launch

### **SOCIAL MEDIA ACTIVITY**

#### **Humans in Space**

- A new episode of the Houston We Have a Podcast episode entitled “200 Episodes” will be amplified on flagship social media.

#### **Solar System and Beyond**

- A new episode of the Gravity Assist Podcast entitled “Climate Change” with Gavin Schmidt will be amplified on flagship social media accounts
- A Tumblr post showcasing the new Sun Science stamps released by the United States Postal Service will be amplified by flagship accounts. Additionally, a story will be shared on the @NASA Instagram account, and an Instagram engagement will occur between NASA and the USPS accounts.

### **NASA TV**

- 11 am – SpaceCast Weekly – Johnson Space Center (All Channels)

### **HQ PRODUCTS**

#### **Podcast**

- 10 am – Gravity Assist Podcast - Climate with Gavin Schmidt.

### **CENTER PRODUCTS**

#### **Podcast**

- Houston We Have a Podcast “Liftoff Live” episode 200 / Johnson

#### **Image/Video**

- 10 am – Image feature- Summer Solstice in the Northern Hemisphere / Goddard
  - June 20 marks the summer solstice in the Northern Hemisphere. A solstice is the point in Earth’s orbit where one half of the planet is receiving the most daylight and the other the least.
- 10 am – Hubble Friday image and caption / Goddard

#### **Blog Post**

- Artemis I LVSA Foaming and Integration / Kennedy
  - Blog post on Artemis I Launch Vehicle Stage Adapter (LVSA) will be mated atop the core stage upon completion of thermal protection system (TPS) foaming.

## Web Articles

- Sun Science Stamps Highlight a Decade of Sun-Watching from Space / Goddard
- 10 am – 2021 RASC-AL Forum Winning Teams Announced / Langley

## SATURDAY, JUNE 19

### ACTIVITIES

- Anniversary: Viking 1 Mars Orbit Insertion

### SOCIAL MEDIA ACTIVITY

#### Agency

- In celebration of Juneteenth an image feature will be shared on nasa.gov with original posts on flagship social media accounts.

## SUNDAY, JUNE 20

### ACTIVITIES

- 8 am – U.S. EVA 75 (Kimbrough and Pesquet) IROSA
  - U.S. EVA 75 (Kimbrough and Pesquet) to install 4B channel IROSA solar panels, EVA start 8 a.m., live on NASA TV.
- Ingenuity Flight 8
  - If the flight takes place, data will be down to Earth Monday evening.
- Anniversary: OSTM/JASON 2 Launch (2008)

### SOCIAL MEDIA ACTIVITY

#### Humans in Space

- Live coverage of Expedition 65 spacewalk with NASA astronaut Shane Kimbrough and ESA astronaut Thomas Pesquet beginning at 6:30 am EDT on NASA TV, the NASA App, the agency website, and flagship social media channels.

#### Solar System and Beyond

- To highlight the beginning of Summer Solstice flagship accounts will share original posts.

## MONDAY, JUNE 21

### ACTIVITIES

- 10:50 am – Megan McArthur w/ Bloomberg New Catalyst.
  - ISS Downlink: Megan McArthur and Mark Vande Hei with Bloomberg New Catalyst economic forum and deferred release July 4 message.
- [TENTATIVE] White Sands' Julio Padilla with HBO docuseries "How To with John Wilson."
  - Julio Padilla with HBO docuseries "How To with John Wilson," filming at White Sands Test Facility lab about tastes and smells and his work on the Materials

and Components team testing for odors inside a spacecraft, and why it's vital that astronauts aren't exposed to malodors or toxic odors in space.

- Space.com interview with Webb's Lee Feinberg.
  - Phone Media Interview: Chelsea Hohd, a reporter with Space.com, interviews Lee Feinberg, Webb's optical telescope element.
- Interview: Science Channel with Ravi Kumar Kopparapu (*moved from June 15*).
  - Science Channel interview with Ravi Kumar Kopparapu, Research AST, Planetary Studies about biosignatures (based on the upcoming report on UFO/UAPS).
- Astronaut Jessica Meir for Raising A Reader Massachusetts, Boston.

## **SOCIAL MEDIA ACTIVITY**

### **Moon to Mars**

- Flagship social media accounts will engage with and amplify posts published by LEGO in support of the LEGO Education Artemis I lessons announcement.

## **HQ PRODUCTS**

### **Release**

- Mechanical Integration Services and Technologies (MIST) II.

### **Web Article**

- 3 pm – OSTEM MUREP OCEAN Award Announcement
  - OSTEM awards institutions through MUREP's Ocean Biology and Biogeochemistry (OCEAN) solicitation to Minority Serving Institutions (MSIs).

## **CENTER PRODUCTS**

### **Blog Post**

- 2 pm – Boeing CFT Atlas V Rocket Arrives at KSC / Kennedy
  - Blog post highlighting the arrival of the Atlas V rocket at the Florida spaceport.

### **Web Articles**

- NASA Releases DRAFT RFP for xEVA spacesuits and services / Johnson
  - NASA recently shifted its strategy for xEVA Artemis spacesuits to an industry-centered approach. One or more commercial partners, in collaboration with NASA, will design, develop, build, assemble, test, and maintain a fleet of flight and training xEVA equipment.
- 10 am – Looking to the Clouds to Improve Climate Models / Armstrong
  - A web feature about the Nephelometer Experiment, or NephEx, scheduled to launch aboard a high-altitude balloon (A nephelometer measures aerosol concentrations through photometry).
- 11:30 am – Sentinel-6 Michael Freilich First Data / JPL
  - The first low-resolution data products are in on Sentinel-6 Michael Freilich since its November 2020 launch.
- 2 pm – Prototype Venus Balloon Detects Quake on Earth / JPL

- In a new study, a team developing a balloon prototype that would float above Venus, safe from its scorching temperatures and crushing atmosphere, document how they were able to use a seismometer aboard the balloon to detect 4.2 magnitude temblor 16,000 feet below in Richmond, California.

## Daily Report for Tuesday, June 15

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From: Potter, Sean (HQ-NA020) <sean.potter@nasa.gov>  
Sent: June 15, 2021 7:30:34 AM EDT  
Received: June 15, 2021 7:30:54 AM EDT  
Attachments: DAILY REPORT 06-15-2021.docx

Good morning.

Attached and below is today's Communications Daily Report.

Thank you,

Sean Potter

NASA Communications Daily Report

Tuesday, June 15

Activities

.7 to 8 am – Administrator Nelson on GLEX Panel

oAdministrator Nelson participating in a virtual panel with other space agency leaders during the Global Space Exploration Conference (GLEX) 2021 that will take place in St. Petersburg, Russia. Roscosmos, the Canadian Space Agency (CSA), ESA (European Space Agency), Italian Space Agency (ASI), the UAE/Mohammed Bin Rashid Space Centre (MBRSC), Norwegian Space Agency (NOSA), South African National Space Agency (SANSA), and the Turkish Space Agency (TUA) will also be represented on the panel, with IAF President Pascale Ehrenfreund moderating.

.9 am – Brazil Signs Artemis Accords

oBrazil will sign the Artemis Accords during a ceremony at the Brazilian Presidency in Brasilia. Ceremony broadcast live (in Portuguese) at: <https://tvbrasil.ebc.com.br/tags/ao-vivo>  
<<https://gcc02.safelinks.protection.outlook.com/?url=https://tvbrasil.ebc.com.br/tags/ao-vivo&data=04|01|randy.c.cruz@nasa.gov|3ca12038d6514abd9afd08d92ff0fdb5|7005d45845be48ae8140d43da96dd17b|0|0|637593534545271417|Unknown|TWFpbGZsb3d8eyJWIjojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ik1haWwiLCJXVCi6Mn0=|1000&sdata=Z0Lcb58+uE+IiKUKDE2fb2VcrVKIcepGqaf6RdSdXp8=&reserved=0>>

.9:35 am – Minotaur 1 launch from Wallops

oLaunch of a Northrop Grumman Minotaur 1 launch for the U.S. Space Force carrying 3 payloads for the National Reconnaissance Office (NRO). Live coverage on the Wallops YouTube  
<<https://gcc02.safelinks.protection.outlook.com/?url=https://t.co/zWY2W9VcuN?amp=1&data=04|01|randy.c.cruz@nasa.gov|3ca12038d6514abd9afd08d92ff0fdb5|7005d45845be48ae8140d43da96dd17b|0|0|637593534545271417|Unknown|TWFpbGZsb3d8eyJWIjojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ik1haWwiLCJXVCi6Mn0=|1000&sdata=AHJebF9IqzWlylZYd3ITzf7ybGTLQKlHImeKkshx7PU=&reserved=0>> page begins at 9:05 am.

.1:30 to 2 pm – Virtual NASASpaceflight Interview with Stennis Green Run Test Conductor, focusing on Green Run wrap-up

.2 pm – Administrator Nelson testifies before Senate Appropriations Committee (CJS subcommittee) on NASA's FY

## 2022 Budget Request

- Webb Launch Readiness Exercise #4 (internal NASA meeting)
- Interview: Science Channel with Goddard's Ravi Kumar Kopparapu about biosignatures, based on the upcoming report on UFO/UAPS
- Astronaut Victor Glover for Cal Poly Black Commencement in San Luis Obispo, California
- Astronaut Don Pettit for Project Moon Hut Foundation Age of Infinite Interview Podcast Series in Manlius, New York
- Birthday: Former Administrator Jim Bridenstine

## NASA Television

### On Air

- 2 pm – Administrator Nelson testifies before Senate Appropriations Committee on NASA's FY 2022 Budget Request

### NASA HQ In-Studio Shoots, Productions:

- Pulling Soundbites from the above hearing related to: China Value of NASA, DEI/RFI, and Competition, announcement for Lander under services agreement

## Social Media Activity

### Agency

- Live coverage of the Minotaur I Launch will be available beginning at 6:30 am EDT on the Wallops YouTube channel. The stream will be embedded on [nasa.gov/live](https://nasa.gov/live) and promoted on flagship social media accounts. Liftoff is targeted for 7 am EDT.

## Humans in Space

- Purposeful Passengers Tumblr showcasing the "Name the Artemis Moonikin Challenge." Flagship social media accounts will share communications products in reference to the Purposeful Passengers Challenge
- NASA Knowledge: TDRS Miles Above Earth / Johnson

## Moon to Mars

- Tweets about Brazil signing Artemis Accords from @SenBillNelson and @NASAArtemis accounts

## HQ Products

### Release

- NASA Launches Mission Equity, Seeks Public Input to Broaden Access

oAs an agency focused on exploring the cosmos and understanding our own planet, NASA is uniquely positioned to inform, inspire, and provide opportunity through outreach, research, and partnerships. Our outstanding challenge is to



ensure NASA information and opportunities reach historically underrepresented and underserved communities.

#### Web Articles

-9:30 am – Spinoff Feature: Communicating via Long-Distance Lasers

oA NASA partnership made lasers viable for satellite communications

-10 am – Name the Artemis I Moonikin Campaign Explainer

oThis web feature outlines the Name the Artemis I Contest starting June 16 and ending June 28.

-10 am – Moonikin Background Features

oThree web features provide background on the names featured in the Name the Artemis I Moonikin contest (Julius Montgomery, Arturo Campos, Michael Wargo)

-Brazil Signs Artemis Accords

#### Center Products

#### Image/Video

-10 am – Apollo to Artemis Then & Now: Core Stage Stacking / Kennedy

oNewest image for the Then & Now page for Apollo to Artemis will be of core stage lift and mate

#### Web Articles

-KSC Indian River Bridge Utility Design / Kennedy

oNASA Engineering is performing the utility design work for the new Indian River Bridge project. The bridge is a vital accessway to Kennedy Space Center.

-1:30 pm – A Probing Question: How Do You Fly the X-59 Accurately? / Glenn

oWeb feature story on the completion of X-59 testing in Glenn's 8' x 6' supersonic wind tunnel

-3 pm – Joint NASA, NOAA Study Finds Earth's Energy Imbalance Has Doubled / Langley

oScientists at NASA and NOAA compared data from NASA's Clouds and the Earth's Radiant Energy System (CERES) suite of satellite sensors that measure how much energy enters and leaves Earth's system, with data from a global array of ocean floats, called Argo, that enable an accurate estimate of the rate at which the world's oceans are heating up, and determined that Earth's energy imbalance approximately doubled during the 14-year period from 2005 to 2019. A paper on these results will publish soon in Geophysical Research Letters.

-FlyTEC Demonstration / Langley

oFlyTEC is a joint FAA-NASA pilot-in-the-loop simulation study to develop and assesses candidate flight-test maneuvers to be used by certification test pilots to assess whether the response of an eVTOL aircraft to pilot commands is safe and is expected to be part of the tests the FAA uses to certify this new class of aircraft.



## Attachment

### 1. DAILY REPORT 06-15-2021.docx

Type: application/vnd.openxmlformats-officedocument.wordprocessingml.document  
Size: 45 KB (46,464 bytes)

**Attachment #1**

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**Original view**

3 pages (displayed on pages 7 to 9)

# NASA Communications Daily Report

Tuesday, June 15

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- 7 to 8 am – Administrator Nelson on GLEX Panel
  - Administrator Nelson participating in a virtual panel with other space agency leaders during the Global Space Exploration Conference (GLEX) 2021 that will take place in St. Petersburg, Russia. Roscosmos, the Canadian Space Agency (CSA), ESA (European Space Agency), Italian Space Agency (ASI), the UAE/Mohammed Bin Rashid Space Centre (MBRSC), Norwegian Space Agency (NOSA), South African National Space Agency (SANSA), and the Turkish Space Agency (TUA) will also be represented on the panel, with IAF President Pascale Ehrenfreund moderating.
- 9 am – Brazil Signs Artemis Accords
  - Brazil will sign the Artemis Accords during a ceremony at the Brazilian Presidency in Brasilia. Ceremony broadcast live (in Portuguese) at: <https://tvbrasil.ebc.com.br/tags/ao-vivo>
- 9:35 am – Minotaur 1 launch from Wallops
  - Launch of a Northrop Grumman Minotaur 1 launch for the U.S. Space Force carrying 3 payloads for the National Reconnaissance Office (NRO). Live coverage on the [Wallops YouTube](#) page begins at 9:05 am.
- 1:30 to 2 pm – Virtual NASASpaceflight Interview with Stennis Green Run Test Conductor, focusing on Green Run wrap-up
- 2 pm – Administrator Nelson testifies before Senate Appropriations Committee (CJS subcommittee) on NASA's FY 2022 Budget Request
- Webb Launch Readiness Exercise #4 (internal NASA meeting)
- Interview: Science Channel with Goddard's Ravi Kumar Kopparapu about biosignatures, based on the upcoming report on UFO/UAPS
- Astronaut Victor Glover for Cal Poly Black Commencement in San Luis Obispo, California
- Astronaut Don Pettit for Project Moon Hut Foundation Age of Infinite Interview Podcast Series in Manlius, New York
- Birthday: Former Administrator Jim Bridenstine

## NASA TELEVISION

### On Air

- 2 pm – Administrator Nelson testifies before Senate Appropriations Committee on NASA's FY 2022 Budget Request

### NASA HQ In-Studio Shoots, Productions:

- Pulling Soundbites from the above hearing related to: China Value of NASA, DEI/RFI, and Competition, announcement for Lander under services agreement

## SOCIAL MEDIA ACTIVITY

### Agency

- Live coverage of the Minotaur I Launch will be available beginning at 6:30 am EDT on the Wallops YouTube channel. The stream will be embedded on [nasa.gov/live](https://nasa.gov/live) and promoted on flagship social media accounts. Liftoff is targeted for 7 am EDT.

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- Tweets about Brazil signing Artemis Accords from @SenBillNelson and @NASAArtemis accounts

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- NASA Launches Mission Equity, Seeks Public Input to Broaden Access
  - As an agency focused on exploring the cosmos and understanding our own planet, NASA is uniquely positioned to inform, inspire, and provide opportunity through outreach, research, and partnerships. Our outstanding challenge is to ensure NASA information and opportunities reach historically underrepresented and underserved communities.

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  - A NASA partnership made lasers viable for satellite communications
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  - This web feature outlines the Name the Artemis I Contest starting June 16 and ending June 28.
- 10 am – Moonikin Background Features
  - Three web features provide background on the names featured in the Name the Artemis I Moonikin contest (Julius Montgomery, Arturo Campos, Michael Wargo)
- Brazil Signs Artemis Accords

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  - Newest image for the Then & Now page for Apollo to Artemis will be of core stage lift and mate

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- KSC Indian River Bridge Utility Design / Kennedy

- NASA Engineering is performing the utility design work for the new Indian River Bridge project. The bridge is a vital accessway to Kennedy Space Center.
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  - Web feature story on the completion of X-59 testing in Glenn's 8' x 6' supersonic wind tunnel
- 3 pm – Joint NASA, NOAA Study Finds Earth's Energy Imbalance Has Doubled / Langley
  - Scientists at NASA and NOAA compared data from NASA's Clouds and the Earth's Radiant Energy System (CERES) suite of satellite sensors that measure how much energy enters and leaves Earth's system, with data from a global array of ocean floats, called Argo, that enable an accurate estimate of the rate at which the world's oceans are heating up, and determined that Earth's energy imbalance approximately doubled during the 14-year period from 2005 to 2019. A paper on these results will publish soon in Geophysical Research Letters.
- FlyTEC Demonstration / Langley
  - FlyTEC is a joint FAA-NASA pilot-in-the-loop simulation study to develop and assesses candidate flight-test maneuvers to be used by certification test pilots to assess whether the response of an eVTOL aircraft to pilot commands is safe and is expected to be part of the tests the FAA uses to certify this new class of aircraft.

## Daily Report for Tuesday, June 22

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From: Potter, Sean (HQ-NA020) <sean.potter@nasa.gov>  
Sent: June 22, 2021 8:00:34 AM EDT  
Received: June 22, 2021 8:01:09 AM EDT  
Attachments: DAILY REPORT 06-22-2021.docx

Good morning.

Attached and below is today's Communications Daily Report.

Thank you,

Sean Potter

NASA Communications Daily Report

Tuesday, June 22

Activities

-12:30 to 1:30 pm – NBC interview on NASA's search for life with Planetary Sciences Division Director Lori Glaze

oNBC's Tom Costello will interview Lori Glaze on NASA's ongoing work and research in the search for life beyond our own planet.

-3pm – NASA Administrator Bill Nelson live interview with Newsmax on vision for NASA

-Aviation Week interviews with Webb experts

o4:30 pm – Sandra Irish, Webb lead structures engineer; Begoña Vila, Webb instrument systems engineer; Bill Ochs, Webb project manager at Goddard; Scott Willoughby, Webb program manager at Northrop Grumman interview with Irene Klotz of Aviation Week at Northrop Grumman

o5 to 6 pm – Aviation Week interview of Webb team members Scott Willoughby and Bill Ochs

-7 to 8 pm – Virtual Tour: Space Environments Complex at Glenn

oVirtual tour followed by live Q&A with expert for registered guests. The SEC is home to the world's largest and most powerful Space Simulation Vacuum Chamber, which measures 100 ft. in diameter by 122 ft. high. It also boasts the Reverberant Acoustic Test Facility, which can simulate the noise of a spacecraft launch up to 163 decibels; and the Mechanical Vibration Facility, the world's most powerful spacecraft shaker system, which subjects test articles to the rigorous conditions of launch.

-Deutsche Welle interview with Dr. Ravi Kumar Kopparapu of Goddard for story on the UFO/UAP report.

-External Proctor & Gamble media release on NASA Space Act Agreement

-Webb Launch Readiness Exercise #4 concludes at the Space Telescope Science Institute in Baltimore

-Astronaut Jessica Meir for Emory University and Children's Healthcare of Atlanta



oResults of SpaceX's 20th Resupply Mission Research "How Growing Cardiac Stem Cells in Space Can Benefit our Cardiac Kids" in Atlanta.

-Astronaut Kate Rubins with Fox 40 Sacramento on her recent mission to the space station

#### NASA Television

##### On Air

-No new programming scheduled

##### NASA HQ In-Studio Shoots, Productions:

-12:30 pm – Lori Glaze interview with NBC's Tom Costello via Zoom

##### Social Media ActivitY

##### Agency

-Live coverage of Administrator Nelson's testimony before the House Science Committee on NASA's FY2022 Budget will air beginning at 10 a.m. EDT. Programming will air on NASA TV, the NASA App, nasa.gov/live and will be promoted on flagship social media accounts.

-Women@NASA posts with flagship amplification to commemorate science fiction author Octavia E. Butler's birthday. In March, NASA named the landing site of the Perseverance rover "Octavia E. Butler Landing," after the author.

##### Solar System and Beyond

-Flagship social media accounts will amplify posts for the Ask an Astrobiologist live show featuring Goddard scientist Heather Graham. The program will stream live at 1 p.m. EDT to the NASA Astrobiology Facebook page.

##### Other

-NASA Knowledge: The Golden Record in English / Johnson

##### HQ Products

##### Release

-[TENTATIVE] RFI Public Meeting Registration

oInformation on how to register for the June 29 Mission Equity RFI event

##### Media Advisory

-NASA to Air Third Spacewalk to Install New Station Solar Arrays

-Northrop Grumman CRS-15 departure coverage advisory

##### Contract Release

·[TENTATIVE] NASA Extends Cyclone Global Navigation Satellite System Mission Contract (notifications complete; held from Monday)

·4 pm – Contract Mechanical Integration Services and Technologies (MIST) II contract (held from Monday)

#### Center Products

#### Blog Post

·10 am – Artemis I LVSA Foaming and Integration / Kennedy

oBlog post on Artemis I Launch Vehicle Stage Adapter (LVSA) will be mated atop the core stage upon completion of thermal protection system (TPS) foaming.

·2 pm – Ingenuity Flight 8 Recap / JPL

oOperations lead Teddy Tzanetos recaps the flight from Sunday, June 20.

#### Image/Video

·UTM close-out image feature / Ames

oA multi-image feature marks the close-out of the Unmanned Aircraft Systems Traffic Management project, or UTM. One photo is featured from each year of testing for the four technical capability levels achieved.

#### Web Articles

·10 am – EPSCoR Feature / Kennedy

oFeature highlighting NASA's Established Program to Stimulate Competitive Research program with an overview of two of the recently funded projects.

·1:30 pm -- A Perseverance Scientist's Favorite Image from Jezero Crater / JPL

oAs part of an occasional series, a Perseverance scientist offers details on her favorite image of Jezero Crater. First up is an image of a feature called Delta Scarp.

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3 pages (displayed on pages 6 to 8)

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  - As part of an occasional series, a Perseverance scientist offers details on her favorite image of Jezero Crater. First up is an image of a feature called Delta Scarp.

## Daily Report for Tuesday, June 29

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From: Potter, Sean (HQ-NA020) <sean.potter@nasa.gov>  
Sent: June 29, 2021 7:53:23 AM EDT  
Received: June 29, 2021 7:53:46 AM EDT  
Attachments: DAILY REPORT 06-29-2021.docx

Good morning.

Attached and below is today's Communications Daily Report.

Thank you,

Sean Potter

NASA Communications Daily Report

Tuesday, June 29

Activities

·9 am – Sen. Nelson at Best Places to Work Event

·9 am to 1 pm – CBS Sunday Morning News Interview at JPL on Drought in West

oThe interview will be with hydrologist JT Reager.

·10:30 am – Sen. Nelson Interview with Bloomberg TV on commercialization

·10:30 to 11 am – Phil McAlister, director of commercial spaceflight development, interview with AP's Marcia Dunn about the agency's efforts to grow a strong low-Earth orbit economy

·11 am – Sen. Nelson records NASA Science Live video for Asteroid Day and KSC Indian River Bridge video

·11 am to 1 pm – Kathy Lueders Artemis update to National Academy of Engineering

·12:25 pm – Northrop Grumman CRS-15 Cygnus departure from International Space Station; live coverage on NASA TV begins at 12 pm.

·2:00 pm – Sen. Nelson Interview with Discovery on UAP report

·7:27 pm – Progress 78 launch from Baikonur Cosmodrome in Kazakhstan; live coverage on NASA TV begins at 7 pm

·Astronaut Mike Barratt for 16th Annual Space Life Sciences Summer Institute in Houston

·Launch of SpaceX Transporter-2 with NASA CubeSats

oSpaceX Transporter-2 rideshare mission will launch from Cape Canaveral Space Force Station in Florida. Includes the TROPICS pathfinder CubeSat, as well as two technology demonstration missions – PACE-1, and TILE-3, that will fly on CubeSat platforms.



·Webb presentations at the European Astronomical Society

·Anniversary: Launch of first nuclear powered satellite (Transit 4A) (1961)

#### Social Media Activity

##### Agency

·Pride Month – New edition of Faces of NASA web feature released for Pride month.

##### Humans in Space

·Live coverage of the release of the Northrop Grumman “SS Katherine Johnson” Cygnus Cargo Craft from the International Space Station is scheduled for release at 12:25 pm. Coverage will be airing on NASA TV, the NASA App, nasa.gov/live and NASA flagship social media accounts.

·Live coverage of the launch of the ISS Progress 78 Cargo Ship to the International Space Station from the Baikonur Cosmodrome in Kazakhstan launch scheduled for 7:27 pm, airing on NASA TV, the NASA App, and nasa.gov/live.

##### Moon to Mars

·Flagship social media accounts will share communications products for the conclusion of the Purposeful Passengers – Name the Artemis Moonikin Challenge. Products include a news release and a Tumblr post.

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·Flagship will amplify Space Tech social media products surrounding the newest edition of NASA’s Software catalog.

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##### In Production

·10:30 am – Sen. Nelson interview with Bloomberg

·11 am – Record Teleprompter Message for NASA Science Live

·11:15 am – Record Teleprompter Message for Indian River Bridge Award

·2 pm – Sen. Nelson interview with Discovery

##### HQ Products

##### Release

·Best Place to Work Results

·Available for Download, NASA Software Benefits Earth

oNASA's computational innovations are readily available for applications beyond space, including benefiting our home planet. The agency's latest software catalog has dozens of new codes available for free download.

·Public Names 'Moonikin' Flying Around Moon on NASA's Artemis I Mission

Web Article

·9 am – After 60 Years, Nuclear Power for Spaceflight is Still Tried and True

oSix decades after the launch of the first nuclear-powered space mission, Transit IV-A, NASA is embarking on a bold future of human exploration and scientific discovery. This future builds on a proud history of safely launching and operating nuclear-powered missions in space.

·11 am – Abnormally High Alcohol, Mystery Heat Source Detected on Comet Wirtanen

oA study using Keck Observatory data finds that Comet 46P/Wirtanen was releasing an unusual amount of alcohol as it made its historic flyby of Earth two and a half years ago.

·12 pm – Black Holes Make Tsunamis in Computer Simulations

Center Products

Blog Post

·3 pm – ELaNa 33 CubeSat Deployment / Kennedy

oThe ELaNa 33 CubeSat IT-SPINS, created by Montana State University, will deploy after the NG-15 Cygnus spacecraft undocks from the ISS.

·[TENTATIVE] Ingenuity Flight 9 Preview / JPL

oIngenuity chief pilot Havard Grip looks ahead at what could be an ambitious next flight.

Web Articles

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oScientists closer to settling the question: Why do some instruments detect methane on Mars while others don't?

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oEvergreen webpage about the Payload Accelerator for CubeSat Endeavors, or PACE, initiative's series of missions. The timing of the feature is tied to the launch of the first mission, PACE-1, on SpaceX's Transporter-2 rideshare mission.

·[TENTATIVE] 3:30 pm – NASA Launches First of Six Tiny Satellites to Keep a Near-constant Eye / Goddard

oNASA launched a test satellite or Pathfinder, ahead of a constellation of six small satellites that will work together to provide near hourly updates of hurricanes and tropical cyclones. Also tied to Transporter-2 rideshare launch.

·Endowing Satellite Swarms With a Hive Mind / Goddard

oUsing machine learning, swarms of SmallSats buzzing around Earth could coordinate amongst themselves to collect data on important weather patterns at different times of the day or year, and from multiple angles. Such swarms could revolutionize scientists' understanding of weather and climate changes.

·NASA Satellites See Climate-Driven Upper Atmosphere Cooling and Shrink / Goddard

oThe sky isn't falling, but scientists have found the upper atmosphere is gradually dropping in response to rising human-produced greenhouse gas emissions. Combined data from three NASA satellites have produced the first long-term record that reveals a particular layer of the atmosphere, the mesosphere, is both cooling and shrinking.

## Attachment

### 1. DAILY REPORT 06-29-2021.docx

Type: application/vnd.openxmlformats-officedocument.wordprocessingml.document  
Size: 45 KB (46,405 bytes)

**Attachment #1**

**DAILY REPORT 06-29-2021.docx**

**Original view**

3 pages (displayed on pages 7 to 9)

# NASA Communications Daily Report

Tuesday, June 29

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## ACTIVITIES

- 9 am – Sen. Nelson at Best Places to Work Event
- 9 am to 1 pm – CBS Sunday Morning News Interview at JPL on Drought in West
  - The interview will be with hydrologist JT Reager.
- 10:30 am – Sen. Nelson Interview with Bloomberg TV on commercialization
- 10:30 to 11 am – Phil McAlister, director of commercial spaceflight development, interview with AP's Marcia Dunn about the agency's efforts to grow a strong low-Earth orbit economy
- 11 am – Sen. Nelson records NASA Science Live video for Asteroid Day and KSC Indian River Bridge video
- 11 am to 1 pm – Kathy Lueders Artemis update to National Academy of Engineering
- 12:25 pm – Northrop Grumman CRS-15 Cygnus departure from International Space Station; live coverage on NASA TV begins at 12 pm.
- 2:00 pm – Sen. Nelson Interview with Discovery on UAP report
- 7:27 pm – Progress 78 launch from Baikonur Cosmodrome in Kazakhstan; live coverage on NASA TV begins at 7 pm
- Astronaut Mike Barratt for 16th Annual Space Life Sciences Summer Institute in Houston
- Launch of SpaceX Transporter-2 with NASA CubeSats
  - SpaceX Transporter-2 rideshare mission will launch from Cape Canaveral Space Force Station in Florida. Includes the TROPICS pathfinder CubeSat, as well as two technology demonstration missions – PACE-1, and TILE-3, that will fly on CubeSat platforms.
- Webb presentations at the European Astronomical Society
- Anniversary: Launch of first nuclear powered satellite (Transit 4A) (1961)

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## **DoD tagup topic update, 29 June 2021, 1430EST/1230MST**

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From: Plumb, Thomas J. (HQ-TA000) <thomas.j.plumb@nasa.gov>  
To: Kieffer, Margaret (HQ-TH000) <margaret.kieffer@nasa.gov>, Flynn, David T. (HQ-TH000) <david.flynn@nasa.gov>, Drew, Benjamin A. (HQ-TH000) <b.a.drew@nasa.gov>, Torres, Alfonso (HQ-TH000) <alfonso.torres@nasa.gov>  
Cc: Feldstein, Karen C. (HQ-TA000) <karen.c.feldstein@nasa.gov>, McKay, Meredith (HQ-TA000) <meredith.mckay@nasa.gov>, Cruz, Randy C. (HQ-AA000)[Affiliate] <randy.c.cruz@nasa.gov>, Plumb, Thomas J. (HQ-TA000) <thomas.j.plumb@nasa.gov>  
Sent: June 29, 2021 2:25:33 PM EDT  
Received: June 29, 2021 2:25:34 PM EDT

DoD tagup topic update, 29 June 2021, 1430EST/1230MST

Air Force-Space Force (DAF)-NASA-NRO Summit (AFNNS)

- SummitDate. Proposed Summit date is 19 August, before the Space Symposium (22-26 August)
- Plus One A Date. If required TBD 12-23 July
- Plus One B Date. TBD 2-12 August
- "Host" - NASA (Alvin leading); planning for in-person attendance at the Pentagon
- Topics. Could include:
  - Inclusion of a 30 min "principles only" session
  - AFNNS "charter", future structure
  - Decision-making agility (NRO)
  - Infrastructure (DAF)
  - Protect & Defend Strategy (DAF)
  - Cislunar (NASA)
  - Space Symposium messaging
  - Read-aheads on: On-orbit Servicing, Assembly, and Manufacturing (OSAM), Space Traffic Management

Decadal Survey's Panel on Small Solar System Bodies, 23 June

- USSF SpOC Chief Scientist Dr Mozer invited to brief capabilities to discover and mitigate hazardous objects in NEO and cislunar space, recognizing SSA/SDA areas of overlap in cislunar space
- Lots of interest and questions, including, "If a Chelyabinsk-sized asteroid was detected on an earth impact trajectory a few days out, does Space Force/Space Command have a determined role?" (the 2018 LA asteroid was discovered 8 hours prior to impacting Earth)

"A Primer on Cislunar Space", released by AFRL/SV

[https://www.afrl.af.mil/Portals/90/Documents/RV/A%20Primer%20on%20Cislunar%20Space\\_Dist%20A\\_PA2021-1271.pdf?ver=vs6e0sE4PuJ51QC-15DEfg%3d%3d](https://www.afrl.af.mil/Portals/90/Documents/RV/A%20Primer%20on%20Cislunar%20Space_Dist%20A_PA2021-1271.pdf?ver=vs6e0sE4PuJ51QC-15DEfg%3d%3d)  
<[https://gcc02.safelinks.protection.outlook.com/?url=https://www.afrl.af.mil/Portals/90/Documents/RV/A%20Primer%20on%20Cislunar%20Space\\_Dist%20A\\_PA2021-1271.pdf?ver=vs6e0sE4PuJ51QC-15DEfg%3d%3d&data=04|01|randy.c.cruz@nasa.gov|b0380e0eda9c409d499408d93b2b48a3|7005d45845be48ae8140d43da96dd17b|0|0|637605879346576054|Unknown|TWFPbGZsb3d8eyJWljoimc4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikl1haWwIiLCJXVCi6Mn0=|1000&sdata=HI9v8MYUyb6jHb+HyYrWmWJZwt5Rjjj2raY2jwnOln8=&reserved=0](https://gcc02.safelinks.protection.outlook.com/?url=https://www.afrl.af.mil/Portals/90/Documents/RV/A%20Primer%20on%20Cislunar%20Space_Dist%20A_PA2021-1271.pdf?ver=vs6e0sE4PuJ51QC-15DEfg%3d%3d&data=04|01|randy.c.cruz@nasa.gov|b0380e0eda9c409d499408d93b2b48a3|7005d45845be48ae8140d43da96dd17b|0|0|637605879346576054|Unknown|TWFPbGZsb3d8eyJWljoimc4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikl1haWwIiLCJXVCi6Mn0=|1000&sdata=HI9v8MYUyb6jHb+HyYrWmWJZwt5Rjjj2raY2jwnOln8=&reserved=0)>

36th Space Symposium, Broadmoor, Colorado Springs, 22 Aug (Sunday) - 26 August (Thursday)

- AT requested a DoD-focused activity proposal for Administrator and senior leadership visit Wednesday, 25 August (starting after a morning engagement). Proposal:

- Broadmoor to Peterson AFB: Space Command HQ, mission briefing and engagement discussion (available leadership dependent)

- Peterson AFB to Schriever AFB: Lunch, Space Force/Schriever ops briefing, NSDC brief/tour, SOPS brief/tour (among 1SOPS space-based SDA, 2SOPS GPS, 3rd Space Experimentation Squadron, 4SOPS SATCOM)

- A shorter visit could be just to Schriever

- Air Force Academy and Catalyst Campus visits are other visit options

- Gen Shaw had asked for short convo with Steve J, could consider Gen Shaw - Pam Melroy tag during symposium

UAP report release, Senator Nelson public comments

<https://thehill.com/policy/national-security/560507-nasa-administrator-on-ufo-report-i-dont-think-we-are-alone>  
<<https://gcc02.safelinks.protection.outlook.com/?url=https://thehill.com/policy/national-security/560507-nasa-administrator-on-ufo-report-i-dont-think-we-are-alone&data=04|01|randy.c.cruz@nasa.gov|b0380e0eda9c409d499408d93b2b48a3|7005d45845be48ae8140d43da96dd17b|0|0|637605879346585996|Unknown|TWFPbGZsb3d8eyJWljoimc4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikl1haWwIiLCJXVCi6Mn0=|1000&sdata=zaoiTc6huiXprVdJCo4hK0BIOQui/AS+yUTgg7/sXAs=&reserved=0>>

HEOMD DoD HSF support management:

AFSCN & NRO communications support to human spaceflight missions (POC SCaN John Hudiburg)

- Need AF Satellite Control Network-AFSCN support for crewed missions. (50SW MFR covered DM-2, Crew-1)

- AFSCN support for CCP/Artemis was requested by RFA to USSPACECOM (Chief of Staff)

- Space Command approved the RFA on a non-interference, reimbursable basis. Discussion with John Hudiburg, 15 June. NASA will ping SPACECOM POC Roger Kelly on reimbursable support (John to provide Tom with his technical POCs).

NASA-DoD HSFS "Summit", KSC, TBC 18-21 August

- Space Command Human Space Flight Support, Artemis Operational Planning Team meeting 16 August included

discussion

- NASA POCs EGS Melissa Jones/CCP Dana Hutcherson
- SPACECOM lead representative planned to be DJ3 Brig Gen Zellmann
- Topics: support for Artemis and CCP
- NASA HQ HEOMD involvement (Bowersox)

Air Mobility Command (AMC) reimbursable charges to CCP for C-17-related Air National Guard Military Personnel Appropriation (MPA) hours

- USSPACECOM updated CCP on TRANSCOM/AMC reimbursable charges, around \$300K charges per crew rotation
- After discussions, AMC won't charge for Crew-2 rotation but Crew-3 and follow-ons planned for charges. NASA asking for review of tasking and charges.
- NASA researching 7600 processes (SPACECOM, TRANSCOM, USAF AMC)

Mobility support for NASA MOA (with TRANSCOM, SPACECOM, USAF-AMC)

- USTRANSCOM drafted an MOA for Mobility support for NASA (general mobility support processes, requirement for 7600, no specific missions or charges in the MOA)
- POC for the MOA is Nado

HSFS Artemis requirements development over secure channels (POC Lark Howorth, JSC)

- Extension of 18SPCS SSN/conjunction support for ISS ops to Artemis profile
- Additional (b) (5)

Update to DoD Support to NASA Space Flight Operations (2005)?

Event dates: OFT-2 30 July, Crew 2/Crew 3 rotation October, CFT-1 end of 2021

Planetary Defense - NEO updates

- Space Surveillance Telescope (SST)

- Need (b) (5)

- Space Command passed their approval authority to S3/6Z review

- S3/6Z provided several packages of test data for MITLL to filter with SST methodology, in-work

- Need to develop data transfer from SST to demark in AUS, over commercial lines

- PDCO would like to propose (b) (5)

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- Lindley will tee up the request thru (b) (5)

- Public release of bolide light curves by USSF S3S. AFSPC/CD 2019 memo was on reviewing expedited and wide release of bolide events and releasing bolide light curves to the public. Bolide reporting made progress, light curves release had objections by AFTAC.

- Met with USSF S3S POC Corey Griffith/Craig Myers and Randy Longenbaugh for update/roadmap, 13 May, next discussion o/a 1 July

- S3S will request input to release, and hold in-person TEM (o/a July), then make recommendation to leadership.

- S3S requested historical light curve pdfs from Sandia (Jake Proctor, Randy L to execute, awaiting classification discussion)

- Fireball event notification. Automated processing nearing completion of initial SDL installation, with a stand-alone station and a unit-accessible web-based thin client version. PDCO engaging with SMC to determine POC and roadmap for approval on thin client access to unit.

- After development of processor installation and access approval, proceed with unit training and CONOPS development with Space Force for processing events, to include Delta 4 leadership (prior 460SW/CC Col Pepper is now USSPACECOM DJ5. Update Pepper and gauge USSPACECOM interest in public notifications. (Intern AJ is assisting in NASA public notification CONOPS)

Intern support to planetary defense efforts with Space Force/Space Command

- Exploring tweeting USG-sensor discovered bolide reports over @AsteroidWatch twitter account, and supporting Space Command tweets/re-tweets

- Tom engaging intern AJ Convertino and working with PDCO Kelly Fast, coordinating with Justin

Pillars Meeting, "International Engagement", 22 July, 13-17EST, TS-level

- Meeting announcement includes a NASA Perspective

Administratorcall with Space Force Chief of Space Operations (CSO) Gen Raymond, 9 June

- Collaboration follow up items: Rocket Cargo Vanguard concept; establishing a USSF-NASA fellowship program/bringing a USSF executive fellow in to work in A-Suite (a USSF Lt Col). Initial POC Nick Hague.

JTF-SD J9 "Civil-Mil Affairs" bi-weekly tag ups, last in-person tag ups 17 June

- J9 chief Major Nick Snyder (+ Kevin O'Rourke)

- Planning unclass TEM (TBC July) with topic brief: JTF-SD Commercial Operations (JCO)

- Considering in-person TEM at NSDC (TBC Fall)

- Topics: CONOPs development, training, exercises, contact procedures, clearances, personnel at NSDC, TDRS ephemeris in JCO, Artemis support

USSPACECOM - NASA partnership engagement and agreements review

- Partnership strategic vector

- A partnership non-binding MOU was drafted, NASA indicated to Space Command that consideration of the MOU is on hold

- Senior leadership discussion, priorities vector, TBD

- Cooperation overview paper/briefing; topic/contact list

- Operations enhancement with potential binding MOAs (planetary defense / extended SDA; spaceflight safety/conjunctions, HSFS, cislunar ops planning)

- SPACECOM J53 (Strategic Engagements) working effort with Commander Technical Advisor office (Marcus Shaw, Aerospace). Discussions with OIIR have occurred. SPACECOM will raise roadmap to leadership, J5, COS, DCOM, to formalize desired work areas and effort level. Marcus Shaw may raise preliminary plans with Gen Shaw in his scheduled meetings.

Schriever Wargame 2021 (SW21) (all planning and Capstone to be virtual, as of 8 March)

- Commercial and Civil Workshop (OOB / toolkit), 9-10 February, classified virtual (Paul Konyha, JSC; Jay Pittman GSFC), positive feedback on value of participation. Debriefed with OIIR, 9 March.

- Scenario tracking/input.

- Capstone Part 1. Action Officer planning session, COA brief for Part 2. 5 days in August (TBD)

- Capstone Part 2. Coalition Council, decide on COA. Two 3-hour sessions, 7-8 September.

- Capstone Part 3. Action Officer discussions, moves, adjudication. 3 Days, 13-15 September.

- Capstone Part 4. Coalition Council, adjudication brief, last day is senior outbrief. Two 3-hour sessions, 28-29 September.

## ARTICLES

Report: Space Force has to prepare for operations beyond Earth's orbit

by Sandra Erwin <<https://gcc02.safelinks.protection.outlook.com/?url=https://spacenews.com/author/sandra-erwin/&data=04|01|randy.c.cruz@nasa.gov|b0380e0eda9c409d499408d93b2b48a3|7005d45845be48ae8140d43da96dd17b|0|0|637605879346595966|Unknown|TWfPbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQljojV2luMzliLCJBTiI6Ik1haWwiLCJXVCI6Mn0=|1000&sdata=HN0L4O+AqVRg/32d6/bolVztysRY7xs2ai1NLjLBZfw=&reserved=0>> — June 23, 2021

<https://spacenews.com/report-space-force-has-to-prepare-for-operations-beyond-earths-orbit/>

<[https://gcc02.safelinks.protection.outlook.com/?url=https://spacenews.com/report-space-force-has-to-prepare-for-](https://gcc02.safelinks.protection.outlook.com/?url=https://spacenews.com/report-space-force-has-to-prepare-for-operations-beyond-earths-orbit/)

operations-beyond-earths-

orbit/&data=04|01|randy.c.cruz@nasa.gov|b0380e0eda9c409d499408d93b2b48a3|7005d45845be48ae8140d43da96dd17b|0|0|637605879346595966|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikl1haWwiLCJXVCi6Mn0=|1000&sdata=8c6xKU4deqczuXuBxGLThdvxsUby29Klww749MXv11w=&reserved=0>

“A Primer on cislunar space” - AFRL/SV

[https://www.afrl.af.mil/Portals/90/Documents/RV/A%20Primer%20on%20Cislunar%20Space\\_Dist%20A\\_PA2021-1271.pdf?ver=vs6e0sE4PuJ51QC-15DEfg%3d%3d](https://www.afrl.af.mil/Portals/90/Documents/RV/A%20Primer%20on%20Cislunar%20Space_Dist%20A_PA2021-1271.pdf?ver=vs6e0sE4PuJ51QC-15DEfg%3d%3d)

<[https://gcc02.safelinks.protection.outlook.com/?url=https://www.afrl.af.mil/Portals/90/Documents/RV/A%20Primer%20on%20Cislunar%20Space\\_Dist%20A\\_PA2021-1271.pdf?ver=vs6e0sE4PuJ51QC-15DEfg%3d%3d&data=04|01|randy.c.cruz@nasa.gov|b0380e0eda9c409d499408d93b2b48a3|7005d45845be48ae8140d43da96dd17b|0|0|637605879346605922|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikl1haWwiLCJXVCi6Mn0=|1000&sdata=ZbuDY/ydwBD6E8MKk+1qb1e9U5jVj+FkxIOck8wNC2Q=&reserved=0](https://gcc02.safelinks.protection.outlook.com/?url=https://www.afrl.af.mil/Portals/90/Documents/RV/A%20Primer%20on%20Cislunar%20Space_Dist%20A_PA2021-1271.pdf?ver=vs6e0sE4PuJ51QC-15DEfg%3d%3d&data=04|01|randy.c.cruz@nasa.gov|b0380e0eda9c409d499408d93b2b48a3|7005d45845be48ae8140d43da96dd17b|0|0|637605879346605922|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikl1haWwiLCJXVCi6Mn0=|1000&sdata=ZbuDY/ydwBD6E8MKk+1qb1e9U5jVj+FkxIOck8wNC2Q=&reserved=0)>

Washington Times

<<https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021062402nasa&r=email-cf10&l=005-99c&t=c&data=04|01|randy.c.cruz@nasa.gov|b0380e0eda9c409d499408d93b2b48a3|7005d45845be48ae8140d43da96dd17b|0|0|637605879346605922|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikl1haWwiLCJXVCi6Mn0=|1000&sdata=KRCun6+qyWBex0JQ62czyyhJ19Ub1FEANL7VyZdMWZA=&reserved=0>>

(6/23, Gertz) “U.S. military space forces are preparing to defend systems beyond Earth’s orbit in areas extending to the moon and beyond, according to a report by the Air Force Research Laboratory. Defending cislunar space — the volume of space outside of geosynchronous Earth orbit and within the moon’s gravitational pull — is outlined in a memorandum of understanding between the Space Force and NASA. The report was made public this week after China and Russia announced plans for a joint international research station to be built on the moon.”

Space National Guard Proposal Headed to Congress Soon, Top Leaders Say

(Military.com, 22 Jun 21) ... Oriana Pawlyk

"We've done the report; it's complete. It's all through coordination; it's waiting for a final briefing," Chief of Space Operations Gen. John Raymond told lawmakers. Acting Air Force Secretary John Roth added that the report is with leadership within the Office of the Secretary of Defense and soon will be submitted to the Office of Management and Budget before congressional committees receive the final study. "We've been operating with the Guard for 25 years. It provides critical capability, both people-wise and equipment-wise," Raymond said. "We can't do our job without them today, and we can't do our job in the future without them."

Space War, Like the Cold War, Is All Risk, No Reward

(Air Force Magazine, 22 Jun 21) ... Amanda Miller

Two officials with the Air Force Research Laboratory shared their vision during the Defense One Tech Summit on June 22: Col. Eric J. Felt, director of AFRL’s Space Vehicles Directorate, and Kelly D. Hammett, director of its Directed Energy Directorate. The two described a future where deterrence and “unattributable” attacks are the norm, much like the cat-and-mouse days of the Cold War when the United States and Soviet Union competed but simultaneously sought to avoid all-out nuclear war.

Space Development Agency to launch five satellites aboard SpaceX rideshare

(Space News, 22 Jun 21) ... Sandra Erwin

The U.S. Space Development Agency has five satellites riding on SpaceX’s Transporter-2 rideshare mission scheduled to launch June 25.

Army, Navy Satellite Operations To Consolidate Under Space Force

By: Sandra Erwin

Space News

23 June 2021

The U.S. Space Force later this year will begin to take over the operation of 11 Navy narrowband communications satellites. It also will absorb Army units that currently operate military communications payloads, a Space Force official said June 23.

The transition, scheduled to begin in October, will create a more integrated U.S. military satcom enterprise which for decades has “largely been a loose federation,” said Col. Matthew Holston, commander of Space Delta 8 at Schriever Air Force Base, Colorado.

Holston spoke about the upcoming reorganization at the SMi MilSatCom USA virtual conference.

Space Delta 8 operates communications and Global Positioning System (GPS) satellites from Schriever and from Vandenberg Space Force Base, California.

With 635 personnel, Space Delta 8 operates 66 satellites: 37 GPS, six Advanced EHF communications, five Milstar, two Enhanced Polar System hosted payloads, 10 Wideband Global Satcom (WGS) and six Defense Satellite Communications System (DSCS).

The operation of the Navy’s 11 narrowband communications satellites will move to Space Delta 8. That includes a mix of Mobile User Objective System (MUOS), Ultra High Frequency Follow-On (UFO) and FLTSATCOM UHF satellites.

Space Delta 8 also will absorb three Navy satellite control antennas and ground control stations at Prospect Harbor, Maine; Laguna Peak, California; and Finegayan, Guam.

Transitioning from the Army are two units that currently are part of the Army’s satellite operations brigade: The 53rd Signal Battalion and the SATCOM Directorate.

The 53rd Signal Battalion is the only U.S. military unit that controls the payloads of the WGS and DSCS communication constellations.

The SATCOM Directorate supports wideband and narrowband services for U.S. Space Command, and oversees international partner satcom agreements.

The consolidation of units is “really an opportunity from a space segment perspective as well as a resource management perspective to start moving towards an integrated satcom enterprise,” Holston said.

Army and Navy satellite operators will not be obligated to move over to the Space Force but can voluntarily transfer.

“We’re working with both our partners in the Army and the Navy to do the service transfers associated with that,” said Holston.

He said this is one step toward accomplishing the Space Force’s vision of an integrated satcom enterprise of military and commercial systems.

That strategy was laid out in the “United States Space Force Vision for Satellite Communications,” which was approved by Chief of Space Operations Gen. John Raymond in January 2020.

Raymond directed the Space Force to figure out how to integrate military and commercial satcom systems so users can roam between networks the way consumer cell phones switch between providers when they travel from one country to another.

Holston said the integration of commercial systems, including space internet services in low Earth orbit, is being handled by the Space Force's acquisition organization, the Space and Missile Systems Center.

"I think those discussions are certainly ongoing," he said. "If you look at the enterprise satcom vision, we certainly want to partner across what is available across different orbital regimes."

US Report Can't Explain UFOs, But Says They're Likely Real and Possibly a National Security Threat

(Military.com, 25 Jun 21) ... Stephen Losey

Many unidentified flying objects observed by the military and other government sources since 2004 probably actually exist and may pose a threat to national security, according to an intelligence report released Friday. Government sources originated 144 reports of unidentified aerial phenomena, or UAPs, the term the government now uses to describe objects popularly referred to as UFOs. Many incidents were witnessed firsthand by military aviators and observed by reliable sensor systems, the report adds.

UAPs largely remain a mystery. Aside from one that was identified as a large, deflating balloon, the government can't explain what they are. The report gives no indication the UAPs' origins are extraterrestrial. But whatever they are and wherever they're from, the intelligence community says they exist -- and should be taken seriously.

"UAP clearly pose a safety of flight issue and may pose a challenge to U.S. national security," states the report from the Director of National Intelligence, or DNI, titled "Preliminary Assessment: Unidentified Aerial Phenomena." "Safety concerns primarily center on aviators contending with an increasingly cluttered air domain. UAP would also represent a national security challenge if they are foreign adversary collection platforms or provide evidence a potential adversary has developed either a breakthrough or disruptive technology."

The Pentagon announced Friday afternoon that Deputy Secretary of Defense Kathleen Hicks has ordered the military to draw up a plan to formalize the mission now performed by the Unidentified Aerial Phenomena Task Force. Hicks said that military aircrews and other personnel need to speak up when they see UAPs. "It is critical that the United States maintain operations security and safety at DoD ranges," she wrote in a memo released Friday by the Pentagon. "To this end, it is equally critical that all U.S. military aircrews or government personnel report whenever aircraft or other devices interfere with military training. This includes the observation and reporting of UAPs."

The DNI report states that 80 of the UFOs observed were tracked across multiple sensors, including radar, infrared, electro-optical sensors and weapon seekers, as well as visual observation. For that reason, the report concluded that most of the observed UFOs probably were actual physical objects. In a few cases, the UAPs showed unusual flight characteristics, the report found, such as appearing to remain stationary in the air, moving against the wind, abruptly maneuvering, or traveling at considerable speed without any observable propulsion. The DNI said this could be the result of sensor errors, spoofing or observers misperceiving what was happening; it added that the issue needs further study.

In a handful of cases, military aircraft systems observed radio frequency energy alongside UAP sightings. Reported UAP sightings tended to cluster around U.S. training and testing grounds, the report states, but that may be because there are more advanced sensors there and greater attention by personnel. There is probably no single explanation for what UAPs are, the report concluded. They could be as mundane as airborne clutter such as birds, balloons and recreational drones, or airborne debris like plastic bags. They could also be natural atmospheric phenomena such as



ice crystals and moisture registering on some infrared and radar systems, the report states.

They also could be technology deployed by potential adversary nations such as China or Russia, or non-governmental entities. The report acknowledges that some UAPs could be classified programs run by U.S. agencies, but said this could not be confirmed. When it passed the fiscal 2021 Intelligence Authorization Act, Congress ordered the DNI and Pentagon to produce a report on the threat posed by UAPs and what progress the Defense Department's task force has made in understanding that threat.

### Space Force Adds University of Colorado to Upcoming Partnership Program

(Air Force Magazine, 25 Jun 21) ... Amanda Miller

The Space Force's No. 2 officer inspected the aerospace research facilities of its newest university partner June 24 under a program designed to help it recruit personnel with more technical expertise. Vice Chief of Space Operations Gen. David D. Thompson and Mark Kennedy, president of the University of Colorado system, agreed in principle that the university system will become part of the Space Force's University Partnership Program. The system includes, in part, its flagship campus in the aerospace research and industry hub of Boulder, plus a campus in the national security space hub of Colorado Springs. Kennedy said he's "thrilled" that the University Partnership Program will involve both workforce development and research development as CU Boulder is one of the highest-funded public aerospace research institutions in the U.S.

When the full list is announced, each of the program's cadre of aerospace research institutions will also be noteworthy in terms of already having "an incredibly strong officer development platform" in its Reserve Officer Training Corps detachment, Thompson said. Thompson told reporters that about 10 universities have agreed to come onboard and he expects the program to kick off with formal agreements in place this fall. "It is really a change in the way we do business," Thompson said. Starting over as a new service means the Space Force gets to ask itself, "What do we need to do differently that suits our needs, our challenges, in the 21st century workforce?" he said.

Faculty provided tours of their labs in the university's Department of Aerospace Engineering Sciences, including its space domain awareness laboratory where students were actively tracking objects in orbit and its design-build-fly cubesat laboratory that lets students do all three by the time they graduate. Overviews of research included human-machine teaming for space surveillance. Thompson said the Space Force has spent "a better part of the last year reaching out to universities, making sure they understand our goals and visions [and] ... agreeing that we want to pursue it."

He said the service realized that it needed to adapt its approach to education and training to meet its particular needs, which are "very, very focused and very, very high-tech ... to be able to operate successfully in an incredibly complex physical and technical domain." "In many cases in the past, we haven't required it," Thompson said, referring to a focus on high-tech skills in the workforce. "We have counted on what universities have provided. We've hired engineering and consulting firms and what we call federally funded research and development corporations to provide that deep technical expertise." Workforce development for civilian personnel, in particular, has lagged behind.

Probably the largest and heaviest lift for us is we're going to be about 50 percent civilian workforce—government civilians" for whom job expectations and requirements "have not kept pace with what we do for military members," Thompson said. His former aide-de-camp helped to shape the idea for partnering with universities. "My previous aide-de-camp was an African American, and—demonstrating the bold leaders we expect in the Space Force," Thompson emphasized, seemingly for the benefit of the cadets present, "he came into my office one day, and he said, 'Gen. Thompson, first of all, do you know the No. 1 producer of African-American engineers in the nation?' And I said, 'No.' "He said, 'Let me tell you about that school.'"

That advice led to North Carolina Agricultural and Technical State University becoming the first to agree to a

partnership. Thompson said “perhaps one day” the Space Force will have a dedicated ROTC detachment but that for now, Space Force will focus on the Air Force ROTC detachments at partner universities “to coalesce and bring, I’ll call it, mass, to that.”

Thomas Plumb

NASA Liaison - Peterson AFB, CO

Space Force Space Command NORAD/USNORTHCOM

C (b) (6) Thomas.j.plumb@nasa.gov

O 719.554.4900 (currently in telework status)

## FW: UAP Briefing

---

From: STOVALL, SHERICE L. (HQ-TA000) <sherice.l.stovall@nasa.gov>  
To: Cruz, Randy C. (HQ-AA000)[Affiliate] <randy.c.cruz@nasa.gov>  
Sent: September 28, 2020 8:41:55 AM EDT  
Received: September 28, 2020 8:41:58 AM EDT

Hi Randy,

Are you available on Thursday, 10-11 am for a classified Unidentified Aerial Phenomena Task Force briefing? The Administrator requested that an invitation be extended to you and Gabe Sherman.

<https://www.defense.gov/Newsroom/Releases/Release/Article/2314065/establishment-of-unidentified-aerial-phenomena-task-force/>

Take care,

Sherice

From: Thomas, Camden D. (HQ-AA000) <camden.d.thomas@nasa.gov>  
Sent: Monday, September 28, 2020 8:22 AM  
To: STOVALL, SHERICE L. (HQ-TA000) <sherice.l.stovall@nasa.gov>  
Subject: RE: UAP Briefing

Hi Sherice,

Would Thursday from 10-11 eastern work? The Administrator has also requested that Gabe Sherman and Randy Cruz be invited.

Thank you!

Cam Thomas

Executive Assistant

Office of the Administrator

NASA HQ

Camden.d.thomas@nasa.gov

From: STOVALL, SHERICE L. (HQ-TA000) <sherice.l.stovall@nasa.gov>  
Sent: Monday, September 28, 2020 7:59 AM  
To: Thomas, Camden D. (HQ-AA000) <camden.d.thomas@nasa.gov>  
Subject: UAP Briefing

Hi Cam,

Mike wants to setup a 1-hour classified Unidentified Aerial Phenomena Task Force briefing this week since the Administrator is in town. Can you send me his availability for this week? Thanks!

Sherice L. Stovall

Office of International & Interagency Relations (OIIR)

NASA HQ – Washington D.C.

Email: [sherice.l.stovall@nasa.gov](mailto:sherice.l.stovall@nasa.gov)

Phone: (b) (6)

Teleworking M-F, 8 AM – 5 PM EDT

Offline daily 12 – 1 PM EDT

"The single biggest problem in communication is the illusion that it has taken place." - George Bernard Shaw

## FW: UAP Report

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From: Cruz, Randy C. (HQ-AA000)[Affiliate] </O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=FE606AD0FF7A47E09D3C9543390219 F5-CRUZ, RANDY>  
To: Feldstein, Karen C. (HQ-TA000) <karen.c.feldstein@nasa.gov>, Kieffer, Margaret (HQ-TH000) <margaret.kieffer@nasa.gov>, Meidinger, Jolene A. (HQ-TH000) <jolene.meidinger@nasa.gov>  
Sent: June 25, 2021 10:15:12 AM EDT  
Received: June 25, 2021 10:15:00 AM EDT

I am happy to forward the info Jolene and I have received from the UAPTF. Let me know.

V/r,

Randy

From: Etkind, Marc R. (HQ-NA000) <marc.r.etkind@nasa.gov>  
Sent: Friday, June 25, 2021 10:09 AM  
To: Cruz, Randy C. (HQ-AA000)[Affiliate] <randy.c.cruz@nasa.gov>  
Cc: McGuinness, Jackie (HQ-NA000) <jackie.mcguinness@nasa.gov>  
Subject: UAP Report

Hi Randy. With the UAP report coming out today, the Administrator would like some background on NASA involvement in the report. I understand our involvement was minimal and that this is a DOD report. That said. Any chance I can get some quick facts we can give him, including timing of our input and areas of discussion. Lmk if phone is easier. Thanks.

## FW: UAP Report

---

From: Cruz, Randy C. (HQ-AA000)[Affiliate] </O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=FE606AD0FF7A47E09D3C9543390219 F5-CRUZ, RANDY>  
To: Massey, Natalie (HQ-AB000) <natalie.massey@nasa.gov>, Chance, Lorenzo V. (HQ-LP022) <lorenzo.v.chance@nasa.gov>  
Sent: June 25, 2021 3:41:58 PM EDT  
Received: June 25, 2021 3:41:00 PM EDT

Heads up- looking like 4:30

From: Etkind, Marc R. (HQ-NA000) <marc.r.etkind@nasa.gov>  
Sent: Friday, June 25, 2021 3:33 PM  
To: Cruz, Randy C. (HQ-AA000)[Affiliate] <randy.c.cruz@nasa.gov>  
Cc: McGuinness, Jackie (HQ-NA000) <jackie.mcguinness@nasa.gov>; Lal, Bhavya (HQ-AA000) <bhavya.lal@nasa.gov>  
Subject: Re: UAP Report

And looking like 430.

On: 25 June 2021 12:32, "Etkind, Marc R. (HQ-NA000)" <marc.r.etkind@nasa.gov> wrote:

Thanks Randy. Adding Bhavya to see if she can join.

On: 25 June 2021 12:21, "Cruz, Randy C. (HQ-AA000)[Affiliate]" <randy.c.cruz@nasa.gov> wrote:

Scheduled the 6th floor SCIF at 4:15 with the Administrator and Margaret Kieffer to answer any questions he has.

Randy

From: Etkind, Marc R. (HQ-NA000) <marc.r.etkind@nasa.gov>  
Sent: Friday, June 25, 2021 10:30 AM  
To: McGuinness, Jackie (HQ-NA000) <jackie.mcguinness@nasa.gov>; Cruz, Randy C. (HQ-AA000)[Affiliate] <randy.c.cruz@nasa.gov>  
Subject: Re: UAP Report

Will find a time to call you. In the next hour.

On: 25 June 2021 10:21, "McGuinness, Jackie (HQ-NA000)" <jackie.mcguinness@nasa.gov> wrote:

Hey Randy - if possible, would you mind providing some details before 11:30am? Nelson is doing a Washington Post interview at noon and it would be helpful for him to have a clearer understanding ahead of that.

Thank you!

Get Outlook for iOS

<<https://gcc02.safelinks.protection.outlook.com/?url=https://aka.ms/o0ukef&data=04|01|randy.c.cruz@nasa.gov|365c7c4a8a474f82ccb608d9381017a4|7005d45845be48ae8140d43da96dd17b|0|0|637602464038459476|Unknown|TWFPbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQljojV2luMzliLCJBTiI6lk1haWwiLCJXVCi6Mn0=|1000&sdata=0Jq7uevOg2aX9hsRx85/niuElcEy523RB727HNR0z00=&reserved=0>>

From: Etkind, Marc R. (HQ-NA000) <marc.r.etkind@nasa.gov>  
Sent: Friday, June 25, 2021 10:09:18 AM  
To: Cruz, Randy C. (HQ-AA000)[Affiliate] <randy.c.cruz@nasa.gov>  
Cc: McGuinness, Jackie (HQ-NA000) <jackie.mcguinness@nasa.gov>  
Subject: UAP Report

Hi Randy. With the UAP report coming out today, the Administrator would like some background on NASA involvement in the report. I understand our involvement was minimal and that this is a DOD report. That said. Any chance I can get some quick facts we can give him, including timing of our input and areas of discussion. Lmk if phone is easier.  
Thanks.

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To: Feldstein, Karen C. (HQ-TA000) <karen.c.feldstein@nasa.gov>, Kieffer, Margaret (HQ-TH000) <margaret.kieffer@nasa.gov>, Meidinger, Jolene A. (HQ-TH000) <jolene.meidinger@nasa.gov>  
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V/r,

Randy

From: Etkind, Marc R. (HQ-NA000) <marc.r.etkind@nasa.gov>  
Sent: Friday, June 25, 2021 10:09 AM  
To: Cruz, Randy C. (HQ-AA000)[Affiliate] <randy.c.cruz@nasa.gov>  
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Subject: UAP Report

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**FW: UAPA Virtual Event with Robert Powell, “Extreme Acceleration by UAPs”, introduction by Chris Mellon, Tue, Oct 6, 3-4pm EST**

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From: Gold, Michael N. (HQ-AA000) <michael.n.gold@nasa.gov>  
To: Cruz, Randy C. (HQ-AA000)[Affiliate] <randy.c.cruz@nasa.gov>  
Sent: October 6, 2020 2:44:01 PM EDT  
Received: October 6, 2020 2:44:02 PM EDT

Hey Randy, I just got this but FYI if you're interested in attending...

From: Rich Coleman <(b) (6)>  
Sent: Tuesday, October 6, 2020 2:27 PM  
To: Gold, Michael N. (HQ-AA000) <michael.n.gold@nasa.gov>; Gold Mike <(b) (6)>  
Subject: [EXTERNAL] UAPA Virtual Event with Robert Powell, “Extreme Acceleration by UAPs”, introduction by Chris Mellon, Tue, Oct 6, 3-4pm EST

Dear UAPA Colleague:

Please join us on Tuesday, October 6th from 3-4pm EST for an Unidentified Aerial Phenomena Association virtual event with Robert Powell, Executive Board member of the Scientific Coalition for UAP Studies (SCU).

We will be joined by Chris Mellon, former Deputy Assistant Secretary of Defense for Intelligence, who will be delivering introductory remarks.

During our session, Robert will be discussing “Extreme Acceleration by UAPs and Sensors for Detection”. He will also be exploring a few relevant cases, including Stephenville and Puerto Rico. Robert has been an important leader, for some years now, among those seeking to bring serious scientific expertise and processes to bear on the UAP phenomenon.

All our friends in propulsion will not want to miss this one!

If this UAPA Virtual Event is not a priority for you, please forward this invitation to colleagues in your company, or other colleagues, who would find this of interest.

A Q&A session will follow the presentation. Please find full bios at the end of this email.

As always with our telecons and small group meetings, this session is off the record and Chatham House rules.

To join the meeting, please use the Teams link below.

UAPA Virtual Event w/ Robert Powell, Tue, Oct 6, 3-4pm EST (b) (2)

[Redacted content]

Please RSVP directly to this email.

We hope you find this of interest!

Best regards,

Rich and Ali

Richard Coleman

President

Alexandra Hale

Vice President

Unidentified Aerial Phenomena Association

Email: (b) (6)

Mobile: (b) (6)

Event ID: (b) (2)

Robert Powell has a BS in Chemistry and is a former collegiate debater. He has 28 years experience in engineering management in the semiconductor industry. While working at Advanced Micro Devices he has taken numerous internal courses related to device physics, design of experiments, and statistical analysis. He helped Advanced Micro Devices develop its first flash memory technology that is used in today's flash cards for cameras, PCs, video cameras, and other products. His experience includes managing a state-of-the-art chemistry laboratory and managing a Research and Development group that worked on nanotechnology using atomic force microscopes, near-field optical microscopy, and other techniques. Robert is also a co-holder of four patents related to nanotechnology. Robert Powell has been the Director of Research at MUFON from 2007-2017 and created MUFON's Science Review Board in 2012. He is one of two authors of the detailed radar/witness report on the "Stephenville Lights" as well as the SCU report "UAP: 2013 Aguadilla, Puerto Rico". Robert is also a member of the Society for Scientific Exploration, the UFODATA project, and the National Space Society. Robert is active with FOIA requests to various government organizations to obtain information on historical cases and is a co-author of a book published in July 2012: UFOs and Government: A Historical Inquiry. Robert currently resides in Austin, Texas.

A descendant of the founder of the Mellon Bank, Chris Mellon served as the Deputy Assistant Secretary of Defense for Intelligence during the Bill Clinton and George W. Bush administrations. For over a dozen years, Chris worked on national security issues on Capitol Hill, including many years on the Senate Intelligence Committee, where he ultimately served as the Minority Staff Director. Chris is the team's government liaison, using his access and relationships with high-level officials to prompt the government to take action on what he believes is a serious threat to national security.

<https://www.defense.gov/Newsroom/Releases/Release/Article/2314065/establishment-of-unidentified-aerial-phenomena-task-force/>

<https://www.defense.gov/Newsroom/Releases/Release/Article/2314065/establishment-of-unidentified-aerial-phenomena-task-force/>

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## **NASA INTERVIEW PREP DOCUMENT - as of 5-28-21 (internal distribution only)**

From: Beutel, Allard (HQ-NA020) <allard.beutel@nasa.gov>  
Sent: May 29, 2021 10:56:57 AM EDT  
Received: May 29, 2021 10:57:36 AM EDT  
Attachments: NASA INTERVIEW PREP DOCUMENT - as of 5-28-21.docx

Morning, attached is the latest interview prep document. The top four items are new:

- Fiscal Year 2022 NASA Full Budget Proposal
- Earth System Observatory
- Hurricanes and NASA
- Search for Life, Technosignatures, and UAP/UFOs

The upcoming events public dates section is update.

-Allard



## Attachment

### 1. NASA INTERVIEW PREP DOCUMENT - as of 5-28-21.docx

Type: application/vnd.openxmlformats-officedocument.wordprocessingml.document  
Size: 59 KB (60,644 bytes)

**Attachment #1**

**NASA INTERVIEW PREP DOCUMENT - as of 5-28-21.docx**

**Original view**

13 pages (displayed on pages 4 to 16)



**INTERNAL DISTRIBUTION ONLY**  
Updated 5/28/21

**NASA INTERVIEW PREP DOCUMENT**

**RECENT HOT TOPICS**

**Fiscal Year 2022 NASA Full Budget Proposal**

*On May 28, the Biden-Harris Administration released the full budget proposal for Fiscal Year 2022.*

- President's Fiscal Year 2022 budget requests \$24.8 billion for NASA, an increase of more than 6% over what the agency received the previous year.

**Overarching Points**

- This funding request demonstrates the president's commitment to NASA and the people across the agency and its partners who have worked so hard this past year under the most difficult circumstances and achieved unprecedented success.
- The NASA workforce and the American people should be encouraged by what they see in this budget request. It is an investment in our future, and it shows confidence in what this agency has to offer. We owe it to the president and the American people to be good and responsible stewards of every tax dollar invested in NASA.
- This budget request includes the strongest NASA budget ever for science, which will help address the climate crisis at home and abroad, as well as advance robotic missions that will pave the way for astronauts to explore the Moon and Mars.
- This is also the strongest budget for exploration since the Apollo program.
- This budget request will restore America's global standing, promote racial and economic equity, and drive economic growth.

**Supports Human Exploration of the Moon, Mars, and Beyond**

- The president's funding request increases funding for Artemis by \$350 million and gives us the resources to advance America's bipartisan Moon to Mars space exploration plan, agreed to by the Administration and Congress.
- This request keeps us on the path toward a regular cadence of Artemis missions with crew to the Moon by the middle of the decade.
- NASA's human landing system contract award, with the goal of a human demonstration mission to the lunar surface by 2024, is under protest.
- NASA is currently reviewing the overall Artemis timeline based on appropriations and expected budget, and outcome of the human landing system protest. We hope to provide an updated Artemis timeline later this year following conclusion of the protest.
- The FY2022 budget request assumes an Artemis I launch no earlier than November 2021, an Artemis II launch no earlier than September 2023, followed by Artemis III targeted for late 2024 and Artemis IV for late 2025. Landing the first woman and first person of color on the lunar surface as part of the Artemis program will promote equity – signaling to every American they too can see themselves among the stars.
- With NASA's Space Launch System rocket and Orion spacecraft, as well as U.S. commercial partnerships with the human landing system and Gateway lunar outpost, we will send astronauts to the Moon to test technologies and exploration practices that will make future missions more productive than ever before.
- This budget funds an upgraded Space Launch System, known as Block1B, that can deliver larger cargos to lunar orbit.

**Quick Reference**

[Upcoming Events](#)  
[Public Dates](#)



## INTERNAL DISTRIBUTION ONLY

Updated 5/28/21

- Gateway, built with our commercial and international partners, is important to sustainable lunar operations.
  - The foundation of our lunar outpost is targeted to launch no earlier than November 2024, with additional modules from our international partners launching later.
- We are working day and night to reduce risks and overcome the challenges of long-term human exploration of the Moon and Mars.
- The budget funds early design work and planning for additional surface architecture necessary including the lunar terrain vehicle and surface habitats to ensure our astronauts can explore more of the Moon than ever before and stay for increasingly longer periods of time in deep space.
- NASA's Lunar Surface Innovation Initiative is advancing technologies to support mission operations on the Moon. This budget includes funding for the preliminary design of a fission surface power system that could power operations on the Moon and Mars.

### Further Robotic Exploration of the Solar System and the Universe

- This funding request also furthers robotic exploration of the solar system and the universe.
- The budget provides more than \$650 million for the Mars Sample Return mission, the highest priority large mission in planetary science.
- It includes strong support for planetary defense, including the near-Earth objects (NEO) Surveyor mission to detect asteroids and comets that could potentially impact Earth.

### Enhances Research and Development at NASA

- This funding request supports continued progress developing cutting-edge space technologies, transformative capabilities, and renewable energy, all of which feed the economy and create good paying American jobs.
- Investing in new technologies enhances NASA's missions and fosters the growing space economy.
- NASA routinely demonstrates new technologies, reducing overall risk and encouraging industry adoption. The budget includes \$500 million for technology demonstrations.
- It fully funds the On-orbit Servicing, Assembly, and Manufacturing 1 (OSAM-1) mission. Robotically refueling a satellite and manufacturing and assembling spacecraft parts in-orbit will foster a more sustainable space economy.
- Launching next month, our Laser Communications Relay Demonstration will demonstrate a technology that can provide 10-100 times better data rates than commonly used radio frequency communications systems. In the coming years, we'll further refine laser communications technology for use in deep space.
- More than \$280 million would be directed toward small business innovation research and technology transfer. The increase of \$60 million will provide more money to small companies to research new ideas and develop innovative solutions to challenging problems.
- An investment in NASA and space infrastructure reaffirms our nation is the world's premier partner in space collaboration, and we will be for decades to come.
- We are investing in aviation to make our skies safer, our fuels cleaner, and to get you to your destination faster than ever before. This also includes investing in next-generation



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aeronautics research that will safely integrate automated aircraft systems with piloted airplanes.

- This budget enhances American competitiveness in the global aviation industry including the first two flights of new X-57 and X-59 aircraft.
- NASA aeronautics is leading transformation of the way people and goods are moved through Advanced Air Mobility (air taxis, drone cargo deliveries, etc.), an emerging market expected to be worth \$115 billion a year by 2035.
  - It will help safely deliver revolutionary aviation capabilities to previously underserved local, regional, intraregional, and urban areas. NASA investments today will spur the advancements of tomorrow.
- The budget provides a \$30 million increase to accelerate transformative science at the frontiers of biological and physical sciences research in space.

### Advances Climate Science

- Climate change has increasing economic and national security impacts, and this budget increases investments in climate research and science programs.
- This funding increases our ability to better understand Earth and how it works as an integrated system, from our oceans to our atmosphere and how it all impacts our daily lives.
- NASA is developing the next-generation Earth System Observatory. NASA's new Earth System Observatory will provide the world with an unprecedented understanding of our Earth's climate system, arming us with next-generation data critical to mitigating climate change, and protecting our communities in the face of natural hazards.
  - The Earth System Observatory will help improve our understanding of extreme weather events and our decision making on climate resilience, adaptation, and mitigation. It will also inform decisions that ensure communities have the resources they need to build resilience prior to these crises.
- Research on zero-emissions aviation
  - NASA Aeronautics is partnering with industry, academia and other agencies through the Sustainable Flight National Partnership to accomplish the aviation community's aggressive climate change agenda. Through advanced vehicle technologies, efficient airline operations and sustainable aviation fuels, collectively NASA and our federal government and industry partners aim to reduce carbon emissions from aviation by half by 2050, compared to 2005, and achieve net-zero emissions by 2060.
- NASA continues to lead the development of new small spacecraft capabilities. For example, small platforms can enable distributed observations for climate science.

### Builds a Diverse Future STEM Workforce

- This budget invests in the Artemis Generation. It requests funding for NASA's STEM engagement efforts for the first time in five years to inspire the next generation of scientists, engineers, mathematicians, and explorers by supporting the agency's STEM efforts.
- With this budget, NASA will increase funding for Space Grant and MUREP and will work with university and consortia partners to implement initiatives focused on diversity, equity and inclusion.



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- NASA taps into the skills of a diverse group of partners and reaches new groups through our small business programs, academic partnerships, and prizes, challenges, and crowdsourcing activities.
- The Space Technology Mission Directorate is collaborating with OSTEM's Minority University Research and Education Project to offer research planning grants and incentivize partnerships between minority-serving institutions and small businesses, setting them up to apply to NASA opportunities.

### Continues Research on the International Space Station

- The space station is a convergence of science, technology, and human innovation that demonstrates new technologies and enables research not possible on Earth. The space station remains the springboard to NASA's next great leap in exploration, including future human missions to the Moon and eventually to Mars.
- With continued support for the International Space Station and the Artemis program, the president welcomes the international community to join us as we push human exploration deeper into space.
- This budget supports early design maturation of multiple commercially owned and operated low-Earth orbit (LEO) destinations (free flyers) from which NASA, along with other customers, can purchase services and stimulate the growth of commercial activities in LEO.
- In addition to maintaining continuous U.S. access to a space station in LEO, these new and more cost-effective platforms will democratize access to space by lowering the barriers to entry for the next generation of researchers, technologists, and tourists.

### **Earth System Observatory**

*On May 24, the White House and NASA announced new Earth System Observatory missions to help address and mitigate climate change:*

- NASA will design a new set of Earth-focused missions to provide key information to guide efforts related to climate change, disaster mitigation, fighting forest fires, and improving real-time agricultural processes.
- With the Earth System Observatory, each satellite will be uniquely designed to complement the others, working in tandem to create a 3D, holistic view of Earth, from bedrock to atmosphere.
- "I've seen firsthand the impact of hurricanes made more intense and destructive by climate change, like Maria and Irma. The Biden-Harris Administration's response to climate change matches the magnitude of the threat: a whole of government, all hands-on-deck approach to meet this moment," said NASA Administrator Bill Nelson. "Over the past three decades, much of what we've learned about the Earth's changing climate is built on NASA satellite observations and research. NASA's new Earth System Observatory will expand that work, providing the world with an unprecedented understanding of our Earth's climate system, arming us with next-generation data critical to mitigating climate change, and protecting our communities in the face of natural disasters."
- The observatory follows recommendations from the 2017 Earth Science Decadal Survey by the National Academies of Sciences, Engineering and Medicine, which lays out ambitious but critically necessary research and observation guidance.
- Areas of focus for the observatory include:



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- Aerosols: Answering the critical question of how aerosols affect the global energy balance, a key source of uncertainty in predicting climate change.
- Cloud, Convection, and Precipitation: Tackling the largest sources of uncertainty in future projections of climate change, air quality forecasting, and prediction of severe weather.
- Mass Change: Providing drought assessment and forecasting, associated planning for water use for agriculture, as well as supporting natural hazard response.
- Surface Biology and Geology: Understanding climate changes that impact food and agriculture, habitation, and natural resources, by answering open questions about the fluxes of carbon, water, nutrients, and energy within and between ecosystems and the atmosphere, the ocean, and the Earth.
- Surface Deformation and Change: Quantifying models of sea-level and landscape change driven by climate change, hazard forecasts, and disaster impact assessments, including dynamics of earthquakes, volcanoes, landslides, glaciers, groundwater, and Earth's interior.
- NASA currently is initiating the formulation phase for the observatory.
- Among its first integrated parts is NASA's partnership with the Indian Space Research Organisation (ISRO), which brings together two different kinds of radar systems that can measure changes in Earth's surface less than a half-inch.
  - This capability will be utilized in one of the observatory's first missions intended as a pathfinder, called NISAR (NASA-ISRO synthetic aperture radar).
  - This mission will measure some of the planet's most complex processes such as ice-sheet collapse and natural hazards such as earthquakes, volcanoes, and landslides. NISAR can assist planners and decision makers with managing both hazards and natural resources in the future.

### Hurricanes and NASA

*June 1 is the official start of hurricane season for the Atlantic Ocean.*

- After 2020 brought a record number of named storms in 2020, NASA is once again prepared to help understand and monitor these storms from its unique vantage point of space.
- NASA develops and launches satellites for NOAA, which is the lead federal agency for forecasting hurricanes. But the science of hurricanes doesn't start – or end – with forecasting.
- Global warming is increasing the heat in the ocean basins and already making it more likely that storms will intensify faster and be stronger, a phenomenon NASA scientists continue to study deeply.
- With the challenge posed by climate change, NASA has never been more committed to innovation in Earth science research.
  - Our next-generation Earth System Observatory, announced on May 24, missions will help us understand extreme weather events and other climate-fueled hazards to inform the solutions of the future.
- NASA researchers and data also support U.S. stakeholders before, during and after storms make landfall.
  - Stages of NASA Data:
    - Pre-storm assessment (feed weather prediction and forecasting models)



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- Near-real-time assessment (identify potential impacts ahead of landfall)
- Post-storm assessment (help identify needs for support after landfall)
- Data access and visualization
- The [NASA Disasters Mapping Portal](#) takes disaster-related data and puts it into understandable, usable formats real-time use and application with the goal to bridge the gap between science products and the people who can use the data to assist in preparedness, response, mitigation, and recovery.
  - After a hurricane makes landfall, NASA satellites are in prime position to identify impacts such as damage, flood depth and extent, power outages, rainfall accumulation, landslide risk, and even soil moisture.
  - That information helps local governments, the Army Corps of Engineers, and FEMA monitor infrastructure failures and disruptions, isolate contaminated water supplies, and identify hotspots for urgent response needs.
- NASA also does plenty of its own deep research on hurricanes and tropical cyclone dynamics. A few examples among many:
  - NASA's Global Modeling and Assimilation Office is pioneering the use of ultra-high-resolution global weather and micro-climate models.
  - The CPEX-AW airborne campaign planned in the Caribbean this August and September will pilot new technology to use LiDAR to better understand atmospheric winds and convective clouds in tropical storms.
  - NASA's Jet Propulsion Laboratory (JPL) is studying the use of artificial intelligence/machine learning to improve hurricane prediction capabilities using NASA satellite data.

### **Search for Life, Technosignatures, and UAP/UFOs**

*Public and media interest in the topic of Unidentified Aerial Phenomenon/Unidentified Flying Objects (UAP/UFOs) has seen an uptick in recent weeks following reports about the Department of Defense's release of three unclassified Navy videos. Likewise, the 2021 Intelligence Authorization Act, signed in December 2020, stipulated the government had 180 days to gather and analyze data from disparate agencies. Below is our response to the public and media who call for NASA comment:*

- One of NASA's key goals is the search for life in the universe. To date, NASA has yet to find any credible evidence of extraterrestrial life, however, NASA is exploring the solar system and beyond to help us answer fundamental questions, including whether we are alone in the universe. We stand ready to support the rest of the government in the search for life in the universe, be it close to home, on the planets or moons of our solar system, or deeper into space.

### **NASA Administrator Fighting for Funding for NASA Missions**

*On May 19, NASA Administrator Sen. Bill Nelson testified virtually about NASA's fiscal year 2022 budget in front of the House Committee on Science, Space, and Technology. Sen. Nelson emphasized the support necessary to continue pursuing NASA's goals and missions. On May 21, he sent a [video](#) and following message to NASA employees:*

- President Biden's discretionary funding request for NASA – \$24.8 billion – clearly demonstrates the Biden-Harris Administration's commitment to NASA, especially in light of the difficult circumstances of the past year. The full details of the president's budget





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request are expected next week and will provide further insight into funding for all NASA programs.

Of course, NASA's goals and missions are challenging and require robust funding to see them through to completion. That's why I asked Congress yesterday, in a hearing before the House Appropriations Commerce, Justice, and Science Subcommittee, to include NASA in the upcoming American Jobs Plan, in addition to the president's full budget request.

NASA missions support tens of thousands of jobs nationwide and the Jobs Plan's focus on infrastructure, research, and development is an opportunity for Congress to include funding for NASA's critical missions, including the Artemis program, while also supporting good-paying American jobs.

China's Zhurong Mars rover landing last week is an example of why NASA's inclusion in the Jobs Bill is important – there is no time to wait.

Investments in technologies like nuclear thermal propulsion, advanced spacesuits, and updated, green infrastructure at our centers are important to our nation and NASA's future as a leader in space, innovation, and jobs around the country. I'm fighting to ensure the agency has the resources we need to continue that incredible legacy.

**China Mars Lander**

*On May 14 (Eastern Time), China's Tianwen-1 orbiter deployed its rover, recently named "Zhurong," to the surface of Mars. NASA has been asked to comment on several aspects of the landing. On May 19, NASA Administrator Sen. Bill Nelson issued the following statement after the China National Space Administration's (CNSA's) release of the first photos from the Zhurong Mars rover:*

- "Congratulations to the China National Space Administration on receiving the first images from the Zhurong Mars rover!" Nelson said. "As the international scientific community of robotic explorers on Mars grows, the United States and the world look forward to the discoveries Zhurong will make to advance humanity's knowledge of the Red Planet. I look forward to future international discoveries, which will help inform and develop the capabilities needed to land human boots on Mars."

CNSA's successful landing of the Zhurong rover last week makes it only the second nation to ever land successfully on Mars. Zhurong joins active NASA missions – the Curiosity and Perseverance rovers and Insight Lander – in exploring the surface of the Red Planet.

- The week of May 16, media outlets asked whether CNSA used NASA animation from a Mars mission a decade ago for animation related to its Zhurong Mars lander. The following is our response:
  - NASA's imagery is made freely available for use by the public.
  - If pressed for more:
    - For questions about the Zhurong animation, please check directly with the China National Space Administration.



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- NASA also was asked the week of May 16 whether the agency's InSight Mars lander was able to detect Zhurong's landing. The following is our response:
  - As part of its normal science, InSight's data acquired seismic and atmospheric measurements at the time of Zhurong's landing. As we did with NASA's Perseverance landing, the InSight science team examined seismic and pressure oscillation signals associated with the Zhurong landing. Based on preliminary examination of the data, we don't appear to have detected it, just as we didn't with Perseverance.
- Below is NASA's initial public comment about the landing from Science Mission Directorate Associate Administrator Dr. Thomas Zurbuchen on [Twitter](#):
  - "Congratulations to CNSA's #Tianwen1 team for the successful landing of China's first Mars exploration rover, #Zhurong! Together with the global science community, I look forward to the important contributions this mission will make to humanity's understanding of the Red Planet."

### **Human Landing System Sen. Cantwell Amendment**

*On May 12, Sen. Maria Cantwell offered an amendment in committee markup of the Endless Frontier Act that included language and proposed funding related to NASA's Human Landing System for the Artemis program. Below is our response to the public and media who call for comment:*

- NASA is excited to return to the Moon with more robot and human explorers than ever before as part of the Artemis program. Both government and commercial capabilities are necessary to enable long-term exploration on and around the Moon. By purchasing commercial services to take astronauts from lunar orbit to land on the surface of the Moon, we will ensure a robust deep space transportation system is in place as we learn to live and work on another world for the benefit of all. NASA is unable to comment on the proposed amendment due to ongoing litigation of the recent human landing system selection.

More information can be found here: <https://www.nasa.gov/nextstep/humanlander2>

### **Webb Telescope Reported Possible Launch Delay**

*On May 12, Space News [reported](#) ongoing work to address a problem seen on two previous Ariane 5 rocket launches could delay the high-profile launch of NASA's James Webb Space Telescope. Below is our response to calls for comment:*

- The launch readiness date for NASA's James Webb Space Telescope, which will be the premier observatory of the next decade, is Oct. 31, 2021. Webb is on schedule for that date, but we know schedule margin is tight. We are working closely with ESA and Arianespace on their launch vehicle readiness, and should a launch date change be needed, Webb has launch windows available almost every day of the year. Webb will study every phase in the history of our universe, including the first luminous glows after the creation of the cosmos, the formation of solar systems capable of supporting life on planets like Earth, and the evolution of our own solar system.

### **Roscosmos Spaceflight Participants to the International Space Station Announcements**

*On May 13, Roscosmos [announced](#) it plans to send spaceflight participants (non professional astronauts) for short trips to the International Space Station this year, including an actress and*



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*filmmaker on a Soyuz flight in October. Below is the response to the public and media who ask for NASA comment:*

- This year is truly a renaissance for human spaceflight both as we fly NASA and international partner astronauts on U.S. commercial crew spacecraft to the International Space Station and also as we see the expansion of private astronaut missions. As more people fly to space and do more things during their spaceflights, it attracts even more people to do more activities in low-Earth orbit, and reflects the growing market we envisioned the Commercial Crew Program enabling when we embarked on it about 10 years ago.

### **Webb Name Webb Telescope Name Statement**

*On May 7, Slate.com posted an [article](#) with the headline and sub-headline “The James Webb Space Telescope Hasn’t Launched Yet. In One Way, It’s Already a Relic. It will collect important data, but what does its name say about who it’s for?” Below is our response to the public and media who call for comment:*

- NASA is aware of concerns that have arisen about James E. Webb, and we are working with historians to examine his role in government. NASA named its next generation observatory, the James Webb Space Telescope, after its second administrator, who helped establish the Apollo Program that landed humans on the Moon. The agency made the naming decision in recognition of Webb’s role in retaining an active science program at NASA in the agency’s early years. Webb’s work as administrator laid the groundwork for today’s accomplishments, and science remains a critical part of NASA’s work: to understand the universe, advance exploration, and inspire the next generation.

### **NASA’s Ingenuity Mars Helicopter**

*On April 19, NASA’s Ingenuity Mars Helicopter successfully completed the first attempt at powered, controlled flight of an aircraft on another planet. The experimental rotorcraft was carried to the Red Planet on NASA’s Perseverance Mars rover. Ingenuity progressively added more complex flights on April 22, April 25, April 30, May 7, and May 23. On April 30, NASA [announced](#) that after its next two demonstration flights, Ingenuity will embark on a new operations demonstration phase, exploring how aerial scouting and other functions could benefit future exploration of Mars and other worlds.*

- Ingenuity Key points:
  - Ingenuity is the first aircraft to attempt and achieve controlled flight on another planet (a “Wright Brothers” moment).
  - Ingenuity had already demonstrated feats of engineering – shrinking its size and mass, working with specialized materials, demonstrating flight in a thin atmosphere while still on Earth.
  - Tests on Earth proved many of its engineering principles.
  - With Ingenuity’s success, future Mars exploration could include an ambitious aerial dimension.
  - Ingenuity is a technology demonstration. Its experimental mission is separate from the rover, but we do tech demos because they advance our capabilities and help prove concepts for future mission.
- Ingenuity’s technology demonstration objectives are:
  - Prove powered flight in the thin atmosphere of Mars.



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- The Red Planet has lower gravity (about one-third that of Earth) but its atmosphere is just 1% as thick, making it much harder to generate lift.
- Demonstrate miniaturized flying technology.
  - That requires shrinking down onboard computers, electronics and other parts so that the helicopter is light enough to take off.
- Operate autonomously.
  - Ingenuity will use solar power to charge its batteries and rely on internal heaters to maintain operational temperatures during the cold Martian nights. After receiving commands from Earth relayed through the rover, each test flight is performed without real-time input from Mars Helicopter mission controllers.
- NASA's Perseverance Mars rover mission objectives are:
  - Take samples to leave on the surface for return to Earth in a few years. First leg of a round trip to Mars.
  - Search for signs of ancient microbial life as the rover explores a crater that billions of years ago might have been a large body of water like a lake.
  - Characterize the geology and climate of Mars.
  - Help pave the way for human exploration beyond the Moon.
- Perseverance Mars rover Key Points:
  - The Perseverance rover is the most capable rover ever sent to Mars and builds on the legacy of NASA's Mars Exploration Program and earlier rovers.
  - The mission embodies our nation's spirit of persevering even in the most challenging of situations, providing inspiration and advancing science and exploration. The mission itself personifies the human ideal of persevering toward the future.
  - The Mars 2020 mission is part of America's larger Moon to Mars exploration approach, which includes astronaut missions to the Moon that prepare for human exploration of the Red Planet.
  - NASA is committed to working with our international partners to accomplish stunning achievements in science, technology and exploration, and this mission reinforces those strong bonds.
  - Perseverance is the beginning of the first round-trip to another planet. The rover will collect rock and soil samples for return to Earth by future missions that could possibly confirm the ultimate astrobiology question: does life exist, or did it, elsewhere?
  - Perseverance carries the most sophisticated suite of instruments ever sent to Mars.
  - The mission addresses high-priority science goals to:
    - Return samples from Mars.
    - Search for clues about the potential for past life on Mars.
    - Find out what Mars' environment was like billions of years ago, and what might be preserved in the unique rocks of Jezero Crater.
    - Study what the planet's environment is like today.
  - NASA's robotic exploration of Mars is paving the way for future human missions to the Red Planet and will gather knowledge and demonstrate technologies that address the challenges of those human expeditions. Some relevant technologies include:
    - Entry, descent and landing technology.



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- In situ resource use.
- Terrain-relative navigation.
- The public will get to ride along. The mission has more cameras than any previous interplanetary mission, and while we have “felt” vibrations in response to wind with the InSight lander’s seismometer and “translated” them into sounds that we could hear with the human ear, two microphones on Perseverance will attempt for the first time to hear audio of the rover’s operations and travels, as well as the environment at Mars.
- Perseverance joins a fleet that right now includes a rover, a lander and multiple orbiters. This is the 9th U.S. mission to land and the 5th rover. The U.S. is the only nation to successfully land on Mars.
- On April 20, a toaster-size experimental instrument aboard Perseverance called the Mars Oxygen In-Situ Resource Utilization Experiment ([MOXIE](#)) converted some of the Red Planet’s thin, carbon dioxide-rich atmosphere into oxygen – the first time this has ever been done.
  - While the technology demonstration is just getting started, it could pave the way for science fiction to become science fact – isolating and storing oxygen on Mars to help power rockets that could lift astronauts off the planet’s surface. Such devices also might one day provide breathable air for astronauts themselves.

### **UPCOMING EVENTS PUBLIC DATES**

*Below are the publicly listed dates of some high-profile activities/events/milestones in 2021. Internal planning, target, and pre-decisional dates are not listed below as they’re not official and public yet. The public dates listed are as specific as they can be, at this time. This list will be regularly updated and added to, as appropriate. Text in **red** is newly updated public information:*

- **State of NASA – June 2:** NASA Administrator Bill Nelson’s first live address to the NASA workforce about the state of the agency and its activities
- **Russian Spacewalk on the International Space Station - June 2:** Russian EVA 48 (Novitskiy and Dubrov) from Poisk to dismantle cables for Pirs docking compartment undocking
- **SpaceX CRS-22 – June 3:** Next commercial [resupply services](#) mission to space station from Florida
- **Laser Comm – June 23:** NASA’s [Laser Communications Relay Demonstration](#) to test optical communications launches from Florida
- **Boeing Orbital Flight Test-2 – July 30 –** Boeing’s uncrewed CST-100 Starliner OFT-2 (Orbital Flight Test-2) launch from Florida to the International Space Station
- **Northrop Grumman CRS-16 – July 2021:** Commercial [resupply services](#) mission to space station from Virginia
- **X-57 – Fall 2021 --** Flight test for NASA’s first all-electric plane, [X-57](#), at Armstrong Flight Research Center
- **Landsat 9 – September:** NASA and U.S. Geological Survey launch latest Earth observation satellite, [Landsat 9](#), from California
- **CAPSTONE – Fall 2021:** NASA [CubeSat](#) to validate new navigation technologies and verify dynamics in Gateway’s planned orbit will launch to space
- **Imaging X-Ray Polarimetry Explorer – Fall 2021:** NASA’s [IXPE](#) mission to discover hidden astronomical objects in the universe launches from Florida



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- **SpaceX CRS-23 – Fall 2021:** Commercial [resupply services](#) mission to space station from Florida
- **Lucy – Oct 16:** NASA's [Lucy](#) mission to study the Trojan asteroids of Jupiter will launch from Florida
- **SpaceX Crew-3 – No earlier than Oct. 23:** [Crew-3](#) will launch to station from Florida
- **SpaceX Crew-2 Return – No Earlier than Oct. 31:** Crew-2 returns to Earth
- **Webb Telescope – (Launch Readiness Date) Oct. 31:** NASA's [James Webb Space Telescope](#) to help answer questions about our cosmic origins launches from French Guiana
- **DART – Nov. 24:** Window opens to launch Double Asteroid Redirection Test from California, NASA's first flight demonstration for planetary defense
- **Webb Telescope – November/December:** The [James Webb Space Telescope](#) completes mission deployments/arrives in its L2 (second Lagrange Point) orbit about 29 days after launch
- **Artemis I - November:** NASA reviewing launch date for [first integrated flight test](#) of the uncrewed Space Launch System rocket and Orion spacecraft launches on a multi-week mission around the Moon
- **Orion splashdown:** NASA's [Orion](#) spacecraft splashes down on Earth following a multi-week mission around the Moon
- **Geostationary Operational Environmental Satellite-T – December:** NASA and NOAA's latest weather satellite, [GOES-T](#), launches from Florida
- **Astrobotic's CLPS Flight – Late 2021:** Suite of robotic NASA payloads sent to the lunar surface as part of a [Commercial Lunar Payload Services](#) delivery. Landing takes place in the following weeks
- **Boeing's Crew Flight Test – Under review pending OFT-2:** Boeing's CFT earliest possible launch to space station from Florida
- **Boeing Starliner-1 – Under review pending outcome of earlier flight tests:** Launch date for first operational Boeing commercial crew launch to space station from Florida
- **Astronaut Candidates – 2021:** NASA will announce selections for the next class of [astronaut candidates](#) to begin training
- **Intuitive Machines' CLPS Flight – Early 2022:** Suite of robotic NASA payloads sent lunar surface as part of a [Commercial Lunar Payload Services](#) delivery. Landing takes place in the following weeks

### **AGENCY COMMUNICATION THEME PRIORITIES**

For full key points and other products for all themes, visit: <https://communications.nasa.gov>.

#### **Earth**

NASA uses the vantage point of space to understand and explore our home planet, improve lives and safeguard our future.

Tagline: **Your Home. Our Mission.**

#### **Flight**

NASA explores new technologies to make aircraft quieter and faster, get you gate-to-gate safely and on time, and transform aviation into a new economic engine at all altitudes.

Tagline: **NASA is With You When You Fly.**

#### **Humans in Space**

NASA leads human space exploration in low-Earth orbit with commercial and international



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partners to enable missions to the Moon and Mars. International Space Station missions are a catalyst for economic development and the advancement of scientific knowledge and new technologies that improve our lives.

Tagline: **Leading Discovery, Improving Life on Earth.**

### **Moon to Mars**

NASA is leading a sustainable return to the Moon with commercial and international partners to expand human presence in space and bring back new knowledge and opportunities.

Tagline: **Moon Lights the Way.**

### **Solar System & Beyond**

NASA is exploring our Solar System and beyond, uncovering worlds, stars, and cosmic mysteries near and far with our powerful fleet of space and ground-based missions.

Tagline: **Discovering the Secrets of the Universe.**

### **Space Tech**

NASA technologies advance capabilities for space exploration, promote America's global leadership in innovation and transform the world around us.

Tagline: **Technology Drives Exploration.**

-end-

## **NASA INTERVIEW PREP DOCUMENT - as of 6-25-21 (internal distribution only)**

From: Beutel, Allard (HQ-NA020) <allard.beutel@nasa.gov>  
Sent: June 25, 2021 11:43:30 PM EDT  
Received: June 25, 2021 11:44:03 PM EDT  
Attachments: NASA INTERVIEW PREP DOCUMENT - as of 6-25-21.docx

Good evening, attached is the latest interview prep document.

The top item is new:

- Search for Life, Technosignatures, and UAP/UFOs

The updated items are:

- Hubble Space Telescope Issue
- Upcoming Events Public Dates section

-Allard



## Attachment

### 1. NASA INTERVIEW PREP DOCUMENT - as of 6-25-21.docx

Type: application/vnd.openxmlformats-officedocument.wordprocessingml.document  
Size: 56 KB (57,773 bytes)

**Attachment #1**

**NASA INTERVIEW PREP DOCUMENT - as of 6-25-21.docx**

**Original view**

12 pages (displayed on pages 4 to 15)



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**NASA INTERVIEW PREP DOCUMENT**

**RECENT HOT TOPICS**

**Search for Life, Technosignatures, and UAP/UFOs**

*Public and media interest in the topic of UAP/UFO (Unidentified Aerial Phenomena /Unidentified Flying Objects) has seen an uptick in recent weeks following reports related to the Department of Defense's release of three unclassified U.S. Navy videos. An unclassified preliminary [report](#) from the Office of the Director of National Intelligence was released June 25, which is when we posted a NASA [article](#) on what the agency is doing to search for life beyond Earth. And below is our response to the public and media who call for NASA comment:*

- One of NASA's key goals is the search for life in the universe. To date, NASA has yet to find any credible evidence of extraterrestrial life; however, NASA is exploring the solar system and beyond to help us answer fundamental questions, including whether we are alone in the universe. We lead the U.S. government's search for extraterrestrial life, be it close to home, on the planets or moons of our solar system, or deeper into space.

NASA does not actively search for UAPs and the lack of robust data is the central problem for scientific study of UAPs and to determine whether they are natural or human-made phenomena – there is no current data to support that UAPs or UFOs are evidence of alien technologies.

**Hubble Space Telescope Issue**

*Starting on June 16, NASA has provided status [updates](#) that the Hubble Space Telescope operations team has been working since June 13 to resolve an issue with the observatory's payload computer.*

- The Hubble operations team continues working to solve the payload computer issue onboard the Hubble Space Telescope. The team is working to collect all the data available to them to isolate the problem and determine the best path forward for bringing the computer back to operations. At this time, there is no definitive timeline for bringing the computer back online. However, the team has multiple options available to them and are working to find the best solution to return the telescope to science operations as soon as possible. Launched in 1990, Hubble has contributed greatly to our understanding of the universe over the past 30 years.

**Senate Confirms Pam Melroy as NASA's Deputy Administrator**

*On June 17, the U.S. Senate confirmed Pam Melroy to be NASA's next Deputy Administrator. The following [statements](#) were issued following confirmation:*

- "It's an honor to be confirmed by the Senate to serve as NASA Deputy Administrator, and I am humbled by President Biden and Vice President Harris' confidence in me," Melroy said. "I look forward to returning to the NASA family and working with Administrator Nelson to ensure the United States continues to lead in space and beyond – exploring the wonders of the universe, expanding the Earth science research critical to combatting climate change, unlocking scientific discoveries that will change the world as we know it, and inspiring the next generation of discoverers and dreamers."

Quick Reference

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- “Pam is a pioneer and veteran of NASA, and will be an outstanding leader as we venture farther out to the stars,” said NASA Administrator Bill Nelson. “We certainly are lucky to have her on board, and I look forward to leading NASA with her as a team.”

**Mission Equity**

*On June 15, NASA announced a new effort called [Mission Equity](#) that included issuing a Request for Information (RFI) seeking public input to broaden access to the agency.*

- NASA is launching Mission Equity, a comprehensive effort to assess expansion and modification of agency programs, procurements, grants, and policies, and examine what potential barriers and challenges exist for communities that are historically underrepresented and underserved.
- NASA Administrator Bill Nelson said of Mission Equity:
  - “NASA is a 21st century agency with 22nd century goals. To be successful, it’s critical that NASA takes a comprehensive approach to address the challenges to equity we see today. The agency’s new Mission Equity is a bold and necessary challenge for NASA to ensure our programs are accessible to all Americans and, especially, those living in historically underserved communities across the country. Because when NASA opens doors to talent previously left untapped, the universe is the limit.”
- NASA issued a [request for information](#) (RFI) on June 15, entitled Advancing Racial Equity and Support for Underserved Communities in NASA Programs, Contracts and Grants. To this RFI, the agency is seeking public feedback as it conducts a thorough review of its programs, practices, and policies to assess:
  - Potential barriers that underserved and underrepresented communities and individuals may face in agency procurement, contract, and grant opportunities.
  - Whether new policies, regulations, or guidance may be necessary to advance equity and opportunities in agency actions and programs.
  - How agency resources and tools can assist in enhancing equity, including advancing environmental justice.
- Areas in which the agency would like to receive comments include:
  - Diversity and Equal Opportunity at NASA and in the STEM Community
  - Opportunities for NASA to Leverage its Data, Expertise, and Missions to Help Underserved Communities
  - Barriers/Gaps to Accessing Current NASA Grants, Programs, and Procurements
  - Engagement and Outreach with Organizations and Individuals from Underserved and Underrepresented Communities
- Underserved and underrepresented communities include: Black, Latino, and Indigenous and Native American persons, Asian Americans and Pacific Islanders and other persons of color; members of religious minorities; lesbian, gay, bisexual, transgender, and queer (LGBTQ+) persons; persons with disabilities; persons who live in rural areas; and persons otherwise adversely affected by persistent poverty or inequality.
- Through the RFI process, NASA hopes to initiate vibrant, meaningful, and ongoing dialogues that will help the agency build and improve current agency policies, practices, and programs. The deadline for public comments to this RFI is Monday, July 12, but we encourage submission of comments as soon as possible to enable early analysis and follow-up discussions. NASA will host a virtual public meeting soon, during which NASA officials will discuss the RFI and corresponding agency goals.



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### **NASA Administrator Statement on US Innovation and Competitiveness Act**

*NASA Administrator Bill Nelson released the following statement June 8 after the Senate passed the U.S. Innovation and Competitiveness Act:*

- “The U.S. Innovation and Competitiveness Act, which includes the NASA authorization bill, is an investment in scientific research and technological innovation that will help ensure the U.S. continues to lead in space and sets us on a path to execute many landings on the Moon in this decade. I applaud the Senate passage of the bill and look forward to working with the House to see it passed into law.”

### **NASA Selects Two Missions to Venus**

*On June 2, NASA announced it has selected two new missions to Venus.*

- NASA’s two new missions to Earth’s nearest planetary neighbor aim to understand how Venus became an inferno-like world when it has so many other characteristics similar to ours – and may have been the first habitable world in the solar system, complete with an ocean and Earth-like climate.
- The selected missions are:
  - DAVINCI+ (Deep Atmosphere Venus Investigation of Noble gases, Chemistry, and Imaging)
    - DAVINCI+ will measure the composition of Venus’s atmosphere to understand how it formed and evolved, as well as determine whether the planet ever had an ocean.
    - The mission consists of a descent sphere that will plunge through the thick atmosphere, making precise measurements of noble gases and other elements to understand why Venus’s atmosphere is a runaway hothouse compared the Earth’s.
    - DAVINCI+ also will return the first high resolution pictures of the unique geological features on Venus known as “tesserae,” which may be comparable to Earth’s continents, suggesting that Venus has plate tectonics.
    - This would be the first U.S.-led, missions to Venus’s atmosphere since 1978, and the results from DAVINCI+ could reshape our understanding of terrestrial planet formation in our solar system and beyond.
  - VERITAS (Venus Emissivity, Radio Science, InSAR, Topography, and Spectroscopy)
    - VERITAS will map Venus’ surface to determine the planet’s geologic history and understand why it developed so differently than Earth.
    - Orbiting Venus with a synthetic aperture radar, VERITAS will chart surface elevations over nearly the entire planet to create 3D reconstructions of topography and confirm whether processes such as plate tectonics and volcanism are still active on Venus.
    - VERITAS also will map infrared emissions from Venus’ surface to map its rock-type, which is largely unknown, and determine whether active volcanoes are releasing water vapor into the atmosphere.
- In addition to the two missions, NASA selected a pair of technology demonstrations to fly along with them.



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- VERITAS will host the [Deep Space Atomic Clock-2](#), built by NASA's Jet Propulsion Laboratory and funded by NASA's Space Technology Mission Directorate. The ultra-precise clock signal generated with this technology will ultimately help enable autonomous spacecraft maneuvers and enhance radio science observations.
- DAVINCI+ will host the Compact Ultraviolet to Visible Imaging Spectrometer (CUVIS) built by NASA's Goddard Space Flight Center. CUVIS will make high resolution measurements of ultraviolet light using a new instrument based on freeform optics. These observations will be used to determine the nature of the unknown ultraviolet absorber in Venus's atmosphere that absorbs up to half the incoming solar energy.
- DAVINCI+ and VERITAS are the final selections from [four mission concepts](#) NASA's Discovery Program picked in February 2020 as part of the agency's Discovery 2019 competition. Following a competitive, peer-review process, the two missions were chosen based on their potential scientific value and the feasibility of their development plans.
- NASA is awarding approximately \$500 million per mission for development. Each is expected to launch between 2028 - 2030. The project teams now will work to finalize their requirements, designs, and development plans.

### Webb Telescope Reported Possible Launch Delay

*During a June 1 ESA (European Space Agency) news conference, media asked about reported possible launch delays to NASA's James Webb Space Telescope. Below is our response to calls for comment:*

- NASA's James Webb Space Telescope, which will be the premier observatory of the next decade, remains on schedule for a launch readiness date no earlier than Oct. 31, 2021.

Webb will ship to the launch site in August with little to no schedule margin. Launch processing will take two months. The observatory has completed all the post-environmental testing deployments, and it's in its final integration and folding stages. Final stow, closeout, and pack and ship are imminent. We are working closely with ESA and Arianespace on establishing the launch date. We'll launch approximately four months after the first launch of the Ariane 5 this year, which is scheduled for late July. Webb has no launch date constraints, so it can launch almost any day of the year.

Webb will study every phase in the history of our universe, including the first luminous glows after the creation of the cosmos, the formation of solar systems capable of supporting life on planets like Earth, and the evolution of our own solar system.

### Fiscal Year 2022 NASA Full Budget Proposal

*On May 28, the Biden-Harris Administration released the full budget proposal for Fiscal Year 2022.*

- President's Fiscal Year 2022 budget requests \$24.8 billion for NASA, an increase of more than 6% over what the agency received the previous year.

### Overarching Points



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- This funding request demonstrates the president's commitment to NASA and the people across the agency and its partners who have worked so hard this past year under the most difficult circumstances and achieved unprecedented success.
- The NASA workforce and the American people should be encouraged by what they see in this budget request. It is an investment in our future, and it shows confidence in what this agency has to offer. We owe it to the president and the American people to be good and responsible stewards of every tax dollar invested in NASA.
- This budget request includes the strongest NASA budget ever for science, which will help address the climate crisis at home and abroad, as well as advance robotic missions that will pave the way for astronauts to explore the Moon and Mars.
- This is also the strongest budget for exploration since the Apollo program.
- This budget request will restore America's global standing, promote racial and economic equity, and drive economic growth.

### Supports Human Exploration of the Moon, Mars, and Beyond

- The president's funding request increases funding for Artemis by \$350 million and gives us the resources to advance America's bipartisan Moon to Mars space exploration plan, agreed to by the Administration and Congress.
- This request keeps us on the path toward a regular cadence of Artemis missions with crew to the Moon by the middle of the decade.
- NASA's human landing system contract award, with the goal of a human demonstration mission to the lunar surface by 2024, is under protest.
- NASA is currently reviewing the overall Artemis timeline based on appropriations and expected budget, and outcome of the human landing system protest. We hope to provide an updated Artemis timeline later this year following conclusion of the protest.
- The FY2022 budget request assumes an Artemis I launch no earlier than November 2021, an Artemis II launch no earlier than September 2023, followed by Artemis III targeted for late 2024 and Artemis IV for late 2025. Landing the first woman and first person of color on the lunar surface as part of the Artemis program will promote equity – signaling to every American they too can see themselves among the stars.
- With NASA's Space Launch System rocket and Orion spacecraft, as well as U.S. commercial partnerships with the human landing system and Gateway lunar outpost, we will send astronauts to the Moon to test technologies and exploration practices that will make future missions more productive than ever before.
- This budget funds an upgraded Space Launch System, known as Block1B, that can deliver larger cargos to lunar orbit.
- Gateway, built with our commercial and international partners, is important to sustainable lunar operations.
  - The foundation of our lunar outpost is targeted to launch no earlier than November 2024, with additional modules from our international partners launching later.
- We are working day and night to reduce risks and overcome the challenges of long-term human exploration of the Moon and Mars.
- The budget funds early design work and planning for additional surface architecture necessary including the lunar terrain vehicle and surface habitats to ensure our astronauts can explore more of the Moon than ever before and stay for increasingly longer periods of time in deep space.



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- NASA's Lunar Surface Innovation Initiative is advancing technologies to support mission operations on the Moon. This budget includes funding for the preliminary design of a fission surface power system that could power operations on the Moon and Mars.

Furtheres Robotic Exploration of the Solar System and the Universe

- This funding request also furtheres robotic exploration of the solar system and the universe.
- The budget provides more than \$650 million for the Mars Sample Return mission, the highest priority large mission in planetary science.
- It includes strong support for planetary defense, including the near-Earth objects (NEO) Surveyor mission to detect asteroids and comets that could potentially impact Earth.

Enhances Research and Development at NASA

- This funding request supports continued progress developing cutting-edge space technologies, transformative capabilities, and renewable energy, all of which feed the economy and create good paying American jobs.
- Investing in new technologies enhances NASA's missions and fosters the growing space economy.
- NASA routinely demonstrates new technologies, reducing overall risk and encouraging industry adoption. The budget includes \$500 million for technology demonstrations.
- It fully funds the On-orbit Servicing, Assembly, and Manufacturing 1 (OSAM-1) mission. Robotically refueling a satellite and manufacturing and assembling spacecraft parts in-orbit will foster a more sustainable space economy.
- Launching next month, our Laser Communications Relay Demonstration will demonstrate a technology that can provide 10-100 times better data rates than commonly used radio frequency communications systems. In the coming years, we'll further refine laser communications technology for use in deep space.
- More than \$280 million would be directed toward small business innovation research and technology transfer. The increase of \$60 million will provide more money to small companies to research new ideas and develop innovative solutions to challenging problems.
- An investment in NASA and space infrastructure reaffirms our nation is the world's premier partner in space collaboration, and we will be for decades to come.
- We are investing in aviation to make our skies safer, our fuels cleaner, and to get you to your destination faster than ever before. This also includes investing in next-generation aeronautics research that will safely integrate automated aircraft systems with piloted airplanes.
  - This budget enhances American competitiveness in the global aviation industry including the first two flights of new X-57 and X-59 aircraft.
  - NASA aeronautics is leading transformation of the way people and goods are moved through Advanced Air Mobility (air taxis, drone cargo deliveries, etc.), an emerging market expected to be worth \$115 billion a year by 2035.
    - It will help safely deliver revolutionary aviation capabilities to previously underserved local, regional, intraregional, and urban areas. NASA investments today will spur the advancements of tomorrow.
- The budget provides a \$30 million increase to accelerate transformative science at the frontiers of biological and physical sciences research in space.





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### Advances Climate Science

- Climate change has increasing economic and national security impacts, and this budget increases investments in climate research and science programs.
- This funding increases our ability to better understand Earth and how it works as an integrated system, from our oceans to our atmosphere and how it all impacts our daily lives.
- NASA is developing the next-generation Earth System Observatory. NASA's new Earth System Observatory will provide the world with an unprecedented understanding of our Earth's climate system, arming us with next-generation data critical to mitigating climate change, and protecting our communities in the face of natural hazards.
  - The Earth System Observatory will help improve our understanding of extreme weather events and our decision making on climate resilience, adaptation, and mitigation. It will also inform decisions that ensure communities have the resources they need to build resilience prior to these crises.
- Research on zero-emissions aviation
  - NASA Aeronautics is partnering with industry, academia and other agencies through the Sustainable Flight National Partnership to accomplish the aviation community's aggressive climate change agenda. Through advanced vehicle technologies, efficient airline operations and sustainable aviation fuels, collectively NASA and our federal government and industry partners aim to reduce carbon emissions from aviation by half by 2050, compared to 2005, and achieve net-zero emissions by 2060.
- NASA continues to lead the development of new small spacecraft capabilities. For example, small platforms can enable distributed observations for climate science.

### Builds a Diverse Future STEM Workforce

- This budget invests in the Artemis Generation. It requests funding for NASA's STEM engagement efforts for the first time in five years to inspire the next generation of scientists, engineers, mathematicians, and explorers by supporting the agency's STEM efforts.
- With this budget, NASA will increase funding for Space Grant and MUREP and will work with university and consortia partners to implement initiatives focused on diversity, equity and inclusion.
- NASA taps into the skills of a diverse group of partners and reaches new groups through our small business programs, academic partnerships, and prizes, challenges, and crowdsourcing activities.
- The Space Technology Mission Directorate is collaborating with OSTEM's Minority University Research and Education Project to offer research planning grants and incentivize partnerships between minority-serving institutions and small businesses, setting them up to apply to NASA opportunities.

### Continues Research on the International Space Station

- The space station is a convergence of science, technology, and human innovation that demonstrates new technologies and enables research not possible on Earth. The space station remains the springboard to NASA's next great leap in exploration, including future human missions to the Moon and eventually to Mars.



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- With continued support for the International Space Station and the Artemis program, the president welcomes the international community to join us as we push human exploration deeper into space.
- This budget supports early design maturation of multiple commercially owned and operated low-Earth orbit (LEO) destinations (free flyers) from which NASA, along with other customers, can purchase services and stimulate the growth of commercial activities in LEO.
- In addition to maintaining continuous U.S. access to a space station in LEO, these new and more cost-effective platforms will democratize access to space by lowering the barriers to entry for the next generation of researchers, technologists, and tourists.

### Hurricanes and NASA

*June 1 is the official start of hurricane season for the Atlantic Ocean.*

- After 2020 brought a record number of named storms in 2020, NASA is once again prepared to help understand and monitor these storms from its unique vantage point of space.
- NASA develops and launches satellites for NOAA, which is the lead federal agency for forecasting hurricanes. But the science of hurricanes doesn't start – or end – with forecasting.
- Global warming is increasing the heat in the ocean basins and already making it more likely that storms will intensify faster and be stronger, a phenomenon NASA scientists continue to study deeply.
- With the challenge posed by climate change, NASA has never been more committed to innovation in Earth science research.
  - Our next-generation Earth System Observatory, announced on May 24, missions will help us understand extreme weather events and other climate-fueled hazards to inform the solutions of the future.
- NASA researchers and data also support U.S. stakeholders before, during and after storms make landfall.
  - Stages of NASA Data:
    - Pre-storm assessment (feed weather prediction and forecasting models)
    - Near-real-time assessment (identify potential impacts ahead of landfall)
    - Post-storm assessment (help identify needs for support after landfall)
    - Data access and visualization
- The [NASA Disasters Mapping Portal](#) takes disaster-related data and puts it into understandable, usable formats real-time use and application with the goal to bridge the gap between science products and the people who can use the data to assist in preparedness, response, mitigation, and recovery.
  - After a hurricane makes landfall, NASA satellites are in prime position to identify impacts such as damage, flood depth and extent, power outages, rainfall accumulation, landslide risk, and even soil moisture.
  - That information helps local governments, the Army Corps of Engineers, and FEMA monitor infrastructure failures and disruptions, isolate contaminated water supplies, and identify hotspots for urgent response needs.
- NASA also does plenty of its own deep research on hurricanes and tropical cyclone dynamics. A few examples among many:



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- NASA's Global Modeling and Assimilation Office is pioneering the use of ultra-high-resolution global weather and micro-climate models.
- The CPEX-AW airborne campaign planned in the Caribbean this August and September will pilot new technology to use LiDAR to better understand atmospheric winds and convective clouds in tropical storms.
- NASA's Jet Propulsion Laboratory (JPL) is studying the use of artificial intelligence/machine learning to improve hurricane prediction capabilities using NASA satellite data.

### Webb Name Webb Telescope Name Statement

On May 7, *Slate.com* posted an [article](#) with the headline and sub-headline "The James Webb Space Telescope Hasn't Launched Yet. In One Way, It's Already a Relic. It will collect important data, but what does its name say about who it's for?" Below is our response to the public and media who call for comment:

- NASA is aware of concerns that have arisen about James E. Webb, and we are working with historians to examine his role in government. NASA named its next generation observatory, the James Webb Space Telescope, after its second administrator, who helped establish the Apollo Program that landed humans on the Moon. The agency made the naming decision in recognition of Webb's role in retaining an active science program at NASA in the agency's early years. Webb's work as administrator laid the groundwork for today's accomplishments, and science remains a critical part of NASA's work: to understand the universe, advance exploration, and inspire the next generation.

### UPCOMING EVENTS PUBLIC DATES

*Below are the publicly listed dates of some high-profile activities/events/milestones in 2021 and 2022. Internal planning, target, and pre-decisional dates are not listed below as they're not official and public yet. The public dates listed are as specific as they can be, at this time. This list will be regularly updated, as appropriate. Text in red is newly updated public information:*

- **TROPICS Pathfinder Launch – No earlier than June 29:** Launch of a test satellite or Pathfinder on a rideshare on SpaceX Transporter 2 from Cape Canaveral Space Force Station, ahead of a constellation of six small satellites (launching in 2022) that will work together to provide near hourly updates of hurricanes and tropical cyclones
- **Boeing Orbital Flight Test-2 – July 30 –** Boeing's uncrewed CST-100 Starliner OFT-2 (Orbital Flight Test-2) launch from Florida to the International Space Station
- **Northrop Grumman CRS-16 – July 2021:** Commercial [resupply services](#) mission to space station from Virginia
- **Landsat 9 – September:** NASA and U.S. Geological Survey launch latest Earth observation satellite, [Landsat 9](#), from California
- **Lucy – Oct 16:** NASA's [Lucy](#) mission to study the Trojan asteroids of Jupiter will launch from Florida
- **SpaceX Crew-3 – No Earlier than Oct. 31:** [Crew-3](#) will launch to station from Florida
- **SpaceX Crew-2 Return – Early to mid-November:** Crew-2 returns to Earth
- **Webb Telescope – (Launch Readiness Date) Oct. 31:** NASA's [James Webb Space Telescope](#) to help answer questions about our cosmic origins launches from French Guiana
- **X-57 – (tentative Oct. 31) –** Flight test for NASA's first all-electric plane, [X-57](#), at Armstrong Flight Research Center



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- **DART – Nov. 24:** Window opens to launch Double Asteroid Redirection Test from California, NASA's first flight demonstration for planetary defense
- **Webb Telescope – November/December:** The [James Webb Space Telescope](#) completes mission deployments/arrives in its L2 (second Lagrange Point) orbit about 29 days after launch
- **Artemis I - November:** NASA reviewing launch date for [first integrated flight test](#) of the uncrewed Space Launch System rocket and Orion spacecraft launches on a multi-week mission around the Moon
- **Orion splashdown – Late 2021:** NASA's [Orion](#) spacecraft splashes down on Earth following a multi-week mission around the Moon
- **Geostationary Operational Environmental Satellite-T – December:** NASA and NOAA's latest weather satellite, [GOES-T](#), launches from Florida
- **SpaceX CRS-23 – Fall 2021:** Commercial [resupply services](#) mission to space station from Florida
- **CAPSTONE – Fall 2021:** NASA [CubeSat](#) to validate new navigation technologies and verify dynamics in Gateway's planned orbit will launch to space
- **Imaging X-Ray Polarimetry Explorer – Fall 2021:** NASA's [IXPE](#) mission to discover the secrets of black holes, pulsars, and other high-energy objects in the universe launches from Florida
- **Boeing's Crew Flight Test – Late 2021, under review pending OFT-2:** Boeing's CFT earliest possible launch to space station from Florida
- **Boeing Starliner-1 – Under review pending earlier flight tests:** Launch date for first operational Boeing commercial crew launch to space station from Florida
- **Astronaut Candidates – Late 2021:** NASA will announce selections for the next class of [astronaut candidates](#) to begin training
- **Laser Comm – Under Review:** NASA's [Laser Communications Relay Demonstration](#) to test optical communications launches from Florida
- **Intuitive Machines' CLPS Flight – Early 2022:** Suite of robotic NASA payloads sent lunar surface as part of a [Commercial Lunar Payload Services](#) delivery. Landing takes place in the following weeks
- **Astrobotic's CLPS Flight – 2022:** Suite of robotic NASA payloads sent to the lunar surface as part of a [Commercial Lunar Payload Services](#) delivery. Landing takes place in the following weeks.
- **Artemis II Crew Announcement – Early 2022:** NASA will announce the astronauts that will fly on the first crewed flight of Orion spacecraft and Space Launch System rocket for the [Artemis II mission](#).
- **Webb Telescope – Spring 2022:** First science images from the [James Webb Space Telescope](#), about six months after launch
- **TROPICS Launch – Spring 2022:** Time-Resolved Observations of Precipitation structure and storm Intensity with a Constellation of Smallsats (TROPICS), a constellation of six CubeSats, will launch from Kwajalein Atoll in the Marshall Islands. The satellites will work together to provide near hourly updates of hurricanes and tropical cyclones
- **The next crew rotation mission to the International Space Station after NASA's SpaceX Crew-3 is targeted for no earlier than mid-April 2022:** The specific commercial crew partner's spacecraft and rocket will be determined at a later date



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- **X-59 QueSST First Flight – (tentative June 1, 2022):** The first flight of the [X-59](#) Quiet SuperSonic Technology (QueSST) aircraft will take place out of Lockheed flight facilities in Palmdale, California
- **Psyche – August 2022:** Window opens to launch [Psyche](#) from Florida, NASA's mission to study the metal-rich asteroid 16 Psyche.
- **Surface Water and Ocean Topography (SWOT) Launch – November 2022:** Launch of SWOT to observe details of the ocean's surface topography, and measure how water bodies change over time, jointly developed by NASA and the Centre National d'Études Spatiales (CNES), with contributions from the U.K. Space Agency (UKSA) and the Canadian Space Agency (CSA)
- **NISAR Launch (NASA + Indian Space Research Organization + synthetic aperture radars) – Late 2022:** Joint mission between NASA and the Indian Space Research Organization to track subtle changes in Earth's surface, spot warning signs of imminent volcanic eruptions, help to monitor groundwater supplies, track the melt rate of ice sheets tied to sea level rise, and observe shifts in the distribution of vegetation around the world
- **PACE Launch (Plankton, Aerosol, Cloud, ocean Ecosystem) - 2022:** PACE will advance the assessment of ocean health by measuring the distribution of phytoplankton, tiny plants and algae that sustain the marine food web
- **TEMPO launch (Tropospheric Emissions Monitoring of Pollution) - 2022:** NASA's first Earth Venture Instrument mission will measure pollution of North America, from Mexico City to the Canadian oil sands, and from the Atlantic to the Pacific hourly and at high spatial resolution. TEMPO will be the first space-based instrument to monitor air pollutants hourly across the North American continent during daytime

### **AGENCY COMMUNICATION THEME PRIORITIES**

For full key points and other products for all themes, visit: <https://communications.nasa.gov>.

#### **Earth**

NASA uses the vantage point of space to understand and explore our home planet, improve lives and safeguard our future.

Tagline: **Your Home. Our Mission.**

#### **Flight**

NASA explores new technologies to make aircraft greener and quieter, get you gate-to-gate safely and on time, and transform aviation into a new economic engine at all altitudes.

Tagline: **NASA is With You When You Fly.**

#### **Humans in Space**

NASA leads human space exploration in low-Earth orbit with commercial and international partners to enable missions to the Moon and Mars. International Space Station missions are a catalyst for economic development and the advancement of scientific knowledge and new technologies that improve our lives.

Tagline: **Leading Discovery, Improving Life on Earth.**

#### **Moon to Mars**

NASA is leading a sustainable return to the Moon with commercial and international partners to expand human presence in space and bring back new knowledge and opportunities.

Tagline: **Moon Lights the Way.**



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### **Solar System & Beyond**

NASA is exploring our Solar System and beyond, uncovering worlds, stars, and cosmic mysteries near and far with our powerful fleet of space and ground-based missions.

Tagline: **Discovering the Secrets of the Universe.**

### **Space Tech**

NASA technologies advance capabilities for space exploration, promote America's global leadership in innovation and transform the world around us.

Tagline: **Technology Drives Exploration.**

-end-

## NASA Morning Briefing for Friday, March 22, 2019

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From: Bulletin Intelligence <nasa@BulletinIntelligence.com>  
To: nasa@BulletinIntelligence.com  
Sent: March 22, 2019 6:55:36 AM EDT  
Received: March 22, 2019 6:56:49 AM EDT

Click to access <[<\[Friday, March 22, 2019 7:00 AM EDT\]\(https://urldefense.proofpoint.com/v2/url?u=http-3A\_\_mailview.bulletinintelligence.com\_mailview.aspx-3Fm-3D2019032202nasa-26r-3Demail-2D4499-26l-3D001-2Dcdb-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=8SCPWWAQkPXcpUGYLSYrliL78tpFbKCYeTNEy7qEFcM&s=IjehozrO2sWnAZKJYh6NjPohkQFGsCDuLzFXofypLFs&e=></a></p></div><div data-bbox=\)](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019032202nasa-26r-3Demail-2D4499-26l-3D000-2D9d3-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=8SCPWWAQkPXcpUGYLSYrliL78tpFbKCYeTNEy7qEFcM&s=864SejEcoLmiY6Q-xsAPcGEJDby-ybrOqguVj3Y5G5l&e=> iPhone-optimized online version, download options, archive and an audio reader.</p></div><div data-bbox=)

### Editor's Note

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#### Top Stories <#SECTION\_1>

- Nebraska Flooding Seen From Space In Dramatic Detail <#S1>
- How To Watch NASA's First Spacewalk Of 2019 <#S2>
- NASA Hatches Plan To Solve Mars InSight Mole Mystery <#S3>
- NASA May Send A Smallsat Mission To The Giant Asteroid Pallas <#S4>
- Almost Ready: SpaceX Has Work To Do Before Dragon Is Ready To Carry Crew <#S5>

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### Nebraska Flooding Seen From Space In Dramatic Detail

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### How To Watch NASA's First Spacewalk Of 2019

NBC News <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019032202nasa-26r-3Demail-2D4499-26l-3D004-2D24d-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=8SCPWWAQkPXcpUGYLSYrliL78tpFbKCYeTNEy7qEFcM&s=a-7L6FryQ-ZXy8HijKiqCoINFfIXNkvLf8wLsighm6w&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019032202nasa-26r-3Demail-2D4499-26l-3D004-2D24d-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=8SCPWWAQkPXcpUGYLSYrliL78tpFbKCYeTNEy7qEFcM&s=a-7L6FryQ-ZXy8HijKiqCoINFfIXNkvLf8wLsighm6w&e=>)> (3/21, Chow) "Two NASA astronauts will conduct the first spacewalk of the year Friday at the International Space Station. Flight engineers Anne McClain and Nick Hague are scheduled to begin their excursion at 8:05 a.m. ET. The pair is expected to spend about 6.5 hours performing maintenance along the space station's truss structure."

### NASA Hatches Plan To Solve Mars InSight Mole Mystery

CNET News <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-)

3Fm-3D2019032202nasa-26r-3Demail-2D4499-26l-3D005-2D005-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=8SCPWWAQkPXcpUGYLSYrliL78tpFbKCYeTNEy7qEFcM&s=PUAXDscHjUzpKTMzV0iTFX9euMiLQQW8m6WDFyL9uDo&e=> (3/21, Kooser) "NASA's Mars InSight lander has been a star on the Red Planet. It touched down in November and has since snapped lovely landscapes, deployed a seismometer and unleashed a burrowing heat probe known as the "mole." Everything was going great until the mole got stuck under the surface in February. NASA and the German Aerospace Center (DLR), whose engineers designed the heat probe (also known as the Heat and Physical Properties Package, or HP3), have come up with an initial plan to help crack the mystery of why the mole isn't moving."

#### NASA May Send A Smallsat Mission To The Giant Asteroid Pallas

SPACE <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019032202nasa-26r-3Demail-2D4499-26l-3D006-2D922-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=8SCPWWAQkPXcpUGYLSYrliL78tpFbKCYeTNEy7qEFcM&s=theMvNLCQ1Ub9mP76adWVl9RZ6UUly1MaGvA2xhoLM0&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019032202nasa-26r-3Demail-2D4499-26l-3D006-2D922-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=8SCPWWAQkPXcpUGYLSYrliL78tpFbKCYeTNEy7qEFcM&s=theMvNLCQ1Ub9mP76adWVl9RZ6UUly1MaGvA2xhoLM0&e=>) (3/21, Bartels) "NASA is considering funding a mission that would send a satellite the size of a mini-fridge to the asteroid belt to examine an unexplored world, a massive asteroid scientists call Pallas. The decision will be announced in mid-April. If the mission, dubbed Athena for the Greek goddess the asteroid is named for, is approved, it would follow in the path of NASA's Dawn mission. That spacecraft explored two other giant objects in the asteroid belt, Vesta and Ceres, before its mission ended this fall."

#### Almost Ready: SpaceX Has Work To Do Before Dragon Is Ready To Carry Crew

Space News <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019032202nasa-26r-3Demail-2D4499-26l-3D007-2D866-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=8SCPWWAQkPXcpUGYLSYrliL78tpFbKCYeTNEy7qEFcM&s=-9cYKJ5xf0RD13NUIYivOX-4q28ub5Qu58NJEMiOjmwE&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019032202nasa-26r-3Demail-2D4499-26l-3D007-2D866-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=8SCPWWAQkPXcpUGYLSYrliL78tpFbKCYeTNEy7qEFcM&s=-9cYKJ5xf0RD13NUIYivOX-4q28ub5Qu58NJEMiOjmwE&e=>) (3/21, Foust) "Among the thousands of spectators who watched the Falcon 9 launch of the first Crew Dragon spacecraft from the Kennedy Space Center in the early morning hours of March 2, few had greater interest in the mission than Bob Behnken and Doug Hurley. The two veteran NASA astronauts, with four shuttle flights between them, have for the last few years been part of the commercial crew program, working with Boeing and SpaceX on the design and operations of their vehicles."

Flight

No content.

Earth

#### Nebraska Flooding Seen From Space In Dramatic Detail

SPACE <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019032202nasa-26r-3Demail-2D4499-26l-3D008-2Dd46-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=8SCPWWAQkPXcpUGYLSYrliL78tpFbKCYeTNEy7qEFcM&s=ZiHRCwf4W-UVjLAIBYc\\_12mfbg35iVczo5muWAAqBs&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019032202nasa-26r-3Demail-2D4499-26l-3D008-2Dd46-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=8SCPWWAQkPXcpUGYLSYrliL78tpFbKCYeTNEy7qEFcM&s=ZiHRCwf4W-UVjLAIBYc_12mfbg35iVczo5muWAAqBs&e=>) (3/21, Pappas) "A new series of before-and-after images shows the ongoing flooding in Nebraska in jaw-dropping detail. The images, created by the European Union's Earth-observation program, Copernicus, show rivers turned to lakes and farms and towns underwater. The record flooding is the result of

a “bomb cyclone” that struck the central U.S. last week. The term refers to a storm that forms outside of the tropics in which atmospheric pressure drops very rapidly.”

Meteor? Nope. Aliens? Nah. Fiery Streak Over L.A. Was A Supermoon Marketing Stunt.

Washington Post <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019032202nasa-26r-3Demail-2D4499-26l-3D009-2D785-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=8SCPWWAQkPXcpUGYLSYrliL78tpFbKCYeTNEy7qEFcM&s=U2p8\\_7sXR-wqGUju71zVwCaXiRL3\\_ZWLGKPs0bNUVs&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019032202nasa-26r-3Demail-2D4499-26l-3D009-2D785-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=8SCPWWAQkPXcpUGYLSYrliL78tpFbKCYeTNEy7qEFcM&s=U2p8_7sXR-wqGUju71zVwCaXiRL3_ZWLGKPs0bNUVs&e=>) (3/21, Horton) “From a distance, it was a flash screaming across the Los Angeles skyline on Wednesday evening, prompting wonder and a tinge of fear that the object could be otherworldly. “What is that?” Celeste Perez narrated through a window as the bright streak zoomed over downtown skyscrapers. “Oh my God. It’s a meteor. It’s a fireball. What the hell?””

Was That A Meteor Over Los Angeles? A UFO? Nope. A Supermoon Stunt From Red Bull Lit Up The Sky

USA Today <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019032202nasa-26r-3Demail-2D4499-26l-3D00a-2D7a0-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=8SCPWWAQkPXcpUGYLSYrliL78tpFbKCYeTNEy7qEFcM&s=GmVSO8cqc15LONl9NVPBtUgoNPLsKGayGngH0FYEr4o&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019032202nasa-26r-3Demail-2D4499-26l-3D00a-2D7a0-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=8SCPWWAQkPXcpUGYLSYrliL78tpFbKCYeTNEy7qEFcM&s=GmVSO8cqc15LONl9NVPBtUgoNPLsKGayGngH0FYEr4o&e=>) (3/21, Molina) “No, downtown Los Angeles did not experience a meteoric impact or a visit from aliens. It was all a Hollywood stunt by drink-maker Red Bull. On Wednesday night, Twitter lit up with videos and tweets from people alarmed because of an apparent fireball streaking across the skies of downtown Los Angeles.”

Check Out These Amazing Images Of The Last Supermoon Of 2019, The ‘Super Worm Moon’

USA Today <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019032202nasa-26r-3Demail-2D4499-26l-3D00b-2D620-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=8SCPWWAQkPXcpUGYLSYrliL78tpFbKCYeTNEy7qEFcM&s=g8rS3OBnEIlU0jiBK0fZ4D\\_DrVcNlWkZPuxqOUeb3Y8&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019032202nasa-26r-3Demail-2D4499-26l-3D00b-2D620-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=8SCPWWAQkPXcpUGYLSYrliL78tpFbKCYeTNEy7qEFcM&s=g8rS3OBnEIlU0jiBK0fZ4D_DrVcNlWkZPuxqOUeb3Y8&e=>) (3/21, Molina) “Skywatchers got a treat Wednesday night as the final supermoon of 2019 arrived, which also marked the start of spring. The supermoon was the third and final one of the year, reaching its full potential around 9:43 p.m. EDT, according to EarthSky.”

Huge Meteor Explosion A Wake-Up Call For Planetary Defense

Scientific American <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019032202nasa-26r-3Demail-2D4499-26l-3D00c-2D5f9-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=8SCPWWAQkPXcpUGYLSYrliL78tpFbKCYeTNEy7qEFcM&s=6S5SW2e1mWYF01dGfaCJWA3X3FQLi5TKOuhWFvDuT9s&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019032202nasa-26r-3Demail-2D4499-26l-3D00c-2D5f9-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=8SCPWWAQkPXcpUGYLSYrliL78tpFbKCYeTNEy7qEFcM&s=6S5SW2e1mWYF01dGfaCJWA3X3FQLi5TKOuhWFvDuT9s&e=>) (3/21, David) “Back in late 2018 Earth dodged a bullet. Well, almost—a hefty space rock streaked through the upper atmosphere, detonating with the power of a nuclear bomb over an isolated stretch of the Bering Sea, between Russia and Alaska. The blast occurred roughly 16 miles above the ocean, creating a high-altitude airburst with perhaps 40 percent of the energy released by the destructive February 2013 meteor over Chelyabinsk, Russia.”

## A Solar Storm Hits Earth This Week, Pushing Northern Lights South

CNET News <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019032202nasa-26r-3Demail-2D4499-26l-3D00d-2Da86-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=8SCPWWAQkPXcpUGYLSYrliL78tpFbKCYeTNEy7qEFcM&s=KQfK827MaoW7FdRxnNFapqVN-xLdnIOWvDKkP2uVUuc&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019032202nasa-26r-3Demail-2D4499-26l-3D00d-2Da86-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=8SCPWWAQkPXcpUGYLSYrliL78tpFbKCYeTNEy7qEFcM&s=KQfK827MaoW7FdRxnNFapqVN-xLdnIOWvDKkP2uVUuc&e=>) (3/21, Mack) “After a prolonged quiet period, the sun let off an explosion Wednesday when a new sunspot fired a small solar flare lasting over an hour. The high-energy blast caused disruptions for some radio operators in Europe and Africa, but it was accompanied by a slower-moving, massive cloud of charged particles known as a coronal mass ejection (CME) that will deliver Earth a glancing blow this weekend.”

## NASA Says Arctic Sea Ice Dropped To Seventh-Lowest Extent This Year

Daily Mail (UK) <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019032202nasa-26r-3Demail-2D4499-26l-3D00e-2Da10-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=8SCPWWAQkPXcpUGYLSYrliL78tpFbKCYeTNEy7qEFcM&s=AIGAdBY-WCLF3Vv6KIRTsOZ7hT\\_TAqKh\\_QTDNpKMD1k&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019032202nasa-26r-3Demail-2D4499-26l-3D00e-2Da10-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=8SCPWWAQkPXcpUGYLSYrliL78tpFbKCYeTNEy7qEFcM&s=AIGAdBY-WCLF3Vv6KIRTsOZ7hT_TAqKh_QTDNpKMD1k&e=>) (3/21) “As the impacts of climate change march on, peak volumes of sea ice continue their downward spiral. According to NASA, this past year was no exception to the rule. This winter, the peak volume of Arctic sea ice receded enough to tie the seventh lowest level of all time.”

## Humans in Space

### How To Watch NASA's First Spacewalk Of 2019

NBC News <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019032202nasa-26r-3Demail-2D4499-26l-3D00f-2Daa6-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=8SCPWWAQkPXcpUGYLSYrliL78tpFbKCYeTNEy7qEFcM&s=C9FLTJ2AGrB8ySbRfbovPv1pB7ipPMa7ENaKNLftfu0&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019032202nasa-26r-3Demail-2D4499-26l-3D00f-2Daa6-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=8SCPWWAQkPXcpUGYLSYrliL78tpFbKCYeTNEy7qEFcM&s=C9FLTJ2AGrB8ySbRfbovPv1pB7ipPMa7ENaKNLftfu0&e=>) (3/21, Chow) “Two NASA astronauts will conduct the first spacewalk of the year Friday at the International Space Station. Flight engineers Anne McClain and Nick Hague are scheduled to begin their excursion at 8:05 a.m. ET. The pair is expected to spend about 6.5 hours performing maintenance along the space station's truss structure.”

### Watch Live Friday! Astronauts Take Spacewalk Outside Space Station

SPACE <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019032202nasa-26r-3Demail-2D4499-26l-3D010-2D59c-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=8SCPWWAQkPXcpUGYLSYrliL78tpFbKCYeTNEy7qEFcM&s=nCRHDsDF0iLGJfLmemJIE2U5b2vGlxl-bFyf5\\_b1r5w&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019032202nasa-26r-3Demail-2D4499-26l-3D010-2D59c-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=8SCPWWAQkPXcpUGYLSYrliL78tpFbKCYeTNEy7qEFcM&s=nCRHDsDF0iLGJfLmemJIE2U5b2vGlxl-bFyf5_b1r5w&e=>) (3/21) “Two astronauts will venture outside the International Space Station Friday (March 22) to replace old batteries on the station's solar arrays and you can watch it live here, courtesy of NASA TV. NASA astronauts Anne McClain and Nick Hague — both first-time spacewalkers — will begin the spacewalk trifecta with a planned 6.5-hour excursion outside the orbiting laboratory. They will exit the Quest airlock at 8:05 a.m. EDT (1200 GMT).”

### Space Station Astronauts Prep For Two Spacewalks In One Week

Astronomy News <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019032202nasa-26r-3Demail-2D4499-26l-3D011-2Dac8-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=8SCPWWAQkPXcpUGYLSYrliL78tpFbKCYeTNEy7qEFcM&s=L0m9bbsNbfPACLtvdLxzaCjUioChDLT9ELtiqW-fA&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019032202nasa-26r-3Demail-2D4499-26l-3D011-2Dac8-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=8SCPWWAQkPXcpUGYLSYrliL78tpFbKCYeTNEy7qEFcM&s=L0m9bbsNbfPACLtvdLxzaCjUioChDLT9ELtiqW-fA&e=>) (3/21, Haynes) "On March 22, two astronauts will take the first spacewalk of Expedition 59 in order to upgrade aging batteries on the International Space Station. The astronauts will be Nick Hague and Anne McClain, and it will be the first spacewalk for both of them. Next week, on March 29, McClain will venture into space again, joined by Christina Koch. This will mark the first all-female spacewalk, a historic event."

#### Boeing Reaches Long Awaited SLS Engine Section Milestone As NASA Makes EM-1 2020 Schedule Push

NASA Space Flight <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019032202nasa-26r-3Demail-2D4499-26l-3D012-2D7ba-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=8SCPWWAQkPXcpUGYLSYrliL78tpFbKCYeTNEy7qEFcM&s=8bbwnhIbB04fXeRbUBLG\\_dOvMWgCFhnX9u4UTR9oWi8&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019032202nasa-26r-3Demail-2D4499-26l-3D012-2D7ba-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=8SCPWWAQkPXcpUGYLSYrliL78tpFbKCYeTNEy7qEFcM&s=8bbwnhIbB04fXeRbUBLG_dOvMWgCFhnX9u4UTR9oWi8&e=>) (3/21, Sloss) "Space Launch System (SLS) Core Stage prime contractor Boeing reached a long-awaited milestone this week with completion of standalone work on the engine section for the first vehicle. The most complex section of NASA's new rocket stage is well behind more than one schedule revision, and because it is the critical path in the schedule the delays have pushed some estimates for the vehicle's first launch into 2021."

#### Boeing's Starliner Test Flight Delayed By Months

Astronomy News <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019032202nasa-26r-3Demail-2D4499-26l-3D013-2D06e-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=8SCPWWAQkPXcpUGYLSYrliL78tpFbKCYeTNEy7qEFcM&s=ERi-QxbJrxn2ILkAa-s-HAXvYaLgD8zDqCLy2Cr9TEs&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019032202nasa-26r-3Demail-2D4499-26l-3D013-2D06e-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=8SCPWWAQkPXcpUGYLSYrliL78tpFbKCYeTNEy7qEFcM&s=ERi-QxbJrxn2ILkAa-s-HAXvYaLgD8zDqCLy2Cr9TEs&e=>) (3/21, Haynes) "The schedule for Boeing's Starliner spacecraft has slipped again, and the company will no longer launch an uncrewed test flight to the International Space Station in April, Reuters has reported. The flight is being pushed back to August. Starliner is Boeing's entry for NASA's Commercial Crew Program to ferry both cargo and people to the ISS and back."

#### Boeing Pushes Back Test Flights For NASA Human Spaceflight Program Till Later This Year

Tech Times <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019032202nasa-26r-3Demail-2D4499-26l-3D014-2D7c5-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=8SCPWWAQkPXcpUGYLSYrliL78tpFbKCYeTNEy7qEFcM&s=OexXk5e0KUqA3KNB8965TyOCEwM3bKnMGegsZBB0BnM&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019032202nasa-26r-3Demail-2D4499-26l-3D014-2D7c5-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=8SCPWWAQkPXcpUGYLSYrliL78tpFbKCYeTNEy7qEFcM&s=OexXk5e0KUqA3KNB8965TyOCEwM3bKnMGegsZBB0BnM&e=>) (3/21, Samson) "Boeing is delaying the first uncrewed test flight of the CST-100 Starliner, the vehicle that was contracted to ferry astronauts to the International Space Station. The first uncrewed test flight of the Starliner was originally scheduled to happen in April. New reports, however, revealed that the launch will be pushed back for at least three months. The crewed test flight was also moved from August to November 2019."

#### Report Claims Boeing Has Been Forced To Delay First Starliner Launch By Months

BGR <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019032202nasa-26r-3Demail-2D4499-26l-3D015-2Dd9c-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=8SCPWWAQkPXcpUGYLSYrliL78tpFbKCYeTNEy7qEFcM&s=OHjI4GiEDD77S65V9\\_Mx-zG0ZkCax48Hh7qvYlaEgxY&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019032202nasa-26r-3Demail-2D4499-26l-3D015-2Dd9c-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=8SCPWWAQkPXcpUGYLSYrliL78tpFbKCYeTNEy7qEFcM&s=OHjI4GiEDD77S65V9_Mx-zG0ZkCax48Hh7qvYlaEgxY&e=>) (3/21, Wehner) "NASA needs a way to get astronauts to the International Space Station that doesn't involve paying Russia heaps of money, so it struck deals with both SpaceX and Boeing to build crew capsules capable of fulfilling that need. Earlier this month, SpaceX successfully sent its Crew Dragon capsule to the International Space Station, paving the way for crew tests to be conducted within months, but what about Boeing?"

#### Testing The Value Of Artificial Gravity For Astronaut Health

Space Daily <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019032202nasa-26r-3Demail-2D4499-26l-3D016-2Dcfd-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=8SCPWWAQkPXcpUGYLSYrliL78tpFbKCYeTNEy7qEFcM&s=Y48SLY3oPP5\\_eO4kTbrK6J\\_4LUaM2RwvFCc76ygH4z8&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019032202nasa-26r-3Demail-2D4499-26l-3D016-2Dcfd-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=8SCPWWAQkPXcpUGYLSYrliL78tpFbKCYeTNEy7qEFcM&s=Y48SLY3oPP5_eO4kTbrK6J_4LUaM2RwvFCc76ygH4z8&e=>) (3/22) "Test subjects in Cologne, Germany will take to their beds for 60 days from 25 March as part of a groundbreaking study, funded by European Space Agency ESA and US space agency NASA, into how artificial gravity could help astronauts stay healthy in space. Carried out at the German Aerospace Center's (DLR) :envihab facility, the long-term bedrest study is the first of its kind to be conducted in partnership between the two agencies."

#### Moon to Mars

##### NASA Hatches Plan To Solve Mars InSight Mole Mystery

CNET News <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019032202nasa-26r-3Demail-2D4499-26l-3D017-2D999-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=8SCPWWAQkPXcpUGYLSYrliL78tpFbKCYeTNEy7qEFcM&s=d8522KjWi1fDZq2dAvt8eoJtVLHO\\_9GubI0ZcpuTjk8&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019032202nasa-26r-3Demail-2D4499-26l-3D017-2D999-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=8SCPWWAQkPXcpUGYLSYrliL78tpFbKCYeTNEy7qEFcM&s=d8522KjWi1fDZq2dAvt8eoJtVLHO_9GubI0ZcpuTjk8&e=>) (3/21, Kooser) "NASA's Mars InSight lander has been a star on the Red Planet. It touched down in November and has since snapped lovely landscapes, deployed a seismometer and unleashed a burrowing heat probe known as the "mole." Everything was going great until the mole got stuck under the surface in February. NASA and the German Aerospace Center (DLR), whose engineers designed the heat probe (also known as the Heat and Physical Properties Package, or HP3), have come up with an initial plan to help crack the mystery of why the mole isn't moving."

##### Stuck Mars InSight Lander To Conduct Short Burst Of Hammering In Search Of Answers

New Atlas <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019032202nasa-26r-3Demail-2D4499-26l-3D018-2D7b7-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=8SCPWWAQkPXcpUGYLSYrliL78tpFbKCYeTNEy7qEFcM&s=QIK-iQ53Xc2OJVuovQj8TZBkHXpAdQChduoUnXgSXl0&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019032202nasa-26r-3Demail-2D4499-26l-3D018-2D7b7-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=8SCPWWAQkPXcpUGYLSYrliL78tpFbKCYeTNEy7qEFcM&s=QIK-iQ53Xc2OJVuovQj8TZBkHXpAdQChduoUnXgSXl0&e=>) (3/21, Lavars) "Digging into the surface of another planet for the first time is going to bring some surprises, you'd just hope that those surprises don't include your digging being brought to a halt before things have even begun. This is the problem scientists working on the Mars InSight mission have been forced to contend with, though they are now moving ahead with new plans to shed light on the blockage."

## Engineers Still Studying Problem With InSight Heat Flow Probe

SPACE <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019032202nasa-26r-3Demail-2D4499-26l-3D019-2D217-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=8SCPWWAQkPXcpUGYLSYrliL78tpFbKCYeTNEy7qEFcM&s=3Sp2BX0nvu-yU5nMnaAvsmG-HUJaKgSChsDOyXVUcVM&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019032202nasa-26r-3Demail-2D4499-26l-3D019-2D217-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=8SCPWWAQkPXcpUGYLSYrliL78tpFbKCYeTNEy7qEFcM&s=3Sp2BX0nvu-yU5nMnaAvsmG-HUJaKgSChsDOyXVUcVM&e=>) (3/21, Foust) “Engineers are still trying to understand why one of the main instruments on NASA’s InSight Mars lander is stuck just below the Martian surface. In presentations at the 50th Lunar and Planetary Science Conference here March 18, project officials said they plan to spend the next few weeks determining why the probe on the Heat and Physical Properties Package (HP3) instrument, designed to measure the heat flow in the interior of the planet, is stuck about 30 centimeters below the surface, well short of its desired depth of three to five meters.”

## Vice President May Tell NASA To Accelerate Lunar Landings

Ars Technica <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019032202nasa-26r-3Demail-2D4499-26l-3D01a-2Dd1e-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=8SCPWWAQkPXcpUGYLSYrliL78tpFbKCYeTNEy7qEFcM&s=PSrnnFT-Zf9q3seTkcc6YUkIOAvK4ldoMPQH8nL3uno&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019032202nasa-26r-3Demail-2D4499-26l-3D01a-2Dd1e-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=8SCPWWAQkPXcpUGYLSYrliL78tpFbKCYeTNEy7qEFcM&s=PSrnnFT-Zf9q3seTkcc6YUkIOAvK4ldoMPQH8nL3uno&e=>) (3/21) “One of the panelists who will appear at a National Space Council meeting next Tuesday said to expect “a few fireworks” during the discussion, which will focus on NASA’s efforts to return humans to the Moon. The meeting of this council that oversees US spaceflight policy will be held in Huntsville, Ala., and led by Vice President Mike Pence. University of Colorado Boulder astrophysicist Jack Burns, one of six speakers scheduled for the meeting, said the current timeline for NASA to send humans to the Moon lacks urgency.”

## Why Bridenstine Put The Space Launch System On Notice

Aviation Week <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019032202nasa-26r-3Demail-2D4499-26l-3D01b-2Db67-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=8SCPWWAQkPXcpUGYLSYrliL78tpFbKCYeTNEy7qEFcM&s=PBIXFBarDFbAiMgNcSdGS cNODCXU72n2W9E1ZcLtTs&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019032202nasa-26r-3Demail-2D4499-26l-3D01b-2Db67-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=8SCPWWAQkPXcpUGYLSYrliL78tpFbKCYeTNEy7qEFcM&s=PBIXFBarDFbAiMgNcSdGS cNODCXU72n2W9E1ZcLtTs&e=>) (3/21) “In its quest to begin the next phase of human space exploration as quickly as possible, NASA is willing to consider a new ride for the Orion capsule’s flight test around the Moon, dealing a potential third strike to the agency’s over-budget and long-delayed Space Launch System (SLS) heavy-lift rocket.”

## Scientists Put Mars 2020 Rover Through Its Paces

Tech Times <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019032202nasa-26r-3Demail-2D4499-26l-3D01c-2Da35-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=8SCPWWAQkPXcpUGYLSYrliL78tpFbKCYeTNEy7qEFcM&s=1Xp5pyuu057aU5lj2xL5Gnm8LK3LEZzlhPfb9yFGcP8&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019032202nasa-26r-3Demail-2D4499-26l-3D01c-2Da35-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=8SCPWWAQkPXcpUGYLSYrliL78tpFbKCYeTNEy7qEFcM&s=1Xp5pyuu057aU5lj2xL5Gnm8LK3LEZzlhPfb9yFGcP8&e=>) (3/21, Samson) “NASA’s still-unnamed 2020 Mars rover has been subjected to a variety of tests in preparation for its launch to the Red Planet next year. In a new blog post, the U.S. space agency detailed all the intense and thorough process to make sure that the robotic explorer will survive the harsh environment of Earth’s next-door neighbor.”

## NASA’s 2020 Budget Proposal Backs Mars Sample Return



Aviation Week <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019032202nasa-26r-3Demail-2D4499-26l-3D01d-2D2d9-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=8SCPWWAQkPXcpUGYLSYrliL78tpFbKCYeTNEy7qEFcM&s=PodWrsR\\_sUR4MEmFrb7icPK\\_hmgNTyuxaaFpWRoplWw&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019032202nasa-26r-3Demail-2D4499-26l-3D01d-2D2d9-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=8SCPWWAQkPXcpUGYLSYrliL78tpFbKCYeTNEy7qEFcM&s=PodWrsR_sUR4MEmFrb7icPK_hmgNTyuxaaFpWRoplWw&e=>) (3/21, Carreau) "NASA's 2020 budget proposal seeks a \$109 million investment in a Mars sample return mission, probably conducted in partnership with the European Space Agency (ESA), and launched as soon as 2026. The return of rock samples to further assess whether Mars once and possibly still hosts some form of life is considered a high priority by the National Academy of Sciences, Engineering and Medicine."

#### NASA's Lassoing Of Moon's Potential For Future Use Starts With A Trove Of Rocks

San Francisco Chronicle <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019032202nasa-26r-3Demail-2D4499-26l-3D01e-2Dd14-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=8SCPWWAQkPXcpUGYLSYrliL78tpFbKCYeTNEy7qEFcM&s=i1VJ\\_Zfw2puxSBJ0ikjPqfM2GvKx8mGlyKyUvPLpCno&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019032202nasa-26r-3Demail-2D4499-26l-3D01e-2Dd14-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=8SCPWWAQkPXcpUGYLSYrliL78tpFbKCYeTNEy7qEFcM&s=i1VJ_Zfw2puxSBJ0ikjPqfM2GvKx8mGlyKyUvPLpCno&e=>) (3/21) "A trove of rare moon rocks, preserved untouched for nearly half a century, will be unsealed by Bay Area scientists this summer and used for experiments that NASA hopes will solve lingering mysteries about the lunar surface and pave the way for future habitation of Earth's natural satellite. Nine research teams, including two at NASA Ames Research Center in Mountain View and one at UC Berkeley, were selected this month to conduct high-tech studies of a special collection of rocks that astronauts dug up during the last Apollo mission in 1972 and placed in hermetically sealed containers."

#### Louisville-born Dream Chaser Passes Latest NASA Review, Priming Spacecraft For 2021 Mission

Denver Post <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019032202nasa-26r-3Demail-2D4499-26l-3D01f-2Da89-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=8SCPWWAQkPXcpUGYLSYrliL78tpFbKCYeTNEy7qEFcM&s=JizZGTluPGf-K\\_NjrJWrnOCYDZvVfqa2SGctI-GpJ-0&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019032202nasa-26r-3Demail-2D4499-26l-3D01f-2Da89-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=8SCPWWAQkPXcpUGYLSYrliL78tpFbKCYeTNEy7qEFcM&s=JizZGTluPGf-K_NjrJWrnOCYDZvVfqa2SGctI-GpJ-0&e=>) (3/21) "Sierra Nevada Corporation announced Thursday that its Dream Chaser spacecraft had passed the latest in a series of NASA milestone tests, likely setting the stage for the aerospace firm to launch the first of its unmanned supply missions in early 2021. Heralded as the successor to NASA's space shuttle, the Louisville-born vehicle will bring supplies, science experiments and other cargo to the International Space Station without any crew on board."

#### Solar System and Beyond

##### NASA May Send A Smallsat Mission To The Giant Asteroid Pallas

SPACE <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019032202nasa-26r-3Demail-2D4499-26l-3D020-2D942-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=8SCPWWAQkPXcpUGYLSYrliL78tpFbKCYeTNEy7qEFcM&s=ePBljZHewTlpTHYyIgzazc5yx2HIRBbiyRMVahQ5lLg&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019032202nasa-26r-3Demail-2D4499-26l-3D020-2D942-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=8SCPWWAQkPXcpUGYLSYrliL78tpFbKCYeTNEy7qEFcM&s=ePBljZHewTlpTHYyIgzazc5yx2HIRBbiyRMVahQ5lLg&e=>) (3/21, Bartels) "NASA is considering funding a mission that would send a satellite the size of a mini-fridge to the asteroid belt to examine an unexplored world, a massive asteroid scientists call Pallas. The decision will be announced in mid-April. If the mission, dubbed Athena for the Greek goddess the asteroid is named for, is approved, it would follow in the path of NASA's Dawn mission. That spacecraft explored two other giant objects in the asteroid belt, Vesta and Ceres, before its mission ended this fall."

## Scientists Seek To Send A Drone To Saturn's Moon, Titan

Cosmos Magazine (AUS) <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019032202nasa-26r-3Demail-2D4499-26l-3D021-2Da11-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=8SCPWWAQkPXcpUGYLSYrliL78tpFbKCYeTNEy7qEFcM&s=75mY49DhWhuTPzs\\_wSw2\\_tXVtc3fsYsHzMiSfnhOhns&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019032202nasa-26r-3Demail-2D4499-26l-3D021-2Da11-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=8SCPWWAQkPXcpUGYLSYrliL78tpFbKCYeTNEy7qEFcM&s=75mY49DhWhuTPzs_wSw2_tXVtc3fsYsHzMiSfnhOhns&e=>)> (3/22) "Scientists looking to build on the legacy of the first Apollo moon landing, 50 years ago this summer, are turning their attention not only back to the moon and Mars, but to the prospect of visiting much more distant worlds. One is Saturn's giant moon Titan, about which very little was known when Neil Armstrong and Buzz Aldrin first set foot on the moon in 1969."

## NASA Finds Near-Earth Asteroid Bennu Is Ejecting Rocky Material Into Space

Axios <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019032202nasa-26r-3Demail-2D4499-26l-3D022-2D747-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=8SCPWWAQkPXcpUGYLSYrliL78tpFbKCYeTNEy7qEFcM&s=RT1Xb0pSHUr1LHu-9r1h1CKqzRTiMHkR7PXxHNFsrxl&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019032202nasa-26r-3Demail-2D4499-26l-3D022-2D747-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=8SCPWWAQkPXcpUGYLSYrliL78tpFbKCYeTNEy7qEFcM&s=RT1Xb0pSHUr1LHu-9r1h1CKqzRTiMHkR7PXxHNFsrxl&e=>)> (3/21, Freedman) "The near-Earth asteroid Bennu is an active asteroid that periodically ejects rocky material into space, according to early results from NASA's OSIRIS-REx Mission. Why it matters: This is surprising, as the vast majority of known asteroids are inactive. In addition, NASA scientists hoping to land a spacecraft on Bennu to take samples back to Earth in 2023 have found the asteroid contains larger rocks than earlier thought, which could complicate the sampling mission."

## NASA's Chandra Space Telescope Captures The Tempest In A Cosmic 'Teacup'

SPACE <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019032202nasa-26r-3Demail-2D4499-26l-3D023-2Db09-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=8SCPWWAQkPXcpUGYLSYrliL78tpFbKCYeTNEy7qEFcM&s=UgftsJRukPcJbMycXfP1fumy t31BzGT8lf0GHINOR1E&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019032202nasa-26r-3Demail-2D4499-26l-3D023-2Db09-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=8SCPWWAQkPXcpUGYLSYrliL78tpFbKCYeTNEy7qEFcM&s=UgftsJRukPcJbMycXfP1fumy t31BzGT8lf0GHINOR1E&e=>)> (3/21, Mathewson) "A powerful quasar has caused a raging storm in a distant cosmic structure known as the "Teacup." The quasar, which is powered by a supermassive black hole, is located at the center of a distant galaxy about 1.1 billion light-years from Earth. The galaxy, formally known as SDSS 1430+1339, hosts a teacup-shaped structure, in which the quasar is brewing."

## Fermi Satellite Clocks Pulsar Going 2.5 Million Miles Per Hour

UPI <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019032202nasa-26r-3Demail-2D4499-26l-3D024-2D753-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=8SCPWWAQkPXcpUGYLSYrliL78tpFbKCYeTNEy7qEFcM&s=uuxN4Y5OLTcm8XJB-jn7eBsq-absGSPfQeKTKKoGaFg&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019032202nasa-26r-3Demail-2D4499-26l-3D024-2D753-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=8SCPWWAQkPXcpUGYLSYrliL78tpFbKCYeTNEy7qEFcM&s=uuxN4Y5OLTcm8XJB-jn7eBsq-absGSPfQeKTKKoGaFg&e=>)> (3/21, Hays) "Astronomers have discovered a pulsar traveling at unprecedented speeds. Observations by NASA's Fermi Gamma-ray Space Telescope suggest the star is moving through space at 2.5 million miles per hour. Pulsars are extremely dense neutron stars that spin rapidly, producing a pulsing jet. The pulsing radio-emitting jet, or tail, points toward the remnants of a recent supernova explosion."

## X-Ray Chimneys At The Centre Of The Milky Way Are Blowing Cosmic Bubbles

Forbes <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019032202nasa-26r-3Demail-2D4499-26l-3D025-2D6e4-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=8SCPWWAQkPXcpUGYLSYrliL78tpFbKCYeTNEy7qEFcM&s=BbdmUtPcWeOcjWwpkaRc65CgMSZqhRiStfBxRIZF0yY&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019032202nasa-26r-3Demail-2D4499-26l-3D025-2D6e4-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=8SCPWWAQkPXcpUGYLSYrliL78tpFbKCYeTNEy7qEFcM&s=BbdmUtPcWeOcjWwpkaRc65CgMSZqhRiStfBxRIZF0yY&e=>) (3/21, Parnell) “Astronomers have discovered two massive galactic chimneys that provide release valves for the vast energies at the center of the Milky Way. Every galaxy in the Universe produces new stars, but some are operating at a furious rate while others are only birthing a few baby stars by comparison. Even over the course of a galaxy’s lifetime, the rate of star production changes. Finding out why that happens will help us to understand how stars work to provide the ingredients for life – or not.”

#### Physicists Think They’ve Figured Out The Most Extreme Chemical Factories In The Universe

LiveScience <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019032202nasa-26r-3Demail-2D4499-26l-3D026-2Dce5-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=8SCPWWAQkPXcpUGYLSYrliL78tpFbKCYeTNEy7qEFcM&s=4mOPYvY68l0AyQjX6PBdx5sBylkRQdnijPV3P\\_Utb2w&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019032202nasa-26r-3Demail-2D4499-26l-3D026-2Dce5-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=8SCPWWAQkPXcpUGYLSYrliL78tpFbKCYeTNEy7qEFcM&s=4mOPYvY68l0AyQjX6PBdx5sBylkRQdnijPV3P_Utb2w&e=>) (3/21, Letzter) “Our world is full of chemicals that shouldn’t exist. Lighter elements, like carbon and oxygen and helium, exist because of intense fusion energies crushing protons together inside stars. But elements from cobalt to nickel to copper, up through iodine and xenon, and including uranium and plutonium, are just too heavy to be produced by stellar fusion. Even the core of the biggest, brightest sun isn’t hot and pressurized enough to make anything heavier than iron.”

#### Rumors Of A Quasar’s Death May Have Been Premature

Astronomy Now (UK) <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019032202nasa-26r-3Demail-2D4499-26l-3D027-2Df0e-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=8SCPWWAQkPXcpUGYLSYrliL78tpFbKCYeTNEy7qEFcM&s=AZnNXEM9CwFf9w9K7KULm5Ly7me5WGGy3DMwawNg5Yg&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019032202nasa-26r-3Demail-2D4499-26l-3D027-2Df0e-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=8SCPWWAQkPXcpUGYLSYrliL78tpFbKCYeTNEy7qEFcM&s=AZnNXEM9CwFf9w9K7KULm5Ly7me5WGGy3DMwawNg5Yg&e=>) (3/21) “A voracious supermassive black hole at the center of a galaxy 1.1 billion light years away is energising a brilliant quasar, sucking in huge amounts of gas and dust that are accelerated to extreme velocities, causing the doomed material to heat up and in the process emit more radiation than all the stars in the galaxy combined. The galaxy, formally known as SDSS 1430+1339, looks somewhat like a cosmic teacup thanks to a curved “handle” of optical and X-ray light extending some 30,000 light years from the black hole that surrounds a giant bubble-like void. The bubble presumably formed after one or more eruptions at the core of the galaxy. Radio emissions show the presence of a similar bubble-like structure on the opposite side of the galaxy’s core.”

#### Stunning Picture Shows Dead Star Racing Away From A Massive Explosion

New Scientist <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019032202nasa-26r-3Demail-2D4499-26l-3D028-2Dd58-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=8SCPWWAQkPXcpUGYLSYrliL78tpFbKCYeTNEy7qEFcM&s=T3iG0tiqD1G06jff-eJLRYKBm-PEGIIUWJfhyCj7lzk&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019032202nasa-26r-3Demail-2D4499-26l-3D028-2Dd58-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=8SCPWWAQkPXcpUGYLSYrliL78tpFbKCYeTNEy7qEFcM&s=T3iG0tiqD1G06jff-eJLRYKBm-PEGIIUWJfhyCj7lzk&e=>) (3/21, Whyte) “Need a kick-start? You would be hard-pressed to find one more powerful than a supernova – a sudden explosion in which a dying star ejects most of its mass. That is what happened to the pulsar pictured here, sending it racing away from its home with a tail of particles and magnetic energy stretching behind it for 13 light years. In the image above, the star is at the left end of the yellow tail and is heading away from the big bubble.”

## Ultra-sharp Images Make Old Stars Look Absolutely Marvelous

Space Daily <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019032202nasa-26r-3Demail-2D4499-26l-3D029-2D8ca-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=8SCPWWAQkPXcpUGYLSYrliL78tpFbKCYeTNEy7qEFcM&s=pe6NHOTOnmooqr-o8AmwUYYP-BzF0P67GiHFqVE6gY&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019032202nasa-26r-3Demail-2D4499-26l-3D029-2D8ca-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=8SCPWWAQkPXcpUGYLSYrliL78tpFbKCYeTNEy7qEFcM&s=pe6NHOTOnmooqr-o8AmwUYYP-BzF0P67GiHFqVE6gY&e=>) (3/22) “Just as high-definition imaging is transforming home entertainment, it is also advancing how astronomers study the universe. “Ultra-sharp adaptive optics images from the Gemini Observatory allowed us to determine the ages of some of the oldest stars in our galaxy,” said Leandro Kerber of the Universidade de Sao Paulo and Universidade Estadual de Santa Cruz, Brazil. Kerber led a large international research team that published their results in the April 2019 issue of the Monthly Notices of the Royal Astronomical Society.”

## Space Tech

### NASA Engineers Create Special Copper Alloy To 3D Print Rocket Parts

SlashGear <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019032202nasa-26r-3Demail-2D4499-26l-3D02a-2Df18-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=8SCPWWAQkPXcpUGYLSYrliL78tpFbKCYeTNEy7qEFcM&s=HK7FnXu6UrAnJKXVprPlpE CN-xy\\_LRU\\_v7ziaDCmZB0&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019032202nasa-26r-3Demail-2D4499-26l-3D02a-2Df18-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=8SCPWWAQkPXcpUGYLSYrliL78tpFbKCYeTNEy7qEFcM&s=HK7FnXu6UrAnJKXVprPlpE CN-xy_LRU_v7ziaDCmZB0&e=>) (3/21, Roston) “NASA researchers with the Glenn Research Center and Marshall Space Flight Center teamed up to develop GRCop-42, a copper-based high strength alloy with high conductivity. When used with a Concept Laser M2 3D printer and Power Bed Fusion AM system, the new material can be used to 3D print rocket parts that are resistant to deformation and remain strong even at high temperatures.”

### Why This Poisonous Gas Could Be A Sign Of Alien Life

SPACE <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019032202nasa-26r-3Demail-2D4499-26l-3D02b-2Db2e-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=8SCPWWAQkPXcpUGYLSYrliL78tpFbKCYeTNEy7qEFcM&s=addhXAUBleHt1dlOhQ809XHLRm5VIGqLsIVMghdo0IA&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019032202nasa-26r-3Demail-2D4499-26l-3D02b-2Db2e-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=8SCPWWAQkPXcpUGYLSYrliL78tpFbKCYeTNEy7qEFcM&s=addhXAUBleHt1dlOhQ809XHLRm5VIGqLsIVMghdo0IA&e=>) (3/21, Wall) “Scientists hunting for signs of alien life shouldn’t be so quick to dismiss carbon monoxide (CO), a new study suggests. The substance is highly poisonous to people and most other animal life here on Earth because it latches firmly onto hemoglobin, preventing this blood protein from carrying vital oxygen in the required quantities.”

### Poisonous Gas Could Be A Precursor To Alien Life

Fox News <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019032202nasa-26r-3Demail-2D4499-26l-3D02c-2Dca0-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=8SCPWWAQkPXcpUGYLSYrliL78tpFbKCYeTNEy7qEFcM&s=q4nHItakcokZTPQhoqaQirhO uTnVFFLq4Zq3xuAQRl0&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019032202nasa-26r-3Demail-2D4499-26l-3D02c-2Dca0-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=8SCPWWAQkPXcpUGYLSYrliL78tpFbKCYeTNEy7qEFcM&s=q4nHItakcokZTPQhoqaQirhO uTnVFFLq4Zq3xuAQRl0&e=>) (3/21, Ciaccia) “If scientists are looking for E.T. in space, they may want to consider a variable that could be harmful to all of humanity — carbon monoxide. A new study suggests that the poisonous gas, which prevents blood from carrying oxygen to vital parts of the body, could be a promising “biosignature” for extraterrestrial life and scientists should consider it, despite its potential for harm.”

## A World Water Day Surprise – The Moon May Be A Great Place To Make Water

Forbes <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019032202nasa-26r-3Demail-2D4499-26l-3D02d-2D5be-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=8SCPWWAQkPXcpUGYLSYrliL78tpFbKCYeTNEy7qEFcM&s=TM3Ba64ns6mouZgJ66s1QWV8678j9hJovqUluKvKx8&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019032202nasa-26r-3Demail-2D4499-26l-3D02d-2D5be-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=8SCPWWAQkPXcpUGYLSYrliL78tpFbKCYeTNEy7qEFcM&s=TM3Ba64ns6mouZgJ66s1QWV8678j9hJovqUluKvKx8&e=>) (3/21, Shepherd) “World Water Day is March 22nd, 2019, and the theme is “leave no one behind.” In 2010, the United Nations (UN) established that access to water is a human right. Billions of people still live without safe drinking water, particularly marginalized groups around the world. Water is essential to life on Earth and other places in the solar system that we may visit at some point. Earlier in the week, I delivered a keynote lecture at Athens Academy Water Day. I ended the lecture with a picture of the dry, barren landscape of the Martian surface. I made the point that even if we go to the Moon or Mars, water will be required because it is essential to life. Ironically, I ran across a new study last night by a group of NASA scientists. They argue that our Moon may be natural “water-making” factory. Here’s why.”

## Various

### One Of These Four Missions Will Be Selected As NASA’s Next Flagship For Astrophysics

Forbes <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019032202nasa-26r-3Demail-2D4499-26l-3D02e-2Dc9e-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=8SCPWWAQkPXcpUGYLSYrliL78tpFbKCYeTNEy7qEFcM&s=m5y7G7c6Umi1aOPVRs62ovKFTuWvLdUOhxRehdmvQDA&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019032202nasa-26r-3Demail-2D4499-26l-3D02e-2Dc9e-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=8SCPWWAQkPXcpUGYLSYrliL78tpFbKCYeTNEy7qEFcM&s=m5y7G7c6Umi1aOPVRs62ovKFTuWvLdUOhxRehdmvQDA&e=>) (3/22, Siegel) “When it comes to exploring the Universe and understanding what it’s made of, how it came to be, and what its ultimate fate is, no observatory has taught us more than the Hubble Space Telescope. It was the first flagship mission for NASA Astrophysics, the most revolutionary class of missions that NASA invests in of any type. What we’ve gained, both scientifically and in terms of human perspective, is immeasurable.”

### NASA Is Ever-Present In Houston Area For More Than 50 Years

Houston Chronicle <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019032202nasa-26r-3Demail-2D4499-26l-3D02f-2D98f-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=8SCPWWAQkPXcpUGYLSYrliL78tpFbKCYeTNEy7qEFcM&s=C1NfZIUoHhuOdd7v8nxdgL8iMDaj-ih65wscy0DI9o&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019032202nasa-26r-3Demail-2D4499-26l-3D02f-2D98f-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=8SCPWWAQkPXcpUGYLSYrliL78tpFbKCYeTNEy7qEFcM&s=C1NfZIUoHhuOdd7v8nxdgL8iMDaj-ih65wscy0DI9o&e=>) (3/21, Stuckey, Feser) “The 1,600-acre plot south of Houston was desolate and remote. Cattle grazed the land, nestled between old farming and fishing communities and a body of water known as Clear Lake. It was 1961 and the fields soon would be home to NASA’s Manned Spacecraft Center, a \$60 million hub for human spaceflight. The site, named the Johnson Space Center in 1973 in honor of former President Lyndon B. Johnson, beat out 22 other locations to host the greatest minds of the generation.”

### Celebrate NASA’s Apollo 11 Mission 50th Anniversary With New USPS Stamps

CNET News <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019032202nasa-26r-3Demail-2D4499-26l-3D030-2Dc3b-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019032202nasa-26r-3Demail-2D4499-26l-3D030-2Dc3b-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD)

8-mHkTTiYCEf5ROYus&m=8SCPWWAQkPXcpUGYLSYrliL78tpFbKCYeTNEy7qEFcM&s=\_trTC-4J3wTnyw1H7aNBPCRRW5d9M0Zz7ia1zM8Lc0&e=> (3/21, Burton) "If you want to give the 50th anniversary of the first moon landing your stamp of approval, the US Postal Service (USPS) has you covered. USPS announced on Wednesday two new stamps commemorating the Apollo 11 lunar landing mission by astronauts Neil Armstrong, Buzz Aldrin and Michael Collins in 1969."

#### Santa Susana Field Lab Cleanup Agreement Penned Years Ago Is 'Not Achievable,' Report Says

Los Angeles Daily News <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019032202nasa-26r-3Demail-2D4499-26l-3D031-2D8e9-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=8SCPWWAQkPXcpUGYLSYrliL78tpFbKCYeTNEy7qEFcM&s=mhRfZ-X2LXu-KXDo7y\\_n7Q3UhyB-ptRKinRq4AZeK5Q&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019032202nasa-26r-3Demail-2D4499-26l-3D031-2D8e9-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=8SCPWWAQkPXcpUGYLSYrliL78tpFbKCYeTNEy7qEFcM&s=mhRfZ-X2LXu-KXDo7y_n7Q3UhyB-ptRKinRq4AZeK5Q&e=>) (3/21, Grigoryants) "Officials with the state agency that oversees the cleanup of the contaminated Santa Susana Field Laboratory said it will hold NASA "accountable" if it violates an agreement the agency inked several years ago. The letter, sent by the state Department of Toxic Substance Control Wednesday, March 20, follows NASA's reply to a report on the agency's progress on environmental remediation activities at the 2,900-acre site, nested between Chatsworth and Simi Valley."

Other

#### Almost Ready: SpaceX Has Work To Do Before Dragon Is Ready To Carry Crew

Space News <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019032202nasa-26r-3Demail-2D4499-26l-3D032-2D556-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=8SCPWWAQkPXcpUGYLSYrliL78tpFbKCYeTNEy7qEFcM&s=jANAo\\_lhW9gLRop-1znmOOOnw0aeu8fs4f9wFeOWc&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019032202nasa-26r-3Demail-2D4499-26l-3D032-2D556-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=8SCPWWAQkPXcpUGYLSYrliL78tpFbKCYeTNEy7qEFcM&s=jANAo_lhW9gLRop-1znmOOOnw0aeu8fs4f9wFeOWc&e=>) (3/21, Foust) "Among the thousands of spectators who watched the Falcon 9 launch of the first Crew Dragon spacecraft from the Kennedy Space Center in the early morning hours of March 2, few had greater interest in the mission than Bob Behnken and Doug Hurley. The two veteran NASA astronauts, with four shuttle flights between them, have for the last few years been part of the commercial crew program, working with Boeing and SpaceX on the design and operations of their vehicles."

#### Elon Musk Says He Owes His Success To A 3-step Problem-solving Trick Used By Thomas Edison And Nikola Tesla

Business Insider <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019032202nasa-26r-3Demail-2D4499-26l-3D033-2D6e3-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=8SCPWWAQkPXcpUGYLSYrliL78tpFbKCYeTNEy7qEFcM&s=x-pku796JDMzmv5wYRY5Kuec203PESCrNhd4jGMTfVQ&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019032202nasa-26r-3Demail-2D4499-26l-3D033-2D6e3-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=8SCPWWAQkPXcpUGYLSYrliL78tpFbKCYeTNEy7qEFcM&s=x-pku796JDMzmv5wYRY5Kuec203PESCrNhd4jGMTfVQ&e=>) (3/21, Oshin) "By the age of 46, Elon Musk has innovated and built three revolutionary multibillion-dollar companies in different fields — Paypal (financial services), Tesla (automotive), and SpaceX (aerospace). This list doesn't include Solar City (energy), which he helped build and acquired for \$2.6 billion."

#### Lockheed Martin's First Smart Satellites Are Tiny With Big Missions

Space Daily <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019032202nasa-26r-3Demail-2D4499-26l-3D034-2Dc05-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=8SCPWWAQkPXcpUGYLSYrliL78tpFbKCYeTNEy7qEFcM&s=iM-](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019032202nasa-26r-3Demail-2D4499-26l-3D034-2Dc05-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=8SCPWWAQkPXcpUGYLSYrliL78tpFbKCYeTNEy7qEFcM&s=iM-)

Uu6TKWwYwkCevNr5xbqTL09oyPdFsCrWuccVAPqQ&e=> (3/21) “Lockheed Martin has announced a new generation of space technology launching this year that will allow satellites to change their missions in orbit. Satellites that launched one, ten or even fifteen years ago largely have the same capability they had when they lifted off.”

#### Why US Companies Might Not Be Eager To Launch Rockets From Brazil

The Verge <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019032202nasa-26r-3Demail-2D4499-26l-3D035-2D1e0-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=8SCPWWAQkPXcpUGYLSYrliL78tpFbKCYeTNEy7qEFcM&s=AwT1uv5IM4y5AlqTa0Oke5tf e3NA3JIYmGE\\_a2mPQdw&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019032202nasa-26r-3Demail-2D4499-26l-3D035-2D1e0-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=8SCPWWAQkPXcpUGYLSYrliL78tpFbKCYeTNEy7qEFcM&s=AwT1uv5IM4y5AlqTa0Oke5tf e3NA3JIYmGE_a2mPQdw&e=>) (3/21, Grush) “On Tuesday, the Trump administration signed a preliminary agreement with Brazil that could one day lead to US rockets launching from the South American country’s coastal spaceport. President Trump praised the idea of using the site, arguing that “because of the location, tremendous amounts of money would be saved.” But while the launch site offers up a few key benefits to US launch providers, it’s possible that these advantages may not be enough to draw all major rocket companies to the area.”

#### Blue Origin Studying Repurposing Of New Glenn Upper Stages

Space News <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019032202nasa-26r-3Demail-2D4499-26l-3D036-2Dbf3-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=8SCPWWAQkPXcpUGYLSYrliL78tpFbKCYeTNEy7qEFcM&s=Us7w20YlrM---NdJivzyFFEXC\\_1y7ecSUFbKfZ7ft6c&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019032202nasa-26r-3Demail-2D4499-26l-3D036-2Dbf3-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=8SCPWWAQkPXcpUGYLSYrliL78tpFbKCYeTNEy7qEFcM&s=Us7w20YlrM---NdJivzyFFEXC_1y7ecSUFbKfZ7ft6c&e=>) (3/21, Foust) “Blue Origin has studied repurposing upper stages of its future New Glenn launch vehicle to serve as habitats or for other applications as part of a series of NASA-funded commercialization studies. Brett Alexander, vice president of government sales and strategy at Blue Origin, said the company looked at ways it could make use of the second stage of New Glenn rather than simply deorbiting the stage at the end of each launch, but emphasized the company currently had no firm plans to reuse those stages at this time.”

#### Meet ‘Kazachok’: Landing Platform For ExoMars Rover Gets A Name

SPACE <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019032202nasa-26r-3Demail-2D4499-26l-3D037-2Dc36-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=8SCPWWAQkPXcpUGYLSYrliL78tpFbKCYeTNEy7qEFcM&s=H4VES1IPPe0k8k\\_x7p0N6V DL95fIZf3xHELgq73zRBg&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019032202nasa-26r-3Demail-2D4499-26l-3D037-2Dc36-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=8SCPWWAQkPXcpUGYLSYrliL78tpFbKCYeTNEy7qEFcM&s=H4VES1IPPe0k8k_x7p0N6V DL95fIZf3xHELgq73zRBg&e=>) (3/21, Wall) “Less than two years from now, Rosalind Franklin will roll off Kazachok onto the red dirt of Mars. Rosalind Franklin is the European rover that will hunt for signs of Red Planet life after touching down in February 2021. The moniker, which was announced last month, honors the pioneering crystallographer who helped figure out the double-helix structure of DNA.”

#### Arianespace Vega Launches Italian Imaging Satellite

Space News <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019032202nasa-26r-3Demail-2D4499-26l-3D038-2Dfdd-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=8SCPWWAQkPXcpUGYLSYrliL78tpFbKCYeTNEy7qEFcM&s=VpsaYVw1EvLCIUzkB-gmon2M8qhhTHEhtB5W6rXi2Es&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019032202nasa-26r-3Demail-2D4499-26l-3D038-2Dfdd-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=8SCPWWAQkPXcpUGYLSYrliL78tpFbKCYeTNEy7qEFcM&s=VpsaYVw1EvLCIUzkB-gmon2M8qhhTHEhtB5W6rXi2Es&e=>) (3/21, Henry) “European launch provider Arianespace conducted its third launch of the year March 21, orbiting a remote-sensing satellite for the Italian Space Agency on a Vega rocket. Vega, Arianespace’s light-lift vehicle, took off from Europe’s spaceport in Kourou, French Guiana at 9:50 p.m. Eastern.

PRISMA, the PRecursores IperSpettrale della Missione Applicativa satellite, separated from the rocket 54 minutes later.”

#### Germany Begins Reusability Study To Capture Rockets In Midair And Land Them With A Plane

Space News <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019032202nasa-26r-3Demail-2D4499-26l-3D039-2D5fb-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=8SCPWWAQkPXcpUGYLSYrliL78tpFbKCYeTNEy7qEFcM&s=oCCxhjUS3cKGI5jlbHelL3x5vGqsmDi2pIltZA4UcUHA&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019032202nasa-26r-3Demail-2D4499-26l-3D039-2D5fb-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=8SCPWWAQkPXcpUGYLSYrliL78tpFbKCYeTNEy7qEFcM&s=oCCxhjUS3cKGI5jlbHelL3x5vGqsmDi2pIltZA4UcUHA&e=>) (3/21, Henry) “The Germany space agency DLR is beginning a study this month on a reusable launcher concept that would use a winged first-stage booster captured on descent by an aircraft and towed back to land. DLR said March 20 that the three-year study seeks to develop a “rocket catcher” with an international team that will build on previous DLR simulations and flight experiments.”

#### Shanahan Plays Up Congress' Love Of Innovation In Plea For Space Force

Federal News Network <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019032202nasa-26r-3Demail-2D4499-26l-3D03a-2D55b-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=8SCPWWAQkPXcpUGYLSYrliL78tpFbKCYeTNEy7qEFcM&s=sazXvKCxdneFJK388ZJA42SrX0sAC6ISzFbup22AR2k&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019032202nasa-26r-3Demail-2D4499-26l-3D03a-2D55b-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=8SCPWWAQkPXcpUGYLSYrliL78tpFbKCYeTNEy7qEFcM&s=sazXvKCxdneFJK388ZJA42SrX0sAC6ISzFbup22AR2k&e=>) (3/20, Maucione) “Acting Defense Secretary Patrick Shanahan is trying to put the Space Force’s best foot forward as Congress starts its 2020 defense authorization cycle and will likely take up the issue and its budget in the coming months. Shanahan is framing the Space Force as a much-needed innovative hub to keep the United States competitive in areas outside the Earth’s atmosphere, but he also slipped in some upward trending numbers for the size of the force, which may give lawmakers pause.”

#### Shanahan: Space Force Needed To Ensure ‘Margin Of Dominance’

UPI <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019032202nasa-26r-3Demail-2D4499-26l-3D03b-2D035-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=8SCPWWAQkPXcpUGYLSYrliL78tpFbKCYeTNEy7qEFcM&s=0bb\\_wH2VOaU3c3oF7ryMT OJCqCb1P1Z-L8T8khiXgk&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019032202nasa-26r-3Demail-2D4499-26l-3D03b-2D035-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=8SCPWWAQkPXcpUGYLSYrliL78tpFbKCYeTNEy7qEFcM&s=0bb_wH2VOaU3c3oF7ryMT OJCqCb1P1Z-L8T8khiXgk&e=>) (3/21, Brokaw) “U.S. Acting Defense Secretary Patrick Shanahan said the U.S. needs a Space Force to maintain the nation’s “dominance” in space, and protect the systems the military and country depend on. The Space Force is needed to maintain the edge the United States has over its closest competitors in space technology and capability, Shanahan said.”

#### Space Bureaucracy Should Not Slow America Down Against Competitors

The Hill <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019032202nasa-26r-3Demail-2D4499-26l-3D03c-2D2e6-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=8SCPWWAQkPXcpUGYLSYrliL78tpFbKCYeTNEy7qEFcM&s=u0rY1Duh6zkVfK1\\_p-9jcqaeWJ37GNvBmbzqcqd2wQM&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019032202nasa-26r-3Demail-2D4499-26l-3D03c-2D2e6-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=8SCPWWAQkPXcpUGYLSYrliL78tpFbKCYeTNEy7qEFcM&s=u0rY1Duh6zkVfK1_p-9jcqaeWJ37GNvBmbzqcqd2wQM&e=>) (3/21, Rogers) “Over the last two years our nation has witnessed a lively debate about the future of national security in terms of how we organize, train, and equip our American forces to prepare for conflict that extends into outer space. While the future capabilities of the Space Force and Space Development Agency remains to be seen, it is worth reflecting on what has brought us to this point and recognize the



most significant threat to our preeminence in space, which is bureaucratic inertia slowing down innovative advances.”

### Natalie Portman Plays Astronaut Who Tried To Kidnap Rival Lover In Film ‘Lucy In The Sky’

Orlando (FL) Sentinel <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019032202nasa-26r-3Demail-2D4499-26l-3D03d-2Ddb9-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=8SCPWWAQkPXcpUGYLSYrliL78tpFbKCYeTNEy7qEFcM&s=go02\\_fFLmDKddneY6adKWLDLtuJzHQmyOO7txQMplJw&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019032202nasa-26r-3Demail-2D4499-26l-3D03d-2Ddb9-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=8SCPWWAQkPXcpUGYLSYrliL78tpFbKCYeTNEy7qEFcM&s=go02_fFLmDKddneY6adKWLDLtuJzHQmyOO7txQMplJw&e=>) (3/21, Herrera) “It had the makings of a Hollywood film even then: Astronaut Lisa Nowak drove the 1,000 miles from Houston to Orlando wearing an adult diaper so she could arrive in time to kidnap the woman her ex-boyfriend, another astronaut, was involved with. “Astronaut jailed in attack” ran the headline on the front page of the Orlando Sentinel on Feb. 6, 2007 as what would become one of the most bizarre cases involving an active astronaut unraveled at Orlando International Airport.”

### New Space Coast Hotel Will Be Rocket-lover’s Dream, Offering Prime Launch Viewing

Orlando (FL) Sentinel <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019032202nasa-26r-3Demail-2D4499-26l-3D03e-2De2f-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=8SCPWWAQkPXcpUGYLSYrliL78tpFbKCYeTNEy7qEFcM&s=ngyrM3V1cAwf\\_MQ4vYIXj\\_yOenIAO5c0EMVMz0T5V1E&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019032202nasa-26r-3Demail-2D4499-26l-3D03e-2De2f-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=8SCPWWAQkPXcpUGYLSYrliL78tpFbKCYeTNEy7qEFcM&s=ngyrM3V1cAwf_MQ4vYIXj_yOenIAO5c0EMVMz0T5V1E&e=>) (3/21, Santana) “Courtyard by Marriott hotel on the Space Coast announced Thursday will become the nearest to Kennedy Space Center launch complexes when it opens in the fall next year. The five-floor, 152-room hotel will be 6 miles from the Kennedy Space Center Visitor Complex and include a rooftop viewing area for launches.”

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## NASA Morning Briefing for Monday, February 25, 2019

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### Editor's Note

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Top Stories

Curiosity Rover Operating Normally After Sudden Boot-Up Issue

Tech Times <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019022502nasa&r=email-ddaf&l=003-ffc&t=c>> (2/24, Chan) "NASA's Curiosity rover is now up and running after a reboot issue caused some concerns. It is once again on the mission to discover new things about Mars. Boot-Up Issue Curiosity rover experienced a problem recently when an issue during boot-up halted all the rover's planned activities for the day and triggered the rover's protective safe mode."

NASA's Juno Spacecraft Just Sent Back A Stunning Photo Of Jupiter's Mysterious Giant Jet-Stream

Forbes <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019022502nasa&r=email-ddaf&l=004-8af&t=c>>

(2/23, Carter) "NASA's Juno spacecraft, which has been orbiting the giant planet Jupiter since summer 2016, is getting dangerously close to challenging other NASA's planetary spacecraft Cassini and Voyager for true iconic status. Its little solar-powered probe has just sent back a trove of incredible images from its latest 'dip' towards Jupiter, including this incredible image (below) of swirling clouds that surround a circular feature within a jet stream region called 'Jet N6.'"

#### NASA Releases Sharpest-ever Images Of Distant Kuiper Belt Object

Engadget <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019022502nasa&r=email-ddaf&l=005-6ca&t=c>> (2/23) "The space agency is keen to brag about the feat. New Horizons got closer to MU69 than it did its main target, Pluto, thanks to 'unprecedented precision' in calculations across multiple countries. There was a real chance the camera would miss the object entirely, according to mission team Principal Investigator Alan Stern."

#### NASA Renames Facility After Katherine Johnson Of 'Hidden Figures' Fame

New York Times <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019022502nasa&r=email-ddaf&l=006-030&t=c>> (2/23, Brown) "NASA on Friday officially renamed a facility in West Virginia after Katherine Johnson, an African-American mathematician and centenarian whose barrier-breaking career was depicted in the film 'Hidden Figures.' The 2016 film, based on a book released earlier that year, depicted the struggle of Ms. Johnson and other black women for equality at NASA during the height of the space age and segregation. The mathematician tracked the trajectories of crucial missions in the 1960s."

#### NASA, SpaceX OK 1st Test Flight Of Crew Capsule Next Week

Washington Post <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019022502nasa&r=email-ddaf&l=007-793&t=c>> (2/22, Dunn) "NASA and SpaceX on Friday approved a first test flight next week of the new commercial Dragon capsule designed for crew. No one will be aboard, only an instrumented dummy in a white SpaceX spacesuit. But the capsule will still fly to the International Space Station, following its planned March 2 liftoff from NASA's Kennedy Space Center."

#### Virgin Galactic Takes Crew Of Three To Altitude Of 55 Miles

Space Daily <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019022502nasa&r=email-ddaf&l=008-cd5&t=c>> (2/22) "Virgin Galactic's spacecraft reached an altitude of more than 55 miles (88.5 kilometers) on Friday, carrying for the first time a passenger in addition to its two pilots. SpaceShipTwo, built by British billionaire Richard Branson to carry tourists into space, launched from California's Mojave desert and flew to an altitude of 55.87 miles (89.9 kms), the company said."

#### Flight

##### How Boeing's First 747 Took Off – And Changed The World Forever

New York Post <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019022502nasa&r=email-ddaf&l=009-4cd&t=c>> (2/23, Spitznagel) "Fifty years ago this month, on Feb. 9, 1969, the Boeing 747 was officially introduced to the world. But as the wide-bodied jumbo jet taxied down the runway for its inaugural flight from Paine Field, just north of Seattle, not everybody in the crowd was convinced it would be a success. ... 747s have carried Space Shuttles for NASA, been the choice for Air Force One since 1990 and was Richard Branson's first plane when he launched Virgin Atlantic in 1984."

#### Earth

Antarctica May Be About To Shed Another Iceberg, This One Twice The Size Of NYC's 5 Boroughs: NASA

New York Daily News <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019022502nasa&r=email-ddaf&l=00a-8ae&t=c>> (2/24, Braine) “Another piece of the Antarctic ice shelf is just a few miles from calving off a giant hunk, this time twice as big as all five borough of New York City. With two cracks – the Halloween Crack, so nicknamed for appearing in October 2016, and a second longstanding one that started to expand recently – edging toward one another and slated to meet in the not-too-distant future, the resulting iceberg could be 660 square miles once the cracks meet and the ice separates from the ice shelf, NASA reported from satellite data.”

#### NASA Concerned As Iceberg Twice The Size Of New York City Is About To Break Off From Antarctica

Fox News <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019022502nasa&r=email-ddaf&l=00b-cf7&t=c>> (2/24, Darrah) “Scientists warned Sunday that a massive iceberg will soon calve – or break off – from Antarctica’s Brunt Ice Shelf and they’re increasingly concerned about the ‘uncertain future’ it creates for future research opportunities there. The iceberg is expected to be about twice the size of New York City, according to NASA scientists, who have observed cracks growing across the ice shelf in recent years.”

#### The Fierce Urgency Of Climate Change

Washington Post <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019022502nasa&r=email-ddaf&l=00c-c6b&t=c>> (2/24, Downie) “Over the weekend, a video went viral online of a debate between Sen. Dianne Feinstein (D-Calif.) and student members of the Sunrise Movement, a climate advocacy group, while they were visiting her office to pitch the Green New Deal. I’ll leave it to others to decide who came off better in the video. ... ‘Cracks growing across Antarctica’s Brunt Ice Shelf are poised to release an iceberg with an area about twice the size of New York City,’ reports NASA.”

#### NASA-NOAA Satellite Provides Wide View Of Tropical Cyclone Oma

SpaceRef <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019022502nasa&r=email-ddaf&l=00d-075&t=c>> (2/24) “When you look at a Tropical Cyclone Oma from space, you’ll get a sense of its massive size. While orbiting the Earth, NASA-NOAA’s Suomi NPP satellite provided a look at the large tropical storm in the Southern Pacific Ocean. Oma weakened rapidly from a typhoon to a tropical storm, and on Feb 22, the Visible Infrared Imaging Radiometer Suite (VIIRS) instrument aboard NASA-NOAA’s Suomi NPP satellite captured a visible image of Oma.”

#### Humans in Space

No content.

#### Moon to Mars

#### Curiosity Rover Operating Normally After Sudden Boot-Up Issue

Tech Times <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019022502nasa&r=email-ddaf&l=00e-ab6&t=c>> (2/24, Chan) “NASA’s Curiosity rover is now up and running after a reboot issue caused some concerns. It is once again on the mission to discover new things about Mars. Boot-Up Issue Curiosity rover experienced a problem recently when an issue during boot-up halted all the rover’s planned activities for the day and triggered the rover’s protective safe mode.”

#### NASA’s Curiosity Rover Entered ‘Safe Mode’ Last Week, And We’re Still Not Sure Why

ScienceAlert (AUS) <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019022502nasa&r=email-ddaf&l=00f-06b&t=c>> (2/24, Christian, Futurism) “NASA’s Curiosity Mars rover, which touched down in 2014, experienced a

“hiccup” while booting up last week – but scientists on Earth have brought it back online and are working to reconstruct what went wrong. ‘We’re still not sure of its exact cause and are gathering the relevant data for analysis,’ said Steven Lee, Curiosity’s deputy project manager at NASA’s Jet Propulsion Laboratory, in a blog post about the incident.”

#### NASA Mars Rover Curiosity Hiccups, Takes A Break From Science

CNET News <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019022502nasa&r=email-ddaf&l=010-ac2&t=c>> (2/22, Kooser) “After officially losing the Opportunity rover to a dust storm on Mars, fans of machines on the Red Planet were starting to get antsy about NASA’s still-functioning Curiosity rover. The rover website hadn’t received mission updates or new raw images for a week. Now we know why. NASA announced Friday that Curiosity experienced a ‘hiccup during boot-up’ the previous Friday. This triggered the rover to go into safe mode and interrupted its planned science activities.”

#### ‘Alien TEMPLE’ Spotted On Mars In NASA Image, Conspiracy Theorist Claims

MSN <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019022502nasa&r=email-ddaf&l=011-85b&t=c>> (2/23) “‘Another day, another alleged ‘sighting’ on Mars. This time, conspiracy theorists claim that they’ve spotted an alien temple on the red planet in a photo taken by NASA’s Curiosity Rover. Scott Waring, who writes for UFO Sightings Daily, claims that the temple can be seen ‘in the distance’ of a recent photo.”

#### NASA Picks Science Experiments To Send To The Moon This Year

Discover Magazine <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019022502nasa&r=email-ddaf&l=012-58f&t=c>> (2/22) “Following on the heels of its announcement to return to the moon this year, NASA announced Thursday the first batch of science projects and technology demonstrations they want to send skyward in 2019, assuming their commercial partners can launch on time. The selections highlight the science questions NASA wants answered as it ramps up robotic missions to the moon and shoots for placing humans back on the surface within the next decade, this time on a more permanent basis.”

#### NASA Plans Manned Lunar Landing By 2028

Fox Business <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019022502nasa&r=email-ddaf&l=013-02b&t=c>> (2/23) “Humanity is about to return to the moon – this time for real. There was a lot of excitement in space circles when, late last year, NASA announced plans to award ‘Commercial Lunar Payload Delivery Services’ contracts to nine separate companies to develop a new lunar lander. Then we saw the fine print: This will be a robotic lander, remote controlled, no humans on board.”

#### Moon Mania: Companies See Ripe Opportunity In NASA Lunar Missions

Forbes <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019022502nasa&r=email-ddaf&l=014-5f5&t=c>> (2/22, Howell) “Fifty years after Neil Armstrong made the first footprint on the moon, NASA plans to land again soon with a fleet of robotic landers and rovers. Analysts say the agency’s push to send a mission as early as this year demonstrates that the United States will go back to the moon to stay.”

#### Companies Skeptical Commercial Lunar Landers Can Fly NASA Payloads This Year

Space News <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019022502nasa&r=email-ddaf&l=015-26e&t=c>> (2/22) “As NASA selects payloads it plans to fly on commercial lunar landers, companies developing those spacecraft are skeptical any landers will be ready to fly this year, as the agency desires. NASA announced Feb. 21 that it has identified a dozen science and technology demonstration payloads from within the agency that will be eligible to fly on missions through the Commercial Lunar Payload Services (CLPS) program. Those payloads include a



range of scientific instruments, such as spectrometers and magnetometers, as well as demonstrations of solar cells and navigational beacons.”

## Solar System and Beyond

### NASA's Juno Spacecraft Just Sent Back A Stunning Photo Of Jupiter's Mysterious Giant Jet-Stream

Forbes <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019022502nasa&r=email-ddaf&l=016-7f2&t=c>> (2/23, Carter) “NASA’s Juno spacecraft, which has been orbiting the giant planet Jupiter since summer 2016, is getting dangerously close to challenging other NASA’s planetary spacecraft Cassini and Voyager for true iconic status. Its little solar-powered probe has just sent back a trove of incredible images from its latest ‘dip’ towards Jupiter, including this incredible image (below) of swirling clouds that surround a circular feature within a jet stream region called ‘Jet N6.’”

### New Jupiter Photo Shared From NASA's Juno Mission

Thrillist <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019022502nasa&r=email-ddaf&l=017-1eb&t=c>> (2/24, Nelson) “The image was taken on February 12 during the spacecraft’s 18th flyby of Jupiter. Juno has been orbiting our solar system’s largest planet since the summer of 2016. NASA says the probe was just 8,000 miles from the clouds of the planet when it snapped the stunning picture, which was color-enhanced by ‘citizen scientist’ Kevin M. Gill with data from the JunoCam imager. The data and images are publicly available for anyone to process or dig around in like a digital sandbox filled with space data.”

### NASA Spacecraft Nabs Best Picture Contender Of Jupiter's Swirling Clouds

CNET News <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019022502nasa&r=email-ddaf&l=018-6f5&t=c>> (2/24, Ryan) “On Earth, some of 2018’s best dramas including A Star Is Born, Roma, Vice and Green Book will vie for Best Picture at the 2019 Oscars. But in the far reaches of the solar system, a plucky NASA spacecraft is drifting along, ready to upstage them all. In February, NASA’s Jovian explorer, Juno, made its 18th close flyby of Jupiter, coming within 13,000 kilometers (approx. 8,000 miles) of its roiling clouds.”

### Nasa's Juno Craft Captures Beautiful Swirling Cloud Formations On Jupiter

Digital Trends <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019022502nasa&r=email-ddaf&l=019-263&t=c>> (2/24) “NASA’s Juno spacecraft has captured this gorgeous image of Jupiter during its 18th flyby of the planet. This new perspective shows dramatic circling cloud formations which swirl around a jet stream known as Jet N6. The spot is an example of a high-pressure region in the atmosphere which is believed to be a storm which could continue to rage for hundreds of years.”

### NASA Releases Sharpest-ever Images Of Distant Kuiper Belt Object

Engadget <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019022502nasa&r=email-ddaf&l=01a-bf2&t=c>> (2/23) “The space agency is keen to brag about the feat. New Horizons got closer to MU69 than it did its main target, Pluto, thanks to ‘unprecedented precision’ in calculations across multiple countries. There was a real chance the camera would miss the object entirely, according to mission team Principal Investigator Alan Stern.”

### NASA's New Horizons Sends Back The Clearest View Yet Of A Flattened Space Peanut

The Verge <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019022502nasa&r=email-ddaf&l=01b-fd5&t=c>> (2/23) “New photos sent back by NASA’s New Horizons spacecraft reveal mysterious light patches and dark divots on the strange, frozen space rock known as 2014 MU69. These photos are the clearest ones yet, giving scientists the chance to explore the distant object’s terrain from 4.1 billion miles away.”

## SOFIA Uncovers Clues To The Evolution Of Universe And Search For Life

SpaceRef <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019022502nasa&r=email-ddaf&l=01c-ca4&t=c>> (2/25) “A compilation of scientific results from The Stratospheric Observatory for Infrared Astronomy, SOFIA, reveal new clues to how stars form and galaxies evolve, and closer to understanding the environment of Europa and its subsurface ocean. The airborne observatory carries a suite of instruments, each sensitive to different properties of infrared light, that gives astronomers insights into the flow of matter in galaxies.”

## Huge Supernova Explosion Leaves Surprisingly Dusty Aftermath

SPACE <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019022502nasa&r=email-ddaf&l=01d-ca0&t=c>> (2/24) “The aftermath of a massive stellar explosion turns out to be much dustier than scientists expected, recent NASA observations revealed. When a red giant star nears the end of its life, it sheds its outer layers, creating interstellar clouds of cosmic dust. Eventually, when the star dies, a fiery explosion known as a supernova releases powerful blast waves that destroy almost everything in their path. However, observations from NASA’s flying telescope – the Stratospheric Observatory for Infrared Astronomy (SOFIA) – showed more than 10 times the amount of dust expected in the wake of a nearby stellar explosion called supernova 1987A.”

## This Massive Black Hole Is Mysteriously Quiet, And Astronomers Don’t Know Why

Forbes <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019022502nasa&r=email-ddaf&l=01e-c83&t=c>> (2/25, Siegel) “Scientists have studied the closest, largest, brightest galaxies to Earth for centuries. Messier 51, the Whirlpool Galaxy, is one of astronomy’s most spectacular objects. This enormous, face-on galaxy was the first one ever to reveal its spiral structure. ... Prior studies with NASA’s Chandra X-ray telescope showed fewer X-rays than expected.”

## Space Tech

### NASA-funded Research Creates DNA-like Molecule To Aid Search For Alien Life

Space Daily <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019022502nasa&r=email-ddaf&l=01f-2db&t=c>> (2/22) “In a research breakthrough funded by NASA, scientists have synthesized a molecular system that, like DNA, can store and transmit information. This unprecedented feat suggests there could be an alternative to DNA-based life, as we know it on Earth – a genetic system for life that may be possible on other worlds. This new molecular system, which is not a new life form, suggests scientists looking for life beyond Earth may need to rethink what they are looking for.”

### X-rays Might Be A Better Way To Communicate In Space

Universe Today <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019022502nasa&r=email-ddaf&l=020-042&t=c>> (2/23) “In the coming years, thousands of satellites, several next-generation space telescopes and even a few space habitats are expected to be launched into orbit. Beyond Earth, multiple missions are planned to be sent to the lunar surface, to Mars, and beyond. As humanity’s presence in space increases, the volume of data that is regularly being back sent to Earth is reaching the limits of what radio communications can handle. For this reason, NASA and other space agencies are looking for new methods for sending information back and forth across space.”

### NASA Is Launching A Submarine To Hunt For Life In The Mysterious Depths Of The Sea

ScienceAlert (AUS) <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019022502nasa&r=email-ddaf&l=021-788&t=c>> (2/22, Brueck) “Diving to the bottom of the ocean is arguably harder than rocketing into space. Hundreds of

astronauts have left Earth, but you can count the people who've visited the very bottom of the ocean on one hand: James Cameron, Jacques Piccard, and Don Walsh. ... Scientists from NASA and Woods Hole Oceanographic Institution (WHOI) have teamed up on a \$US1.2 million, privately funded effort to research, design, and build a new robot to explore the hadal zone.”

#### NASA's Space Shuttle Rises From The Dead To Power New Vehicles

Wired <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019022502nasa&r=email-ddaf&l=022-051&t=c>> (2/22, Harris) “In 2011, the storied space shuttle flew for the last time. Three spacecraft survive in retirement as specimens in museums around the country. But the program isn't dead yet: Many of its parts are popping up as zombie components in spacecraft now in development. Modified left-over shuttle engines will power NASA's delayed Space Launch System (SLS), a giant launch vehicle intended for lunar missions and, eventually, Mars. An experimental autonomous Darpa spaceplane, called the Phantom Express, will also rely on a shuttle engine.”

Various

#### NASA Renames Facility After Katherine Johnson Of 'Hidden Figures' Fame

New York Times <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019022502nasa&r=email-ddaf&l=023-363&t=c>> (2/23, Brown) “NASA on Friday officially renamed a facility in West Virginia after Katherine Johnson, an African-American mathematician and centenarian whose barrier-breaking career was depicted in the film 'Hidden Figures.' The 2016 film, based on a book released earlier that year, depicted the struggle of Ms. Johnson and other black women for equality at NASA during the height of the space age and segregation. The mathematician tracked the trajectories of crucial missions in the 1960s.”

#### 'Hidden Figures' Scientist Katherine Johnson Gets NASA Facility Named In Her Honor

Fox News <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019022502nasa&r=email-ddaf&l=024-c32&t=c>> (2/24, Darrah) “Katherine Johnson, the former NASA mathematician whose journey was showcased in the 2016 movie “Hidden Figures,” received a huge gift from the agency that employed her years ago. The Independent Verification and Validation Facility (IV&V) in Fairmont, West Virginia, has been renamed in honor of Johnson – an African-American woman who led a distinguished career at the agency during a time when race tensions were high and when important roles with the National Advisory Committee for Aeronautics, a precursor to NASA, were filled mainly by men.”

#### Woman Recalls NASA Job Lifelong Friendship With Astronaut

Washington Times <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019022502nasa&r=email-ddaf&l=025-d6a&t=c>> (2/24) “When 94-year-old Margaret Gsell looks at the moon, she remembers the most interesting period of her life. Gsell worked as an illustrator at NASA in the late 1960s, perhaps into the early 70s, when the space agency was focused on getting to the moon. She's not sure of the exact years now, 50 years later, but she is sure of what her experiences at that time have meant to her life.”

#### Previous Incumbent Protests NASA's \$2.9 Billion IT Support Contract

NextGov <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019022502nasa&r=email-ddaf&l=026-05d&t=c>> (2/22) “Earlier this month, NASA announced its \$2.9 billion replacement enterprise IT contract would get a new vendor along with its new name. Now, the previous contract holder is asking the Government Accountability Office for a review. The space agency awarded the NASA End-user Services and Technology, or NEST, contract to Leidos in early February, which will help ‘establish a long-term outsourcing arrangement with the commercial sector to provide and manage most of NASA's personal computing hardware, agency standard software, mobile IT services, peripherals

and accessories, associated end-user services and supporting infrastructure,' according to an agency announcement.”

Other

NASA, SpaceX OK 1st Test Flight Of Crew Capsule Next Week

Washington Post <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019022502nasa&r=email-ddaf&l=027-562&t=c>> (2/22, Dunn) “NASA and SpaceX on Friday approved a first test flight next week of the new commercial Dragon capsule designed for crew. No one will be aboard, only an instrumented dummy in a white SpaceX spacesuit. But the capsule will still fly to the International Space Station, following its planned March 2 liftoff from NASA’s Kennedy Space Center.”

NASA And SpaceX Discuss Launch Plans For 1st Crew Dragon Spaceship Today

SPACE <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019022502nasa&r=email-ddaf&l=028-8b7&t=c>> (2/22) “NASA and SpaceX are meeting in Florida (Feb. 22) to review plans to launch the first Crew Dragon spaceship built for astronauts on March 2 and you can find out how their discussion goes in a live webcast. SpaceX and NASA officials will spend the day at the Kennedy Space Center in what the agency calls a Flight Readiness Review, a standard preflight meeting that – like its name suggests – convenes mission managers to discuss if a space mission is ready for launch. NASA will announce the results of the meeting this evening.”

NASA Says SpaceX’s Crew Dragon Is Ready To Fly To Space Station

Bloomberg <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019022502nasa&r=email-ddaf&l=029-0fc&t=c>> (2/23, Bachman) “Billionaire Elon Musk’s SpaceX is ready to fly its first commercially-built spacecraft designed for humans to the International Space Station, NASA said Friday after a high-level agency review of the project in the final week before the flight. The unmanned SpaceX Demo-1 launch is set for 2:48 a.m. U.S. Eastern time on March 2 from Cape Canaveral, Florida. The 27-foot long Crew Dragon will dock with the space station at 5:55 a.m. the following day. It will carry some cargo, radiation monitors and a full-scale “dummy” to replicate an astronaut.”

NASA Greenlights SpaceX Crew Capsule Test To ISS

Space Daily <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019022502nasa&r=email-ddaf&l=02a-6c0&t=c>> (2/23) “NASA on Friday gave SpaceX the green light to test a new crew capsule by first sending an unmanned craft with a life-sized mannequin to the International Space Station. ‘We’re go for launch, we’re go for docking,’ said William Gerstenmaier, the associate administrator with NASA Human Exploration and Operations. A Falcon 9 rocket from the private US-based SpaceX is scheduled to lift off, weather permitting, on March 2 to take the Crew Dragon test capsule to the ISS.”

Virgin Galactic Takes Crew Of Three To Altitude Of 55 Miles

Space Daily <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019022502nasa&r=email-ddaf&l=02b-236&t=c>> (2/22) “Virgin Galactic’s spacecraft reached an altitude of more than 55 miles (88.5 kilometers) on Friday, carrying for the first time a passenger in addition to its two pilots. SpaceShipTwo, built by British billionaire Richard Branson to carry tourists into space, launched from California’s Mojave desert and flew to an altitude of 55.87 miles (89.9 kms), the company said.”

Virgin Galactic Just Successfully Launched Its First Passenger Past The Edge Of Space

ScienceAlert (AUS) <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019022502nasa&r=email-ddaf&l=02c->

b11&t=c> (2/22, Mosher) “Richard Branson’s company Virgin Galactic has flown its first passenger on a rocket-powered spaceship. The flight is part of a decades-long effort by multiple companies to usher in an era of frequent and safe suborbital space tourism, in which vehicles can fly high enough to briefly enter space, provide minutes of zero gravity, then return to the ground. On Friday, Virgin Galactic’s SpaceShipTwo vehicle, named VSS Unity, did just that.”

#### Virgin Galactic Takes One Giant Leap Toward Space Tourism

New York Post <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019022502nasa&r=email-ddaf&l=02d-c29&t=c>> (2/23) “A Virgin Galactic rocket plane on Friday soared to the edge of space with a test passenger for the first time, nudging British billionaire Richard Branson’s company closer to its goal of suborbital flights for space tourists. Virgin Galactic’s chief astronaut instructor Beth Moses, who will train future space tourists, joined pilots onboard SpaceShipTwo VSS Unity to evaluate the customer experience and cabin.”

#### Robots Invade The Mars-Like Moroccan Desert In The Name Of Research

SPACE <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019022502nasa&r=email-ddaf&l=02e-409&t=c>> (2/24) “The Sahara Desert, close to the Moroccan-Algerian border, served as a test site for three rovers and more than 40 engineers finishing the first phase of the Strategic Research Cluster on Space Robotics Technologies, a project funded by the European Union’s Horizon 2020 program. The venue for the field tests was a site near Erfoud operated by the Ibn Battuta Centre in Marrakesh. Engineers tested the rovers’ automated navigation systems over a period of two weeks in a project coordinated by PERASPERA, a partnership of space agencies from Europe, including Italy, France, Germany, Spain and the U.K., according to a statement from the European Space Agency (ESA).”

#### A Japanese Startup Is Set To Go Hunting For Ice... On The Moon

TechRadar <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019022502nasa&r=email-ddaf&l=02f-f0f&t=c>> (2/22) “Last night, Israel’s first mission to the moon launched successfully on a SpaceX rocket. Israel now looks set to become the fourth nation to briefly put a lander on the moon, but a private company in Japan has much more ambitious plans. Called HAKUTO-R, a two-pronged mission from Tokyo-based ispace intends to conduct tech tests on the lunar surface and eventually locate, extract and deliver lunar ice to space agencies and private space companies.”

#### Russia Will Send Two Space Tourists To The ISS In Late 2021

SlashGear <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019022502nasa&r=email-ddaf&l=030-854&t=c>> (2/22) “Russia has revealed new plans to send a pair of space tourists to the International Space Station in late 2021. According to the nation’s Roscosmos, the space agency has signed a contract with Space Adventures Inc., a private spaceflight company. The space tourists will be delivered to the Russian segment in the ISS using the Soyuz spacecraft. Space tourism – the act of visiting space for recreational, rather than professional, purposes – is expected to grow substantially in coming decades.”

#### Japanese Probe Lands On Asteroid To Capture Sample

Spaceflight Now <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019022502nasa&r=email-ddaf&l=031-ebc&t=c>> (2/22) “Japan’s Hayabusa 2 spacecraft briefly landed on an asteroid Thursday more than 200 million miles from Earth and fired a bullet to scoop up a rocky sample, successfully accomplishing one of the mission’s most challenging maneuvers before returning the asteroid specimen to scientists on the ground in December 2020. The spacecraft lingered on Ryugu’s surface for just a few moments before firing thrusters to climb away from the asteroid. Hayabusa 2’s ground team in Sagami-hara, Japan, celebrated as radio signals beamed back from the probe indicated the touch-and-go maneuver went off without a hitch, delighting engineers who painstakingly planned – then re-planned – the spacecraft’s pinpoint landing.”

## What Are The Objectives Of World's First Privately Funded Lunar Mission?

Tech Times <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019022502nasa&r=email-ddaf&l=032-0b4&t=c>> (2/23, Adamson) "Israel's first moon mission blasted off from Florida aboard a SpaceX Falcon 9 rocket on Friday. Dubbed Beresheet, the Hebrew word for 'Genesis,' the lander is now making its two-month journey to land on the moon. Its creators expect it will land on the lunar surface on April 11."

## Firefly Aerospace Aims To Fill 'Small Rocket' Niche On Fla. Space Coast

UPI <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019022502nasa&r=email-ddaf&l=033-301&t=c>> (2/22) reports "Firefly Aerospace announced Friday it will open a rocket-manufacturing facility on Florida's Space Coast on Cape Canaveral, adding momentum to a new commercial space race. Firefly Aerospace will join SpaceX, Jeff Bezos' Blue Origin, satellite manufacturer OneWeb and a cluster of smaller companies that have kicked off a new chapter in American space exploration."

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## Top Stories

### CRS-16 Dragon Returns To Earth Following ISS Departure

NASA Space Flight <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=003-fcf&t=c>> (1/10, Bergin) "SpaceX's CRS-16 Dragon spacecraft has concluded the EOM (End Of Mission) phase of her mission following unberthing from the International Space Station (ISS) on Sunday. Dragon's release from the Space Station Remote Manipulator System (SSRMS) occurred at 23:33 UTC, with splashdown in the Pacific Ocean expected around 05:10 UTC on Monday. The conclusion to Dragon's mission was expected earlier in the week. However, ISS managers opted to delay the EOM events to Sunday, due to poor weather conditions in the splashdown zone."

### China Says It Exchanged Data With NASA On Far Side Of Moon

New York Times <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=004-9b8&t=c>> (1/14, Press) "China's space agency says it worked with NASA to collect data from the far side of the moon. The state-run China Daily said this was the first such collaboration since an American law banned joint space projects with China that do not have prior congressional approval. The deputy director of the national space agency, Wu Yanhua, said Monday that NASA shared information about its lunar orbiter satellite in hopes of monitoring the landing of the Chang'e 4 spacecraft, which made China the first country to land on the far side of the moon earlier this month. Wu said China in turn shared the time and coordinates of Chang'e 4's scheduled landing. He said NASA's satellite did not catch the precise moment of landing, but took photographs of the area afterward."

### Government Shutdown Has Made U.S. Cyber Infrastructure More Vulnerable

Newsweek <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=005-b0e&t=c>> (1/12, Phifer) "As hundreds of thousands of government workers go without paychecks, another potential crisis looms as President Trump's partial government shutdown continues. Dozens of government websites have seen their security certificates expire since the government shuttered on December 21, with no one at work to renew them, Netcraft reports. Netcraft estimates that over 80 government websites, including the Department of Justice, the U.S. Court of Appeals and NASA, have been impacted by the shutdown."

### NASA Internal App Leaked Employee Emails, Project Names

ZDNet <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=006-2a9&t=c>> (1/11, Cimpanu) "A NASA web app leaked details such as employee usernames, names, email addresses, and project names, ZDNet has learned today from bug hunter Avinash Jain. The exposure originated from one of NASA's Jira installations, a web app that most companies use for tracking projects or internal bugs and issues. In a report detailing his finding published today and shared with ZDNet, Jain said the reason for the leak was Jira's visibility controls, which a NASA system admin appears to have mixed up."

### NASA's InSight Lander On Mars Is Now Hunting For Marsquakes

SPACE <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=007-b43&t=c>> (1/11, Malik) "NASA's InSight Mars lander is officially hunting for quakes on the Red Planet. The lander's ultrasensitive

seismometer, called the Seismic Experiment for Interior Structure (SEIS), has passed its initial tests and is working well, according to the French space agency CNES, which built the lander's instrument."

#### Russian Leadership To Receive Probe Results On Hole In Soyuz In Coming Weeks

Space Daily <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=008-308&t=c>> (1/11) "The results of the probe into a hole in the hull of the Russian Soyuz spacecraft, which was docked to the International Space Station (ISS), will be communicated to the Russian leadership in the coming weeks, Dmitry Rogozin, the head of Russian space agency Roscosmos, said. In late August, the ISS crew experienced an air leakage which appeared to have been caused by a microfracture in the orbital module of the Soyuz MS-09 spacecraft docked to the station. ... Dmitry Rogozin also added that he was ready to receive NASA Administrator Jim Bridenstine and the Russian corporations' potential US customers in Russia in the wake of the cancellation of his invitation to visit the United States."

#### Flight

##### Stratolaunch Airplane Nears First Flight

SPACE <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=009-be2&t=c>> (1/11, Foust) "The latest taxi test of the giant aircraft being developed by Stratolaunch for its air-launch system is a sign the plane's first flight may take place soon. The company announced Jan. 9 that its airplane, the largest in the world by wingspan, performed its fastest taxi test to date at the Mojave Air and Space Port in California, reaching a top speed of 219 kilometers per hour. ... Those vehicles will be powered by an engine called PGA that Stratolaunch is developing. That engine, using liquid oxygen and liquid hydrogen propellants, will produce 200,000 pounds-force of thrust. Stratolaunch announced in November that it successfully fired the engine's preburner in tests at NASA's Stennis Space Center in Mississippi."

##### Boeing Reveals New Plane Design That Could Make Journeys Even Faster

Daily Mirror (UK) <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=00a-8b8&t=c>> (1/11, Delahaye) "The Boeing company has unveiled a new aircraft design that could see planes flying higher and faster than ever before. Boeing revealed its newest Transonic Truss-Braced Wing (TTBW), which features 170-foot-long folding wings. ... The aircraft manufacturer has been working with NASA and studying the TTBW concept for nearly a decade, as part of the Subsonic Ultra Green Aircraft Research (SUGAR) program."

#### Earth

##### Everything You Need To Know About This Month's Amazing 'Super Wolf Blood Moon'

ABC News <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=00b-dc3&t=c>> (1/12, Phorn) "A super wolf blood moon is going to appear in all its stunning splendor later this month, as a rare cosmic gesture to welcome in 2019. People who live in the Americas, Europe, Africa and the central Pacific region could take a glimpse of this stunning image late on the evening of Jan. 20 and into the early morning hours of Jan. 21, according to National Aeronautics and Space Administration (NASA)."

##### Full Wolf Moon Meets A Total Lunar Eclipse

SPACE <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=00c-801&t=c>> (1/11, Emspak) "The full moon of January, called the Wolf Moon, will occur in the U.S. just after midnight on the night of January 20-21, and viewers in the Americas, northwestern Europe and even the Arctic will be treated to a lunar eclipse. The moon becomes officially full for observers on the East Coast of the U.S. on Jan. 21st at 12:16 a.m."



Eastern Standard Time, according to NASA's SkyCal. Moonrise is at 4:32 p.m. the evening of Jan. 20 and moonset is the next morning at 7:36 a.m., according to the U.S. Naval Observatory."

#### A Great Total Lunar Eclipse Is Coming Soon!

SPACE <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=00d-03b&t=c>> (1/11, Rao) "More than three years have passed since most of North America saw a good total lunar eclipse. So be sure to put a big circle on your calendar for Sunday, Jan. 20. ... This NASA graphic offers basic details about the Jan. 21, 2019, total lunar eclipse. The red circle is Earth's darkest shadow, the umbra. The thick grey ring around it represents the outer portion of Earth's shadow, the penumbra. The thin black rings indicate the position of the moon as it moves through Earth's shadow."

#### How And When To See The Lunar Eclipse This Month

Daily Mirror (UK) <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=00e-542&t=c>> (1/12, Best) "This month, sky-gazers around the world will be treated to a stunning astronomical display, in the form of a super blood wolf moon. The first lunar eclipse of the year will see the moon appear red in the night sky. ... NASA said: 'A total lunar eclipse occurs when the moon and the sun are on exact opposite sides of Earth. Although the moon is in Earth's shadow, some sunlight reaches the moon.'"

#### A Strange Kind Of Data Tracks The Weather—And Pirate Ships

Wired <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=00f-318&t=c>> (1/11, Scoles) "A group of apes is called a shrewdness; a group of ferrets is called a business; a group of small satellites is called a constellation. And Spire is the name of one shrewd business with a constellation of small satellites. More than 60 of its sats are up in orbit, collecting information about the weather, as well as the movements of ships and air traffic. ... It's like how NASA now pays SpaceX for some of its launches instead of sending up all its own rockets. In 2016 NOAA awarded Spire and a company named GeoOptics, which uses the same technique, small grants to demonstrate that their data could potentially improve NOAA's weather forecasts. The companies had until April 30, 2017."

#### International Focus On Greenhouse Gas Monitoring Satellites, Sensors

Space News <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=010-e87&t=c>> (1/11, Werner) "Greenhouse gas monitoring was a hot topic at the American Meteorological Society's annual conference with international agencies discussing a global constellation and companies showing a new generation of sensors. ... Before nations report progress in complying with the Paris agreement in 2023, space and environmental agencies plan to launch: MicroCarb, a mission led by the French space agency CNES; Eumetsat's Metop Second Generation A; the Methane Remote Sensing Lidar Mission, a joint project of the German space agency DLR and CNES; and NASA's Geostationary Carbon Cycle Observatory (GeoCarb)."

#### Hurricane Satellites Reveal Flooding On Earth

SPACE <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=011-65a&t=c>> (1/13, Werner) "Researchers examining data produced by small satellites launched in 2016 to track ocean winds were surprised the mission produced valuable information on soil moisture and flooding. NASA's Cyclone Global Navigation Satellite System, a constellation of eight 30-kilogram satellites built by the Southwest Research Institute and the University of Michigan, observed the Amazon River basin in far more detail than NASA's Soil Moisture Active Passive mission even when SMAPs radar still worked."

#### Ball And SSL Win Study Contracts For Methane Emission Tracking Satellite

Space News <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=012-c86&t=c>> (1/11, Foust) “The Environmental Defense Fund (EDF) has awarded contracts to Ball Aerospace and Space Systems Loral to develop designs for a privately funded satellite to track methane emissions. ... Space agencies say they welcome those new efforts, as long as the data and how they’re calibrated are shared. ‘If we have free and open exchange of data, and insight into the calibration and validation and characterization, all comers, from the commercial sector, from sub-national organizations, from NGOs, et cetera, can only help to advance the science,’ said Mike Freilich, director of NASA’s Earth science division, during a panel session at the International Astronautical Congress in Germany in October.”

#### What’s Next For Air Force Weather Satellites?

SPACE <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=013-e72&t=c>> (1/13, Werner) “The U.S. military’s highest priority weather satellite, a spacecraft requested by U.S. Strategic Command to observe clouds and theaters of operations, is on hold after NASA rescinded the contract award. In September the Space Rapid Capabilities Office, working with the NASA Ames Research Center’s small spacecraft prototyping office, awarded Sierra Nevada Corp. a \$119 million contract to develop a satellite to gather cloud and theater imagery until the service finds a long-term solution to fulfilling its weather requirements. In October, Space Systems Loral protested the award and NASA rescinded it.”

#### American Robins Not Heading North Quite Yet

Anchorage (AK) Daily News <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=014-71d&t=c>> (1/12, Rozell) “While walking the streets of Washington, D.C., last month, a pleasant sound stopped me. A male robin was singing, high in a sidewalk sycamore. ... Oliver’s research is part of a NASA project headed by Columbia professor and Toolik Field Station regular Natalie Boelman. Researchers are trying to learn how a warmer world affects bears, caribou, wolves, songbirds, and other animals. One of Oliver’s major questions is how robins are adjusting to earlier springs.”

#### Space Agency Reveals ‘There’s No Way To Hide Catastrophic Event’

Daily Express (UK) <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=015-b69&t=c>> (1/13, Hoare) “The apocalypse is said to be the complete final destruction of the world, first described in the biblical book of Revelation. For decades, many have predicted the event, the most significant being on December 21, 2012, when conspiracy theorists claimed a mythical planet named Nibiru would smash into Earth. However, NASA disregarded the claims at the time and would have no reason to hide it from the public in the future, Dr Thaller has revealed.”

#### Spacecraft To Slam Into Asteroid In Planetary Defence Mission

Daily Express (UK) <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=016-0a5&t=c>> (1/12, Fish) “Earth is in constant danger of an cataclysmic event, with the existence of an estimated 1,000 near-Earth asteroids capable of causing devastation on a ‘continental’ scale. And NASA – tasked with protecting the planet from such an apocalyptic asteroid strike – believes it has come up with an audacious solution. The US space agency is readying its Double Asteroid Redirection Test (DART), an ambitious plan slam a spacecraft into an asteroid at 13,500mph to redirect it away from Earth, the mission’s Project Scientist has exclusively revealed.”

#### 460ft Asteroid Discovered Last Month Headed For Earth Tomorrow

Express (UK) <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=017-143&t=c>> (1/13, Kettley) “The asteroid, dubbed by NASA Asteroid 2019 AG3, will make a so-called ‘Earth Close

Approach' in the early morning hours. NASA's scientists at the California-based Jet Propulsion Laboratory (JPL) have tracked the asteroid down to a 2.18am GMT (UTC) flyby. The startling revelation comes just one month after the rogue asteroid was first spotted by radars on December 12, 2018. NASA does not expect the space rock to hit the Earth anytime soon but the asteroid's imposing size is a good enough reason to track it."

#### A 269-Foot Asteroid Will Zip Past Earth Tomorrow, Coming Within Eight Times The Distance To The Moon

Inquisitr <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=018-630&t=c>> (1/12, Lozovschi) "A 269-foot asteroid is hurtling through space on its way to our neck of the woods and will dash by for a short — and perfectly safe — visit tomorrow morning, the Express is reporting. ... 'Near-Earth Objects (NEOs) are comets and asteroids that have been nudged by the gravitational attraction of nearby planets into orbits that allow them to enter the Earth's neighborhood,' explained NASA's Center for Near-Earth Object Studies (CNEOS)."

#### Nasa Warns Of 'Near Miss' Asteroid Passing Earth

MSN (UK) <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=019-97e&t=c>> (1/13, Nathan) "A giant asteroid is due to whizz past the Earth in the early hours of this morning — as Nasa warns another rock could destroy the planet next century. The asteroid will make an 'Earth Close Approach' today, passing around two million miles away from our planet — that is about eight times the distance to the Moon away."

#### Three Skiers Die In Austrian Alps Avalanche

BBC World News (UK) <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=01a-baa&t=c>> (1/13) "Three men have been killed in an avalanche near the Austrian ski resort of Lech am Arlberg, local police say. ... A Nasa graphic tweeted by BBC Weather showed how the geography of Europe has shaped the snow's progress."

#### Humans in Space

#### Russian Leadership To Receive Probe Results On Hole In Soyuz In Coming Weeks

Space Daily <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=01b-ac3&t=c>> (1/11) "The results of the probe into a hole in the hull of the Russian Soyuz spacecraft, which was docked to the International Space Station (ISS), will be communicated to the Russian leadership in the coming weeks, Dmitry Rogozin, the head of Russian space agency Roscosmos, said. In late August, the ISS crew experienced an air leakage which appeared to have been caused by a microfracture in the orbital module of the Soyuz MS-09 spacecraft docked to the station. ... Dmitry Rogozin also added that he was ready to receive NASA Administrator Jim Bridenstine and the Russian corporations' potential US customers in Russia in the wake of the cancellation of his invitation to visit the United States."

#### Dragon Released To Return Science And Supplies Back To Earth

Space Fellowship <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=01c-cc5&t=c>> (1/14, Schmidt) "The SpaceX Dragon cargo craft was released from the International Space Station today at 6:33 p.m. EST. Robotics controllers remotely commanded the Canadarm2 robotic arm to let go of the U.S. space freighter sending it on a solo trajectory back to Earth. Astronaut Anne McClain monitored the activities from the cupola and watched Dragon perform a series of departure burns as it separated itself to a safe distance from the orbital lab. Integrated operations between mission controllers in Houston and SpaceX controllers in California stop when Dragon reaches a point about one kilometer away from the station."

#### Soyuz Spacecraft Assembly To Be Fully Monitored By Video Cameras

Space Daily <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=01d-940&t=c>> (1/11) “Russia’s Rocket and Space Corporation Energia has introduced video surveillance at all stages of the construction of Soyuz spacecraft after a drilled hole in the household compartment of the Soyuz MS-09 spacecraft was found, a source in the Russian space industry told Sputnik. ‘There was a video recording system that monitored the main assembly sites. Now, it has been installed in three more assembly areas where operations were carried out without video surveillance,’ the source said. On August 30, the crew of the International Space Station (ISS) detected an insignificant air leak, caused by a microfracture on a wall of the living section of the Soyuz MS-09 spacecraft, docked to the ISS. The hole was patched on the same day to restore the hermetic integrity of the ISS.”

#### Astronauts Could Be Growing Beans In Space In 2021

SPACE <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=01e-500&t=c>> (1/13, Chua) “For freshly grown produce, space is truly the final frontier. But even astronauts will soon be able to abide by their mothers’ exhortations to eat more veggies. ... Gardening is also known to aid cognitive performance and mental well-being, both of which can flounder under the harrowing effects of extended isolation and confinement. NASA’s Scott Kelly, who spent 342 consecutive days aboard the ISS in 2015, for instance, wrote about the psychological stress he endured in his memoir of the experience.”

#### Houseplants Help Reduce Cabin Fever

Oklahoman <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=01f-b3f&t=c>> (1/12, Moesel) “The new year has arrived, and with it some winter weather and more time spent inside. ... NASA has conducted several studies that show live plants are one of the best pollutant filters, and that is the reason they are working so hard to establish and maintain plants on the space station and future space endeavors. They plan to use plants to clean the air and to help feed the crews.”

#### Moon to Mars

##### NASA’s InSight Lander On Mars Is Now Hunting For Marsquakes

SPACE <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=020-4c5&t=c>> (1/11, Malik) “NASA’s InSight Mars lander is officially hunting for quakes on the Red Planet. The lander’s ultrasensitive seismometer, called the Seismic Experiment for Interior Structure (SEIS), has passed its initial tests and is working well, according to the French space agency CNES, which built the lander’s instrument.”

##### NASA’s InSight Lander Gets Busy On Mars, Starts Hunting For Marsquakes

Inquisitr <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=021-82c&t=c>> (1/11, Lozovschi) “The InSight Mars lander is officially preparing to get its science on. Now that the probe has deployed its main instruments, it will begin collecting data on the red planet as early as next month, reports Gizmodo. InSight is equipped with an ultrasensitive seismometer called the Seismic Experiment for Interior Structure — SEIS, for short. The instrument was built by the French space agency CNES and was designed to help the lander listen for marsquakes and measure the seismic waves that ripple through Mars’ deep interior.”

#### Who’s Who In NASA’s Next Space Race – The Motley Fool

Motley Fool <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=022-2cd&t=c>> (1/12, Smith) “Look at the calendar: Is the year 2019...or is it 1969? It almost seems we’ve traveled 50 years back in time, because all of a sudden everybody wants to go to the moon again. ... NASA itself, of course, which organized the original moon landings back in the 1960s and 1970s, is currently engaging contractors such as Boeing

(which helped build the original Saturn V moon rocket), to build it a Space Launch System capable of returning to the moon.”

#### Here Is The Breathtaking First Panorama Of The Far Side Of The Moon

Forbes <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=023-4ec&t=c>> (1/12, Andrews) “NASA astronaut David Scott, the seventh person to walk on the Moon and, funnily enough, the first to drive around on it, is one of four people still left alive that can describe such an experience. Per BBC, he said that he’s often asked about what it was like. ‘I describe the majesty of the lunar mountains, the layers of volcanic lava or the beauty of the sparkling crystals in the rocks,’ he wrote in his book, *Two Sides of the Moon*. ‘Only an artist or poet could convey the true beauty of space.’”

#### Solar System and Beyond

#### The Brightest Quasar Of The Early Universe Shines With The Light Of 600 Trillion Suns

SPACE <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=024-4d4&t=c>> (1/11, Lewin) “Scientists have discovered the energetic core of a distant galaxy that shatters the record for the brightest object in the early universe, blazing with the light equivalent to 600 trillion suns. Researchers identified the object — a black-hole-powered object called a quasar, among the universe’s brightest inhabitants — because of a chance alignment with a dim galaxy closer to Earth that magnified its light.”

#### Brightest Quasar Ever Found Shines With The Intensity Of 600 Trillion Suns

New Atlas <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=025-dde&t=c>> (1/13, Irving) “From our point of view here on Earth, the brightest object in the sky is unquestionably the Sun. But this unremarkable star is a mere 10-watt bulb compared to quasars, extremely luminous galactic cores that shine so intensely thanks to their ravenous hunger for nearby material. Now, astronomers have detected the brightest quasar ever found, shining with the light of almost 600 trillion Suns.”

#### Group Of Telescopes Finds X-ray Engine Inside Mysterious Supernova

Phys (UK) <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=026-b6a&t=c>> (1/11) “ESA’s high-energy space telescopes Integral and XMM-Newton have helped to find a source of powerful X-rays at the centre of an unprecedentedly bright and rapidly evolving stellar explosion that suddenly appeared in the sky earlier this year. The ATLAS telescope in Hawaii first spotted the phenomenon, since then named AT2018cow, on 16 June. Soon after that, astronomers all over the world were pointing many space- and ground-based telescopes towards the newly found celestial object, located in a galaxy some 200 million light years away.”

#### Hubble Spies Brightest Known Quasar In The Early Universe

Astronomy Now (UK) <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=027-7ca&t=c>> (1/11) “Thanks to a chance alignment and the magnification provided by the gravity of an intervening galaxy, the Hubble Space Telescope has spotted the brightest quasar ever seen in the early universe, a galactic nucleus powered by a supermassive black hole several hundred million times the mass of the Sun and 11 trillion times as bright. Light from the newly discovered quasar, known as J043947.08+163415.7, began its journey when the Universe was about one billion years old.”

#### Sorry, Astronomers Haven’t Found The Brightest Quasar In The Entire Universe

Forbes <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=028-daf&t=c>>

(1/11, Siegel) “In astronomy, there are two types of questions to answer: easy ones and hard ones. The easy questions involve nearby objects that are plentiful and easy to see; the hard ones involve distant objects that are rare and difficult to find. In many ways, the biggest questions of all involve determining what’s happening at the greatest cosmic extremes.”

#### Distant, Possibly Habitable Planet Spotted By Citizen Scientists

Fox News <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=029-b64&t=c>> (1/10, Mathewson) “Citizen scientists unveiled a distant exoplanet that is believed to be roughly twice the size of Earth and located within its star’s habitable zone. The exoplanet, named K2-288Bb, could either be a rocky world like Earth or a gas-rich planet like Neptune. Using data from NASA’s Kepler space telescope, the new world was found 226 light-years from Earth, in the constellation Taurus, according to a statement from NASA.”

#### Citizen Scientists Discover Strange New World That Pro Astronomers Missed

NBC News <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=02a-786&t=c>> (1/11) “With help from a dead spacecraft, citizen scientists just discovered an alien world that professional astronomers had overlooked. The newfound exoplanet orbits a small red star 226 light-years away from Earth in the constellation Taurus. ... The observations that led to the discovery were made in early 2015 by NASA’s Kepler space telescope, which stopped operating last October when it ran out of propellant. But the data about the observations lay buried in a vast trove of Kepler data. As a result, the exoplanet went undetected.”

#### NASA’s TESS Satellite Finds Three Exoplanets In Its First Three Months

Florida Today <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=02b-a84&t=c>> (1/11, Jaramillo) “NASA’s newest planet-hunter that kicked off its mission after a launch from the Space Coast has found even more worlds orbiting outside our solar system. Launched from Cape Canaveral Air Force Station on a SpaceX Falcon 9 rocket in April, the Transiting Exoplanet Survey Satellite, or TESS, has already found at least three exoplanets in its first three months of observations. The results arrived much faster than even some ground-based telescopes.”

#### Amateur Astronomers Discover Strange New World That Pros Missed

New York Daily News <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=02c-bc4&t=c>> (1/12, Gifford) “Amateur astronomers have discovered a whole new world that even scientists couldn’t spot. The exoplanet, called K2-288Bb, orbits a small red star that’s a mere 226 light-years away from Earth in the constellation Taurus. It’s about double the size of Earth and circles its host star in the habitable zone, where liquid water and possibly life could exist, reported NBC News.”

#### NASA’s New World-Hunting Satellite Just Found Two More Exoplanets

Discover Magazine <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=02d-bf2&t=c>> (1/11, Parks) “Within just a few months of beginning its primary science mission, NASA’s planet-hunting Transiting Exoplanet Survey Satellite (TESS) already has identified over 50 exoplanet candidates. Now, TESS has discovered and confirmed one of the densest sub-Neptune (meaning smaller than Neptune) planets found so far: HD 21749b. As an added bonus, the newly confirmed world just so happens to be the longest-period confirmed TESS planet discovered to date. Furthermore, it also seems to have a planetary sibling that is surprisingly similar to Earth.”

#### Massive Exoplanet Found Within Binary Star System

Sci-News <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=02e->

4e9&t=c> (1/12, De Lazaro) "Located 226 light-years away in the constellation Taurus, the newly-discovered planet orbits the fainter member of the K2-288 binary system. This system contains a pair of dim, cool M-type stars separated by about 5.1 billion miles (8.2 billion km), roughly six times the distance between Saturn and the Sun. The brighter star, K2-288A, is about half as massive and large as the Sun, while its companion, K2-288B, is about one-third the Sun's mass and size."

#### Astronomers Might Have Finally Seen A Star Become A Black Hole

Florida Today <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=02f-868&t=c>> (1/11, Jaramillo) "Astronomers may have witnessed a never-before-seen event: A star becoming a black hole. Last June, astronomers encountered an unusual explosion some 200 million light-years from Earth that still puzzles them today. Since then, scientists around the world have tried to figure out the object's identity using a NASA-funded telescope in Hawaii."

#### Astronomers May Have Seen A Star Turn Into A Black Hole For The First Time

Vice <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=030-ffb&t=c>> (1/13, Oberhaus) "On June 16, 2018, astronomers around the world witnessed a cosmic flash unlike anything they'd ever seen before. Now, in a forthcoming paper to be published in the *Astrophysical Journal*, an international team of 45 scientists argue that what they saw that day was likely the exact moment a star collapsed into a black hole. If they're right, it would be the first time that this transition was ever witnessed by human scientists. ...'If we're seeing the birth of a compact object in real time, this could be the start of a new chapter in our understanding of stellar evolution,' NASA scientist Brian Grefenstette said in a statement."

#### Astronomers Have Found A Mysteriously Shrinking Black Hole

ScienceAlert (AUS) <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=031-047&t=c>> (1/14, Christian) "This past March, a NASA instrument on the International Space Station spotted a black hole, about 10,000 light-years away from Earth, in the process of devouring a star. What happened next was weird, even by the standards of super-dense celestial objects from which not even light can escape: the black hole started to shrink."

#### 'Light Echoes' From A Distant Black Hole Show It 'Shrank Dramatically' After Gorging On A Star

Inquisitr <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=032-68e&t=c>> (1/12, Lozovschi) "NASA's Neutron star Interior Composition Explorer (NICER) telescope has helped astronomers gain unprecedented insight into what happens to a black hole after it gobbles up a star. In a new study published this week in the journal *Nature*, a team of scientists from NASA, the Massachusetts Institute of Technology (MIT), and the University of Maryland details the interesting case of a recently discovered black hole that went through a dramatic slim-down after gorging on a nearby star."

#### 'Sub-Saturns' May Force Scientists To Revise Idea Of How Planets Form

SPACE <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=033-bd8&t=c>> (1/12, Bartels) "'Astronomers know our solar system better than any other, but they're still learning new ways in which it doesn't seem to be particularly normal. One such quirk, in patterns of planetary sizes, was the subject of a news conference held yesterday (Jan. 8) at the annual meeting of the American Astronomical Society. The results could prompt scientists to revise a leading theory of how planets form. ... Take, for example, the staggering size gap between Neptune and Saturn. Neptune is about 17 times the mass of Earth, whereas Saturn is far bigger at 95 times Earth's mass, according to NASA. In between, nothing. The core accretion model explains that gap with a mechanism called 'runaway gas accretion.'"

## Alien Life May Exist On Newly Discovered Barnard's Star Planet, According To Astronomers

Tech Times <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=034-df3&t=c>> (1/11, Adamson) "Barnard's Star, a nearby star system located just six light-years away, is orbited by a frozen Super-Earth. The exoplanet called Barnard b (or GJ 699 b) was discovered only two months ago. Researchers who found the planet do not think the icy world could support life because of its extreme conditions. Barnard b only receives about 2 percent of radiation our home planet gets from the sun and its surface temperature is nearly -275 degrees Fahrenheit. ... Researchers are not yet precisely sure how large the planet is, but once it launches, NASA's James Webb Space Telescope could help determine the size of this Super-Earth and whether or not it has the right size for subsurface oceans to exist."

## Alien Life May Exist On Giant Super-Earth 30 Trillion Miles From Home

Fox News <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=035-c43&t=c>> (1/11, Ciaccia) "A new paper published by astrophysicists at Villanova University suggests that alien life might actually be out there, it just might live on a planet 30 trillion miles from Earth. The planet that orbits Barnard's Star, known as Barnard b, could have the potential for extraterrestrial life if water exists on the planet. That's due to the possibility of geothermal heating, which could create an ocean for primitive life. ... Though Barnard b was only discovered a few months ago, Barnard's Star has been on the radar of the astrophysicists for some time, Guinan added. 'In 2003 it became a founding star member of the Villanova "Living with a Red Dwarf" program that has been sponsored by the National Science Foundation/National Aeronautical and Space Administration (NASA).'"

## Scores Of Rocky Exoplanets May Be Bone Dry And Lifeless, Astronomers Now Say

Forbes <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=036-713&t=c>> (1/13, Dorminey) "Astrobiologists like to think that forming solar systems result in cauldrons of plenty; cornucopias of molecular compounds that make for terrestrial worlds just itching to form life. But observations of an eroding debris disk around the nearby red dwarf star AU Microscopii (AU Mic) hint that young planets orbiting such M-stars may be bone dry and lifeless. The observations --- described this past week at the American Astronomical Society's (AAS) Winter meeting here in Seattle, detail the first-ever images of a debris disk around a young red dwarf star. Observing with NASA's Hubble Space Telescope and the European Southern Observatory's Very Large Telescope (VLT) in Chile, the young, 23 million-year-old star lies only 32 light-years away in the southern constellation of Microscopium."

## Mysterious 'Cow' Explosion In Deep Space Baffles Scientists

Newsweek <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=037-c18&t=c>> (1/11, Kuin) "Something highly unusual was picked up by the Asteroid Terrestrial Impact Last Alert System (ATLAS) on June 16, 2018. The discovery of a strange flare in the sky—brightening and fading—was reported in an astronomical telegram, which then alerted scientists. The source was named AT2018cow—based on a naming convention for transient sources where the last three letters are randomly assigned. Understandably, though, scientists quickly nicknamed it 'the Cow.'"

## Astronomers Debate An Unprecedented 'Holy Cow' Outburst

Astronomy Now (UK) <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=038-cf2&t=c>> (1/13) "On 16 June 2018, astronomers spotted a celestial outburst in a galaxy 200 million light years away that was unlike any ever seen before. Over three days, the object known as AT2018cow – or 'the Cow' for short — emitted a torrent of radiation 10 times brighter than a typical supernova that slowly faded away over several months. ... Data from NASA's NuSTAR and the European Space Agency's XMM-Newton and INTEGRAL satellites, along with the Very Large Array, indicate the optical and ultraviolet flash initially detected was generated by a



supernova blast and that X-ray emissions seen after the outburst came from gas heating up as it fell toward a neutron star or black hole.”

#### Mysterious ‘Cow’ Cosmic Explosion Explained

Inquisitr <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=039-fa4&t=c>> (1/11, Lozovschi) “Last year, on June 16, the Asteroid Terrestrial-impact Last Alert System (ATLAS) telescope in Hawaii detected a sudden and powerful explosion in space. The blast — which was dubbed AT2018cow and subsequently became known as ‘the Cow,’ after the last three letters of its official name — baffled astronomers, who couldn’t explain what had caused it. As the Inquisitr reported at the time, the Cow was between 10 to 100 times brighter than a supernova and lit up the cosmos for three days, then faded away within a few months — lasting considerably less than typical supernovae.”

#### Holy Cow! Mysterious Blast Studied With NASA Telescopes

Phys (UK) <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=03a-99e&t=c>> (1/11) “A brief and unusual flash spotted in the night sky on June 16, 2018, puzzled astronomers and astrophysicists across the globe. The event—called AT2018cow and nicknamed ‘the Cow’ after the coincidental final letters in its official name—is unlike any celestial outburst ever seen before, prompting multiple theories about its source.”

#### Birth Of A Black Hole Or Neutron Star Captured For The First Time

Space Daily <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=03b-03a&t=c>> (1/14) “A Northwestern University-led international team of astronomers is getting closer to understanding the mysterious bright object that burst in the northern sky this summer, dubbed AT2018cow or ‘The Cow.’ With the help of W. M. Keck Observatory on Maunakea, Hawaii and the University of Hawaii Institute for Astronomy’s ATLAS twin telescopes, the multi-institutional team now has evidence that they likely captured the exact moment a star collapsed to form a compact object, such as a black hole or neutron star.”

#### From Volcanoes On Mars To Scarps On Mercury

SPACE <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=03c-f62&t=c>> (1/13, Rothery) “The New Horizons spacecraft, which flew past Pluto in 2015, successfully completed a flyby of ‘Ultima Thule,’ an object in the Kuiper belt of bodies beyond Neptune on January 1, 2019. The name Ultima Thule, signifying a distant unknown place, is fitting but it is currently just a nickname pending formal naming. The official names of the body and of the features on its surface will eventually be allocated (this could take years) by the International Astronomical Union (IAU), which celebrates its centenary in 2019.”

#### Snowman In Space And More Conversation Starters For Your Weekend

Chicago Tribune <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=03d-7e4&t=c>> (1/11, Meyerson) “Quick! Think of something interesting to say. If nothing’s coming to you, here are your conversation starters for the weekend. ... NASA has this spacecraft that took the first close-up photos of Pluto a few years ago. Then it kept going. A billion miles later, it just sent back photos of the most distant object explored in the solar system — and it looks like a snowman. It’s called Ultima Thule, and it’s a small, icy object that looks like two spheres that have been fused together.”

#### From Your Backyard And ‘Out There’

Columbus (OH) Dispatch <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email->

47e5&l=03e-e7c&t=c> (1/11, Becker) “These certainly are exciting times in space exploration. On January 1, 2019, NASA’s New Horizon probe, which flew past Pluto in 2015, reached its next target, a red, snowman-shaped double rock nicknamed Ultima Thule. Then on January 3, China made history by landing the first probe (Chang’e) on the far side of the Moon.”

#### Wide Field Camera 3 Anomaly On Hubble Space Telescope

SpaceRef <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=03f-9c6&t=c>> (1/11) “NASA continues to work toward recovering the Hubble Space Telescope’s Wide Field Camera 3 instrument, which suspended operations on Tuesday, Jan. 8. Shortly after noon EST on Jan. 8, software installed on the Wide Field Camera 3 detected that some voltage levels within the instrument were out of the predefined range. As expected under those conditions, the instrument autonomously suspended its operations as a safety precaution.”

#### Uh Oh, Hubble’s Wide Field Camera 3 Is Down

Universe Today <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=040-6e2&t=c>> (1/11, Gough) “On January 8th, an important piece of equipment on the Hubble Space Telescope went down. The Wide Field Camera 3 (WFC3) suspended its operations because of a hardware. The Hubble team is investigating the anomaly, and during this time the space telescope’s other instruments are working normally and continuing their science operations. The WFC3 was installed on the Hubble in 2009. It replaced the Wide Field and Planetary Camera 2 (WFPC2). The WFC3 is the most technologically advanced instrument on the Hubble, and it has captured some of the most stunning and famous images ever captured.”

#### A NASA Probe Just Snapped A Pic Of Earth From An Insane 71 Million Miles Away

Thrillist <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=041-d78&t=c>> (1/11, McGauley) “It’s always a bit mesmerizing to see photos taken of Earth from outer space. Besides reminding you just how pretty our big ol’ Blue Marble is, it’s one of those things that stops you in your tracks and makes you go ‘huh, I’m tiny’ Well, get ready to feel like an even smaller blip in the universe, because NASA just released a brand new photo of our planet from an astonishing 71 million miles away.”

#### NASA Snap Incredible Image Of 87 Million Tonne ‘Apocalypse Asteroid’

Daily Mail (UK) <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=042-8fe&t=c>> (1/13, Kenton) “NASA has warned that the gigantic ‘apocalypse asteroid’ it captured in a stunning photograph could release 80,000 times more energy than the Hiroshima atomic bomb if it collides with Earth – potentially ending life as we know it. Named Bennu, the 500 foot rock is taller than the Empire State building and estimated to be 1,664 times heavier than the Titanic.”

#### Lego ‘LUVOIR’ Space Telescope Debuts At Astronomy Conference

SPACE <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=043-fd4&t=c>> (1/11, Weitering) “A Lego model of NASA’s Large UV Optical Infrared Surveyor (LUVOIR), a proposed mission that could one day succeed the James Webb Space Telescope, has landed here at the 233rd meeting of the American Astronomical Society (AAS). LUVOIR is one of four big astrophysics missions that NASA is thinking about launching in the mid-2030s.”

#### Space Agency Admits ‘We Can’t Hide Catastrophic Event’

Daily Express (UK) <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=044-d6d&t=c>> (1/12, Hoare) “Asteroids, which usually sit in the inner solar system, tend to orbit the Sun, but do not

resemble the shape of a planet. There are millions of these rock formations flying around space and their collisions – known as impact events – have played a significant role in shaping many planets. Throughout history, hundreds have struck Earth, causing death, injury and property damage, though nothing more significant. Some conspiracy theorists believe NASA is involved in a cover-up regarding a catastrophic event that could wipe out the human race.”

## Space Tech

### NASA's Deep-Space Nuclear-Power Crisis May Soon End, Thanks To A Clever New Robot In Tennessee

Business Insider <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=045-056&t=c>> (1/13, Mosher) “NASA relies on plutonium-238 (Pu-238), a human-made radioactive element, to power its longest-operating and farthest-flying spacecraft. Nearly all Pu-238 was made during the Cold War, and supplies are running low. The shortage threatens to limit deep-space exploration. The Department of Energy is now making new Pu-238 and recently achieved an eight-fold increase in production with a new robot.”

### Scientists Have Built A Steam-Powered Spacecraft That Can Hop Asteroids And Mine Them For Fuel

Inquisitr <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=046-e42&t=c>> (1/12, Lozovschi) “Meet the World Is Not Enough (WINE) spacecraft, a newly developed asteroid explorer that relies not on fuel, but on steam to get around. The probe uses a steam propulsion system to get off the ground and travel from one location to the next — and all it needs is a little bit of water to keep it going. This ingenious machine is the product of a wonderful collaboration between the University of Central Florida (UCF) and the Pasadena-based Honeybee Robotics — and could kick-start a new generation of space probes, reports CNET. ... Since asteroids, particularly the carbon-rich ones, are a bountiful source of water — which is bound up as hydrated clay minerals in their composition, explains NASA — WINE is fully equipped to carry on exploring without ever running out of fuel.”

### Steam Powered Spacecraft Could Explore Faraway Worlds ‘Forever’

Daily Mail (UK) <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=047-0a8&t=c>> (1/11, Prigg) “A steam powered spacecraft that could roam the sky ‘forever’ is being developed by Florida researchers. Called ‘the World Is Not Enough’, the NASA funded prototype craft extracts water from asteroids or other planetary bodies to generate steam. It then uses this to drive a rocket thruster and propel itself.”

### Steam-Powered Space Probes Could Refuel Themselves Indefinitely

New Atlas <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=048-aef&t=c>> (1/13, Szondy) “A team of researchers from the University of Central Florida (UCF) and Honeybee Robotics in California has developed a prototype steam-powered space probe. This may seem like a great leap backwards, but by using water as a propellant, the World Is Not Enough (WINE) spacecraft can operate indefinitely by topping off on ice gathered while visiting asteroids and other bodies to fuel future travels. ... Developed as part of NASA's Small Business Technology Transfer program, the WINE project is currently seeking partners to produce a flightworthy craft to test in space.”

### How Do Solar Panels Work?

NBC News <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=049-4bc&t=c>> (1/12) “Fifty years ago, solar panels were so expensive that they were used mainly for powering billion-dollar space probes, and that’s about it. But as the panels became cheaper — and as environmental worries about coal and other fossil fuels made renewable energy sources like solar more attractive — solar panels began sprouting up all over the place. ... NASA’s grapefruit-sized Vanguard 1 satellite was the first to use solar cells when it was launched in 1958, and solar panels are still used extensively in space. The International Space Station, for example, is powered by

arrays of solar panels that can generate up to 120 kW of electricity — enough to power about 40 homes.”

#### Researchers Close In On Harnessing Electricity From Bacteria

Cosmos Magazine (AUS) <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=04a-0c2&t=c>> (1/14, Carne) “US engineers have reported progress in the quest to gather usable electricity from bacteria. Scientists know that certain species of bacteria living in oxygen-deprived environments (including the human gut) have evolved a unique form of breathing that involves excreting and pumping out electrons. In other words, they actually produce electricity that could, in theory, be used to power equipment or purify water. And with this knowledge, researchers are working, for example, to design effective microbial fuel cells or generate power from organic waste. NASA is even investigating whether bacteria could power future space missions.”

Various

#### CRS-16 Dragon Returns To Earth Following ISS Departure

NASA Space Flight <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=04b-bb8&t=c>> (1/10, Bergin) “SpaceX’s CRS-16 Dragon spacecraft has concluded the EOM (End Of Mission) phase of her mission following unberthing from the International Space Station (ISS) on Sunday. Dragon’s release from the Space Station Remote Manipulator System (SSRMS) occurred at 23:33 UTC, with splashdown in the Pacific Ocean expected around 05:10 UTC on Monday. The conclusion to Dragon’s mission was expected earlier in the week. However, ISS managers opted to delay the EOM events to Sunday, due to poor weather conditions in the splashdown zone.”

#### Dragon Cargo Craft Returns To Earth

Spaceflight Now <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=04c-3e3&t=c>> (1/14, Clark) “A SpaceX-owned commercial cargo craft splashed down in the Pacific Ocean west of Baja California late Sunday, closing out a 39-day mission that delivered 2.8 tons of supplies, experiments and holiday treats to the International Space Station, and returned home with research specimens and no-longer-needed hardware. The unpiloted supply ship, loaded with about 2 tons of gear and experiment specimens, departed the space station at 6:33 p.m. EST (2333 GMT) Sunday with a ground-commanded release from the orbiting research lab’s 58-foot (17.7-meter) Canadian-built robotic arm. The Dragon capsule fired its thrusters for a series of departure burns to fly away from the station’s vicinity, setting up for a deorbit burn at 11:19 p.m. EST (0419 GMT) to slow the craft’s velocity enough to drop out of orbit and re-enter Earth’s atmosphere.”

#### SpaceX Dragon Spacecraft Set For ISS Departure And Pacific Ocean Splashdown

Florida Today <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=04d-61f&t=c>> (1/11, Kelly) “A robotic SpaceX Dragon spacecraft launched from Cape Canaveral last month is set for a Sunday departure from the International Space Station and subsequent Pacific Ocean splashdown. Loaded with science experiments and excess items from the ISS, Dragon release is scheduled for 6:30 p.m. Eastern time and its splashdown is expected off the coast of California at 12:10 a.m. The spacecraft launched to the ISS on a Falcon 9 rocket from Launch Complex 40 on Dec. 5 with nearly 6,000 pounds of food, supplies and experiments for the crew. The mission was SpaceX’s 16th under NASA’s Commercial Resupply Services contract, known as CRS-16.”

#### The International Space Station Will Release Its SpaceX Cargo Ship This Weekend

BGR <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=04e-57e&t=c>> (1/13, Wehner) “Both SpaceX and NASA are eager to get the Dragon cargo spacecraft back to Earth now that it has fulfilled its duties in bringing much-needed supplies to the crew aboard the International Space Station. The ship was

originally expected to be released from the ISS earlier this week but plans have since changed, and NASA now expects the space station to bid farewell to the Dragon on Sunday afternoon instead.”

#### Station, SpaceX Managers Set Dragon Release For Sunday Afternoon

Space Fellowship <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=04f-a3c&t=c>> (1/12, Schmidt) “To take advantage of calmer sea states in a different location in the Pacific Ocean, SpaceX and the International Space Station Program agreed to move the departure of the SpaceX-CRS-16 Dragon cargo craft from the station from early Sunday morning to late Sunday afternoon, setting up the first night splashdown and recovery of a Dragon vehicle. Dragon’s hatch will be closed Sunday morning, and the spacecraft will be detached from the Harmony module around 3 p.m. EST Sunday. Ground controllers will now release Dragon from the Canadarm2 robotic arm at 6:30 p.m. Sunday. NASA TV coverage of the operation without commentary will begin at 6:15 p.m. NASA Flight Engineer Anne McClain will monitor the release from the station’s cupola.”

#### NASA, SpaceX Push Back First Flight Of Crew Dragon To ISS

Florida Today <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=050-494&t=c>> (1/11, Kelly) “SpaceX, one of two companies tasked with taking astronauts to the International Space Station, has pushed back its first uncrewed demonstration flight to no earlier than February. CEO Elon Musk and NASA both confirmed this week that the mission will fly sometime next month, a delay from the previously mentioned Jan. 17 launch date. The rocket and Crew Dragon spacecraft appeared for the first time at Kennedy Space Center’s pad 39A on Jan. 3.”

#### NASA Says SpaceX Crew Dragon Launch Will Occur In Feb. At The Earliest

Seeker Network <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=051-342&t=c>> (1/11, Howell) “The causes of both of NASA’s shuttle disasters are complex — so complex that the agency took about two years to run flights again after fatal disasters in 1986 and 2003. Investigation boards pointed to a range of technical factors or failures in the shuttle systems. There also were human factors; examples included rushing launch dates, or managers deciding to ‘normalize deviance’ (meaning, if a small failure happens often enough without an issue, mission managers accept that as the norm).”

#### NASA Announces Delay Of SpaceX Crew Dragon Test Launch

BGR <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=052-ac6&t=c>> (1/11, Wehner) “SpaceX’s Crew Dragon is one of the spacecraft that NASA will eventually use to ferry astronauts into space, but it’s not quite there yet. Unfortunately, an anticipated January test flight has now been pushed back for unspecified reasons, and NASA now says that Crew Dragon won’t lift off until February at the earliest. SpaceX has been working to fill NASA’s need for a crew-capable ship that it can launch on its own terms without relying on Russia’s Soyuz rockets, but the company has been hit with several setbacks that pushed back its delivery timeline. It’s still unclear at this point when Crew Dragon might actually be ready for use in a NASA mission.”

#### Why 2019 Is Shaping Up To Be A Stellar Year For Space Exploration

Washington Post <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=053-c7e&t=c>> (1/11, Davenport) “Elon Musk is prone to tweeting out artistic renderings of the rockets and spacecraft he intends to build, offering his followers a glimpse of the future he imagines for humanity on other planets. So when he recently posted a photo of a launchpad walkway leading out to his rocket and spacecraft, Musk felt compelled to clarify in a follow-up tweet. ‘Sorry, to be clear, this pic is real,’ he wrote. ‘Nothing rendered.’ Though the prospect of the return of human spaceflight from U.S. soil has at times seemed like a mirage, NASA’s astronauts could this year return to space from the Florida Space Coast for the first time since the space shuttle was retired more than seven years ago.”

## Government Shutdown Across America

New York Times <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=054-2b2&t=c>> (1/13, Blinder) “In many parts of the United States, the shutdown has underscored how deeply the federal government is connected to everyday life. ... So have laboratories run by NASA and the Smithsonian Institution’s museums along the National Mall. Food inspections have become fewer, as have many checks by the Environmental Protection Agency. Travelers have complained that airport security lines, run by Transportation Security Administration officers who are working without pay, have come to a crawl. Trash has piled up at National Park Service sites, or at least those that are still open.”

## The Shutdown Today: Trump Urged To Reopen Government

Associated Press <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=055-926&t=c>> (1/14, Press) “Sen. Lindsey Graham, R-S.C., who is close to President Donald Trump, says he’s been pushing the president to reopen the government for a few weeks to continue negotiating with Democrats over funding for a border wall before bypassing Congress and declaring a national emergency. ... Nearly everyone at NASA is being told to stay home, as are most at the Internal Revenue Service, which processes tax returns and issues refunds, though the administration says it will issue refunds during the shutdown.”

## Experts Worry Government Shutdowns Will Drive NASA Employees To The Private Sector

Houston Chronicle <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=056-d4b&t=c>> (1/14, Stuckey) “NASA employees have endured three government shutdowns in the past year, each time halting their groundbreaking work as political skirmishes in Washington, D.C., are hashed out. The first two came in the beginning months of 2018, but they were short: more of an annoyance, really. But the current closure — which started Dec. 22 with no end in sight — has been beyond frustrating for many, not just because of money lost but because of work delays. It’s been enough of a hindrance that some experts worry it could drive NASA engineers to the fast-growing space projects in the private sector.”

## Wall Negotiations At Standstill In Congress: Shutdown Update

Bloomberg News <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=057-881&t=c>> (1/11) “The partial government shutdown stretched into its 21st day, tying the record for the longest. Judges, law enforcement officers, NASA engineers, weather forecasters and office staff were among some 800,000 federal workers who missed their first paychecks on Friday.”

## The Government Shutdown Is Hitting Brevard Where It Hurts: The Space Industry

Florida Today <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=058-119&t=c>> (1/11, Kelly, Dave, Price) “The longest partial government shutdown in U.S. history has suspended dozens of agencies and programs across the country. Here in Brevard County, the political impasse is hitting where it hurts most: space. Most operational staff at Kennedy Space Center are dealing with the realities of being furloughed with no pay as the shutdown that began on Dec. 22 over President Trump’s \$5.7 billion demand for a border wall opposed by Congress wraps up its third week. Of the 17,586 employees assigned to 10 NASA centers around the country, only 817 are working to support mission critical operations like the International Space Station, which requires round-the-clock attention. At KSC, of the total 2,013 NASA staff, only 196 are working. An additional 240 are on-call.”

## For Many Ohio Federal Employees, Shutdown Means Hard Choices

Columbus (OH) Dispatch <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email->

47e5&l=059-6b3&t=c> (1/11, Wehrman) “For more than 6,500 Ohioans employed by the federal government, Friday marked a grim milestone: The first day they have missed a paycheck since the government partially shut down Dec. 22. ... Paul Greenberg, a scientist at NASA Glenn in Cleveland and vice president of the Lewis Engineers and Scientists Association Local 28, said he has yet to miss bills — ‘I’m not sure how long I can do that’ — but acknowledges that for many of his colleagues, there’s a fine line between making do and falling into financial hardship. Something as simple as a few missed paychecks, he said, could send someone’s financial status into chaos.”

#### The Shutdown Reveals Just How Automated Our Government Already Is

Gizmodo <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=05a-7f8&t=c>> (1/11, Merchant) “If you call the White House right now, thanks to the government shutdown, you’ll be treated to an automated message: ‘We apologize but due to the lapse in federal funding, we are unable to take your call. Once funding has been restored, our operations will resume.’ ... According to Jim Walker, the former Robotic Process Automation lead at NASA Shared Services Center, more advanced automated systems are on the rise across government. ‘Twenty-five federal agencies have already put their robotic toes in the water,’ Walker, now at UIPath, wrote in a recent article about RPAs in the federal government.”

#### Frustrated Government Workers Share \$0 Pay Stubs On Twitter

USA Today <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=05b-52f&t=c>> (1/11, Molina) “Friday should be payday for many government workers. Instead, they’re faced with pay stubs reading a number you never want to see: \$0.00. ... Oscar Murillo, an aerospace engineer with NASA’s Armstrong Flight Center, shared his \$0.00 pay stub, which still shows mandatory deductions for health benefits.”

#### US Shutdown Becomes Longest Ever

BBC World News (UK) <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=05c-43f&t=c>> (1/12) “The partial shutdown of the US government has become the longest ever, with no end in sight to the political standoff. ... Oscar Murillo, an aerospace engineer at Nasa, posted his \$0 cheque on Twitter and said he had actually lost money because of mandatory deductions.”

#### Shutdown Grounds NASA’s Airborne Observatory

SPACE <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=05d-b2f&t=c>> (1/11, Foust) “The ongoing partial government shutdown has grounded a NASA aircraft used for astronomical observations amid reviews about how to operate that program in the future. The Stratospheric Observatory for Infrared Astronomy (SOFIA), a Boeing 747 with a 2.5-meter telescope mounted in its fuselage, has been unable able to perform any science flights since the shutdown started Dec. 22, project officials said during a town hall session about the program Jan. 8 during the 233rd Meeting of the American Astronomical Society (AAS) here.”

#### Las Vegas Valley Workers Say Shutdown Drags Down Morale

Las Vegas Review-Journal <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=05e-866&t=c>> (1/13, Lacanlale) “A group of federal workers gathered in the Henderson office of U.S. Rep. Susie Lee on Saturday afternoon to share the impacts that the government shutdown, which has now lasted more than three weeks, has had on their lives. ... Arcata Associates represents a government contractor with about 500 employees nationwide working for the Department of Defense and NASA. While the Defense Department employees are unaffected, roughly 75 NASA employees are out of work or are being paid by his company to continue working, an Arcata representative said.”

#### Cities And States With The Most Federal Workers Affected By The Shutdown

Wall Street Journal <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=05f-5ca&t=c>> (1/12, Linke) The partial government shutdown is affecting federal employees nationwide, including NASA employees in Huntsville, Alabama.

#### Furloughed Workers Stretch To Manage Financial Concerns During Shutdown

NBC News <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=060-ce6&t=c>> (1/11) “Darryl Floyd was already feeling worried before the government shutdown started. ... Steve Ching, a contractor with NASA who works as an industrial technician, says the shutdown ‘also affects scientists, engineers, all the different support staff down at the Kennedy Space Center. They have literally closed the gates and no one is working.’”

#### 1 More Way Some Federal Workers Struggle During Shutdown

NPR <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=061-dbe&t=c>> (1/14, Madden) “At 10 o’clock in the morning, Austin Lanham should be working at NASA’s Goddard Space Flight Center routing satellite communication. But with the partial federal government shutdown, he’s not working, deadlines are slipping, he’s not getting paid and the preschool his two sons go to is shut down because it’s on NASA’s property. ‘Now I’m just a full-time stay at home dad,’ he says.”

#### Workers, Businesses Gird Themselves For Empty Payday

Orange County (CA) Register <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=062-3a1&t=c>> (1/11, Smith) “When the partial government shutdown took effect just before Christmas, Mark Muñoz, father to seven daughters, braced for the worst. ... NASA is closed as a result of the shutdown, but things are business as usual at its Jet Propulsion Laboratory in La Canada Flintridge. ‘We are a forward-funded contractor, so we’re paid in advance,’ explained JPL spokeswoman Victoria McGregor. ‘We’ve worked through every government shutdown.’ As a federally funded research and development facility, JPL is managed by the California Institute of Technology in Pasadena under contract from NASA.”

#### City Offers Furloughed Workers Help With Taxes, Bills

Washington Times <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=063-e4a&t=c>> (1/14) “The federal government shutdown has prompted Virginia’s second-largest city to offer help to furloughed federal employees. The city of Norfolk said in a statement Friday that it’s offering assistance through payment plans on property taxes, water bills and city parking fees. ... Norfolk is part of Virginia’s Hampton Roads region, where there is a heavy presence of federal government workers and contractors. It includes NASA’s Langley Research Center, various Coast Guard stations and a larger regional airport.”

#### NASA Langley Operating On Skeleton Crew; Jefferson Lab Barely Affected

##### Hampton Roads (VA) Virginian-Pilot

<<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=064-2f4&t=c>> (1/12, Dietrich) “As the partial federal shutdown hits historic levels, it isn’t hitting all federal agencies equally, including in the sciences. ... In Hampton Roads, the two most visible federal research facilities — NASA Langley Research Center in Hampton and Jefferson Laboratory in Newport News — are impacted in disparate ways. At Jefferson Lab, which employs 678 full-time employees engaged in world-class fundamental physics, the shutdown is causing barely a ripple.”

#### Government Shutdown Becomes Longest Federal Closure In US History



Omaha (NE) World-Herald <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=065-514&t=c>> (1/12, Lemire, Mascaro, Colvin) “The partial government shutdown became the longest closure in U.S. history when the clock ticked past midnight into early Saturday as President Donald Trump and nervous Republicans scrambled to find a way out of the mess. ... Jack Lyons, a contractor working on massive rocket test stands for NASA, stands in his workshop while spending the furlough on his small side business making props for marching bands, in Madison, Ala., Tuesday, Jan. 8, 2019. ‘They’re trying to use people as bargaining chips, and it just isn’t right,’ Lyons said. Unlike civil service workers who expect to eventually get back pay, Lyons doesn’t know if he’ll ever see a dollar from the shutdown period.”

Federal Workers Affected By The Government Shutdown Have More Than \$400 Million In Mortgage And Rent Payments Due This Month, And It Could Cause Chaos For The US Housing Market

Business Insider <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=066-af9&t=c>> (1/11, Bryan) “The ongoing government shutdown looks like it may cause a mess for the US housing market. ... ‘No payments means no gas for our cars, no money for our prescriptions, our groceries, our rents and our mortgages,’ Steve Ching, an electrician who contracts for NASA, told the Washington Post. ‘We’re all wondering how long our families will be able to hold out.’”

NITAAC Expects Post-Shutdown Push – FCW

Federal Computer Week <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=067-fa5&t=c>> (1/11, Rockwell) “The head of the National Institutes of Health Information Technology Acquisition and Assessment Center anticipates a rush of business to its three governmentwide acquisition contracts as the federal government spins back up after the shutdown. ... NITAAC, like NASA’s Solutions for Enterprise-Wide Procurement and the General Services Administration’s Federal Acquisition Services GWACs, remain open for business.”

Astrophysics Meetings, But Not Missions, Disrupted By Government Shutdown

SPACE <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=068-204&t=c>> (1/11, Foust) “The ongoing partial government shutdown has upended aspects of a major astronomy conference this week but has not, for now, affected operations of NASA astrophysics missions. The partial government shutdown triggered Dec. 22 when funding lapsed for a number of agencies, including NASA and the National Science Foundation, has prevented civil servants from those agencies from attending the 233rd Meeting of the American Astronomical Society (AAS) here. The AAS estimated prior to the conference that about 10 to 15 percent of its expected 3,200 registrants would not be able to attend the meeting, the largest annual gathering of astronomers in the United States, because of the shutdown.”

As The Shutdown Persists, Here Are 5 Ways It Will Impact Science

Scientific American <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=069-5e5&t=c>> (1/12, Morello, Reardon, Mega, Tollefson, Witze) “Thousands of U.S scientists are heading into their fourth week of enforced leave, the result of a prolonged government shutdown that began on 22 December. The Environmental Protection Agency, NASA and the National Science Foundation (NSF) are among the science agencies that have stopped processing grant applications, cut off access to key data sets and temporarily shuttered federal labs and offices. ... But all hope is not lost. Some government science agencies, including the NSF and NASA, are searching for loopholes that would allow them to continue doling out cash to keep big projects and research centres running.”

Here’s How The Record-Breaking Government Shutdown Is Disrupting Science

Science News <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=06a-0e8&t=c>> (1/12, Hamers) “As the partial federal government shutdown enters its fourth week — on January 12 becoming the longest in U.S. history — scientists are increasingly feeling the impact. Thousands of federal workers who handle food safety and public health are furloughed. Countless projects researching everything from climate change to pest control to hurricane prediction are on hold. Among government agencies hit by the partial shutdown are the U.S. Geological Survey, the Department of Agriculture, the National Oceanic and Atmospheric Administration, the Environmental Protection Agency and NASA, where nearly all employees are on leave.”

#### Science Gets Shut Down Right Along With The Federal Government

Government Executive <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=06b-936&t=c>> (1/11, Wilson) “When the U.S. government shuts down, much of the science that it supports is not spared. And there is no magic light switch that can be flipped to reverse the impact. For instance, large-scale instruments like NASA’s Stratospheric Observatory for Infrared Astronomy – the ‘flying telescope’ – have to stop operations. Eventually bringing such instrumentation back up to speed requires over a week. If the shutdown lingers, contingency funds provided to maintain large-scale instruments supported by agencies including NASA, the National Oceanic and Atmospheric Administration and the National Science Foundation will run out and operations will cease, adding to the list of closed facilities.”

#### How A Government Shutdown Screws Up Scientific Research

Seeker Network <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=06c-b80&t=c>> (1/11, Seeker) “The U.S. is in the middle of a government shutdown – and if it doesn’t end soon it will be the longest in history. But to be clear this is a ‘partial’ shutdown which means that 75% of the government was approved for funding in the new year and the rest got caught up in the demands from President Donald Trump to build a wall on the southern border for over 5 billion dollars. ... Only those deemed ‘essential’ are left to be part of the skeleton workforce that operate the facilities, also without pay. And scientific communities are taking a toll. The agencies affected include NASA, NOAA, the National Science Foundation, the , and the National Parks Service, just to name a few. These are some of the biggest funders of grants and projects across the country.”

#### The Government Shutdown Leaves Scientists Without The Means To Research

Quartz <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=06d-b5a&t=c>> (1/11, Foley) “Today (Jan. 11) is the 21st day of the US government shutdown. This shutdown, which is currently tied for the longest ever, shows no signs of ending as Trump refuses to budge on his demands for \$5.7 billion to build a wall between the US and Mexico. In addition to the 800,000 federal employees who are forgoing their first paychecks today, the shutdown has stalled thousands of scientists who rely on federal funding. Throughout the year, various agencies— including the National Institutes of Health, the Environmental Protection Agency, the National Science Foundation, the Department of Energy, NASA, and the US Geological Survey—review and award financial grants, funded by the federal government, to scientists at universities across the country for them to carry out research.”

#### How The Government Shutdown Could Harm The Future Of American Science

The Verge <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=06e-835&t=c>> (1/13, Becker) “A partial government shutdown that has dragged on for weeks has young scientists wondering if working for the federal government is a good idea. ... Elena Thomas, a graduate student studying analytical chemistry at the University of Washington, says she’s always been interested in going into public service — maybe at the FDA, or even NASA. ‘However, it’s hard to stay motivated in going into that when I see how semi-regularly scientists who work government jobs have to go without pay for these extended periods,’ she tells The Verge in a direct message on Twitter.”

## The 3-Week Long Federal Shutdown Is Starting To Make Wall Street Anxious

CNBC <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=06f-6d2&t=c>> (1/11) "Thursday was day 20 of the partial government shutdown, close to the record of 21 days under the Clinton administration in 1995. We are now seeing a rash of analyst notes warning that this will soon start to affect different businesses. ... Defense contractors are also being affected. Moody's warned today: that '[D]efense services contractors that derive a significant portion of their work from agencies that have not been funded, such as NASA and the State Department, are likely to face disruption. These contractors will accrue unbilled receivables if they keep working or will lose revenue if they halt projects.'"

## Government Shutdown Has Made U.S. Cyber Infrastructure More Vulnerable

Newsweek <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=070-a25&t=c>> (1/12, Phifer) "As hundreds of thousands of government workers go without paychecks, another potential crisis looms as President Trump's partial government shutdown continues. Dozens of government websites have seen their security certificates expire since the government shuttered on December 21, with no one at work to renew them, Netcraft reports. Netcraft estimates that over 80 government websites, including the Department of Justice, the U.S. Court of Appeals and NASA, have been impacted by the shutdown."

## Trump's Shutdown Deadlock Succeeds In Building A Wall: Around Government Websites

Forbes <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=071-f60&t=c>> (1/12, Winder) "The partial U.S. government shutdown has now hit day 22, making it the longest closure in American history. One of the side effects of President Trump's funding fight for his border wall has been to effectively build one around many government websites. Try to visit the U.S. Department of Justice, for example, and your web browser will likely block the connection and display a message telling you it is not safe to visit instead. Ditto for NASA's rocket propulsion testing site, with the Microsoft Edge browser warning that the site is not secure and this might mean 'someone's trying to trick you or steal any information that you send to the server. You should close this site immediately.'"

## Shutdown: Government Sites With Lapsed Security Certificates Pose Risk

CNET News <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=072-ba4&t=c>> (1/12, Hautala) "The government shutdown, now in its 22nd day, appears to be having an affect on the security of federal websites. Netcraft, a UK-based web security company, found dozens of US government websites operating with expired security certificates, a situation that could put visitors at risk. The affected websites range from that of the Department of Justice to NASA's site, Netcraft said. Some of the sites are payment portals, potentially jeopardizing the personal information of visitors, the company said, though CNET couldn't independently verify this."

## Government Shutdown Has Left Several US Agency Websites Inaccessible

Engadget <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=073-c20&t=c>> (1/11) "NASA, the Department of Justice and the Court of Appeals are among those whose sites have been affected, and the expired certificates have impacted services including payment portals, according to Netcraft. Depending on your browser, you might be completely blocked from accessing affected sites, or see an error page warning that you're about to visit a potentially insecure site. Even if you can view the sites, they may not be processing requests or include the most up-to-date information."

## US Government Shutdown Leaves Websites Down

TechRadar <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=074-d1c&t=c>> (1/11, Spadafora) “A number of government websites are now inaccessible after 80 TLS certificates used by the US government have expired and with no staff on hand to renew them as a result of the government shutdown. According to Netcraft, NASA, the US Department of Justice and the Court of Appeals are just some of the US government agencies whose websites have been affected by the shutdown.”

#### Over 80 US Government Websites Have Become Insecure Or Completely Inaccessible Because There Are No Workers There To Update Security Credentials

Business Insider <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=075-1fe&t=c>> (1/11, Bastone) “The US government shutdown has taken a toll on public spaces — with garbage and human feces overflowing at National Parks — but now the deterioration is being felt online. More than 80 US government websites have now become either insecure or inaccessible due to the sites not updating a security credential known as a TLS certificate, according to a report by Netcraft. Sites impacted include the likes of NASA, the US Department of Justice, and the US Court of Appeals. Most of the affected sites (like this NASA site) will allow users to proceed past the security warning page, but according to Netcraft, that can leave users vulnerable to attacks.”

#### Dot-Gov Site Security Erodes During Shutdown – FCW

Federal Computer Week <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=076-714&t=c>> (1/11) “Dozens of .gov sites are vulnerable because of expired security certificates caused by the partial government shutdown, according to a British internet services company. Webpages at agencies such as NASA, the U.S. Department of Justice, and the Court of Appeals have expired TLS certificates, according to British-based Netcraft in a Jan. 10 blog post.”

#### President Trump’s Government Shutdown Is Breaking Federal Websites

Gizmodo <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=077-dba&t=c>> (1/12, McKay) “Dozens of federal government websites are not working correctly due to the ongoing government shutdown, BuzzFeed News reported on Friday, including ones for the Seventh Circuit of the U.S. Court of Appeals and some NASA and Department of Justice webpages. According to BuzzFeed, these sites and others appear to be malfunctioning because they lacked valid Transport Layer Security certificates—making them inaccessible from some browsers, such as Google’s popular Chrome browsers, that began warning users of insecure connections (at least without manually accepting an invalid certification).”

#### NASA Internal App Leaked Employee Emails, Project Names

ZDNet <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=078-02d&t=c>> (1/11, Cimpanu) “A NASA web app leaked details such as employee usernames, names, email addresses, and project names, ZDNet has learned today from bug hunter Avinash Jain. The exposure originated from one of NASA’s Jira installations, a web app that most companies use for tracking projects or internal bugs and issues. In a report detailing his finding published today and shared with ZDNet, Jain said the reason for the leak was Jira’s visibility controls, which a NASA system admin appears to have mixed up.”

#### Another Server Security Lapse At NASA Exposed Staff And Project Data

TechCrunch <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=079-07d&t=c>> (1/11, Whittaker) “Two months ago, NASA quietly fixed a buggy internal server that was leaking sensitive information about the agency’s staff and their work. The leaking server was — ironically — a bug-reporting server, running the popular Jira bug triaging and tracking software. In NASA’s case, the software wasn’t properly configured, allowing anyone to access the server without a password, Avinash Jain, an India-based security researcher who found

the exposed server, told TechCrunch.”

I'm A Federal Employee. Stop holding Me Hostage! [Opinion]

Houston Chronicle <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=07a-eba&t=c>> (1/11) “Like millions of Americans, I recently took some time off to enjoy the holidays with friends and family. ... Instead, I have spent the last seven years of my life working on NASA’s Commercial Crew Program trying to return our astronauts to the International Space Station on an American-made spacecraft. This is not just an interesting job. It serves the interests of the United States by saving the taxpayer dollars we currently have to pay the Russians for this service, and it helps guarantee access to the unique national laboratory in low-Earth orbit while spurring development in a fledgling industry.”

End the shutdown! Hurting federal workers is nothing to be proud of, Mr. President. [Editorial]

Houston Chronicle <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=07b-6ba&t=c>> (1/12) “One of the hardest jobs on the planet has got to be a prison guard. It’s thankless. It’s stressful. It’s dangerous. And the people you’re locked up with all day aren’t exactly glad to see you. ... The shutdown is affecting employees ranging from air-traffic controllers to border agents to NASA scientists.”

Space Council Advisory Group To Study Role Of Human Space Exploration Supporting Science

SPACE <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=07c-85c&t=c>> (1/12, Foust) “The advisory group for the National Space Council is looking at ways that NASA’s human exploration plans can also support space science, while acknowledging the lack of representation of the scientific community in the group. Two members of the Users’ Advisory Group (UAG) of the National Space Council met with attendees of the 233rd Meeting of the American Astronomical Society here Jan. 9 in the latest of a series of listening sessions held by the group with various space constituencies.”

Q&A On The Future Of Science In DC

Houston Chronicle <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=07d-912&t=c>> (1/13) “Eddie Bernice Johnson is probably not a name many Houstonians are familiar with, though she has been one of Dallas’ representatives in Congress since 1993. But for folks deeply invested in the future of space, in climate change, the success of the Environmental Protection Agency or next year’s NASA budget, there are few names more valuable to know.”

No, A NASA Scientist Did Not Reveal A ‘Secret Sign’ Of The Apocalypse

ScienceAlert (AUS) <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=07e-c68&t=c>> (1/14, Bowler) “Another day, another article has misrepresented the words of a scientist. This time that article comes from the Russian state-owned website Sputnik News; according to them, a NASA scientist has revealed a ‘secret sign that would indicate impending apocalypse.’ So just to set the record straight, we’re here to tell you that Michelle Thaller, an astronomer and assistant director of science communication at NASA’s Goddard Center, has done nothing of the sort.”

How 10 Years Of Rejection By NASA Taught Peggy Whitson To Be A Better Astronaut

NBC News <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=07f-fbf&t=c>> (1/13) “Retired NASA Chief Astronaut Peggy Whitson may have spent more time in space than any other American, but she wouldn’t mind another jaunt past Earth’s atmosphere. She shares her story with Kate Snow over a glass of the drink she craved most on her last return to Earth.”

## How To Maximize Efficiency In The Workplace By Minimizing Human Error

Forbes <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=080-c55&t=c>> (1/11, Grover) "Imagine \$125,000,000 – gone. In 1999, NASA lost just that, when their Mars Climate Orbiter was lost in space. How could something like this happen? It's easier than you might think. It all stems back to a small team of engineers and two separate software measuring data in different units: pounds and newtons. This measurement oversight resulted in muddled data that threw off the thrusters on the Orbiter, hurtling the multimillion-dollar piece of metal into space. It seems like a simple and honest mistake, yet it put NASA out a substantial amount of money."

## Why Did NASA Cancel The Apollo Program?

Seeker Network <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=081-af7&t=c>> (1/12) "In the 1960's, NASA was developing ambitious offshoots for the Apollo Program – primarily establishment of a Moon base intended to extend humanity's time on the surface. The Lunar Shelter-Laboratory or SHELAB was one of the concepts under consideration. SHELAB consisted of a cabin with an airlock chamber and a lunar excursion truck equipped with a flying belt for the astronauts. Powered by fuel cells and batteries, the shelter would support two astronauts for 14 days. It was believed that the lunar bases could be the start of a large permanent colony on the Moon."

## NASA Publishes Proposal For Air Traffic Management Blockchain Based On HyperLedger

CoinTelegraph <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=082-ed0&t=c>> (1/11, Zmudzinski) "The United States National Aeronautics and Space Administration (NASA) has proposed an air traffic management blockchain, according to a paper published on the agency's official website on Jan. 10. The proposed system would employ an open-source permissioned blockchain to enable secure, private and anonymous communication with air traffic services."

## Bitcoin Is A 'Fad,' But Even NASA Is Investing In Blockchain

Yahoo! News <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=083-623&t=c>> (1/11, Kramer) "Bitcoin birthed the concept of blockchain technology, and now even organizations as technologically advanced as NASA are considering its benefits. Yet cryptocurrency is often described as a fad, a bubble, and even worthless. Ronald J. Reisman, an aero-computer engineer at the NASA Ames Research Center, has put forward blockchain to solve issues of privacy and the prevention of spoofing, denial of service, and other attacks."

## Society For New Music Celebrates NASA And Apollo 8's Golden Anniversary

Syracuse (NY) Post-Standard <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=084-27d&t=c>> (1/11, Loomis) "Melding science, art, carpentry and technology, Paul Leary, who holds a doctorate in composition from Duke University, will present the world premiere of his composition, 'Larger Than Us,' Jan. 20 at the Museum of Science and Technology. ... Leary uses modern software to animate public domain images from NASA to make the galaxies spin, planets rotate and stars sparkle to his original music. He will introduce a new instrument he has built for the occasion, a nine-foot pendulum that moves to computer generated music."

## NASA Photo Shows The Wreck Of A 'Flying Saucer,' But The Real Story Is Even Better

ScienceAlert (AUS) <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=085-732&t=c>> (1/12, Dean) "Any species reaching for the stars is bound to have its fingertips singed. Probably more than once. One of NASA's posts on the Astronomy Picture of the Day website is an iconic reminder of the mishaps in our spacefaring history. 'A flying saucer from outer space crash-landed in the Utah desert after being

tracked by radar and chased by helicopters,' states the photo description, posted in November 2018, although NASA is not hinting at an alien visit here."

#### Tennessee Scientists Weighed Response To Anti-Vax Politician

Washington Post <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=086-748&t=c>> (1/11, Kruesi) "What should a state health department do when its newly elected congressman gets a rush of social media attention for challenging the science behind vaccines? ... The Associated Press made a public records request to see how the health agency reacted, and received nearly 200 documents. Among them are emails that show top medical officers ultimately turned to a higher power — NASA — for guidance."

#### Paul George, Nike Officially Introduce

Hot New Hip Hop <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=087-f7f&t=c>> (1/11) "Oklahoma City Thunder All-Star forward Paul George took to the court last night in San Antonio in a special edition 'NASA' colorway of his third signature sneaker – the Nike PG3. Today, Nike has provided official images and the three core principles of the PG3. The NASA PG3, inspired by the NASA research center in George's hometown of Palmdale, California, consist of a 'total orange' mesh upper, accompanied by red and blue accents as well as metallic silver detailing about the heel and midsole. The kicks also comes equipped with NASA-branded insoles and an American flag patch on the tongue of the right sneaker."

#### Space Agency Reveals 'We Can't Hide Them' In Bombshell Video

Daily Express (UK) <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=088-847&t=c>> (1/12, Hoare) "Conspiracy theorists have long believed NASA is involved in a cover-up surrounding alien activity due to the number of UFO sightings worldwide that go unexplained. In 2017, leaked records showed the Pentagon ran a secret \$22million (£17million) extra-terrestrial 'black project' after reports of an aircraft moving at 'very high velocities that hovered with no apparent means of lift.' However, NASA's Assistant Director Michelle Thaller insists the space agency knows nothing more about extra-terrestrial life than what it has shared with the public."

#### Other

#### China Says It Exchanged Data With NASA On Far Side Of Moon

New York Times <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=089-b20&t=c>> (1/14, Press) "China's space agency says it worked with NASA to collect data from the far side of the moon. The state-run China Daily said this was the first such collaboration since an American law banned joint space projects with China that do not have prior congressional approval. The deputy director of the national space agency, Wu Yanhua, said Monday that NASA shared information about its lunar orbiter satellite in hopes of monitoring the landing of the Chang'e 4 spacecraft, which made China the first country to land on the far side of the moon earlier this month. Wu said China in turn shared the time and coordinates of Chang'e 4's scheduled landing. He said NASA's satellite did not catch the precise moment of landing, but took photographs of the area afterward."

#### China Offers NASA Use Of Moon Mission Probe

Brisbane (AUS) Times <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=08a-a7a&t=c>> (1/14, Needham) "Buoyed by the success of its Jade Rabbit moon mission, China is planning to next establish a base on the south pole of the moon and build houses with 3D printing technology. The deputy chief commander of China's Lunar Exploration Program, Wu Yanhua, said China was already in discussions with the United States and European space programs about what a moon research station could achieve. Chinese space scientists spoke publicly about the history-making Chang'e-4 mission to the far side of the moon on Monday. Wu played down

the cost, comparing the price of sending the Chang'e-4 lander and its Jade Rabbit rover to the far side of the moon to subway construction.”

### China Releases Incredible Footage Of First-Ever Landing On Far Side Of The Moon

Newsweek <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=08b-ccb&t=c>> (1/11, Georgiou) “The China National Space Administration (CNSA) has released fascinating footage captured by the Chang'e-4 spacecraft of its historic landing on the far side of the moon, on January 3. The video, which was broadcast by state-owned CCTV, shows the moments leading up to and including touchdown—the first-ever ‘soft landing’ (one in which there was no damage to the vehicle) on the far side. The lunar probe also took several pictures, including a 360-degree panorama of its location in the 110-mile-wide Von Kármán crater. According to CNSA, the images confirm the successful deployment of the accompanying rover, Jade Rabbit 2.”

### China Releases More Images From Far Side Of The Moon

Spaceflight Now <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=08c-83e&t=c>> (1/13, Clark) “Chinese officials on Friday released more imagery from the Chang'e 4 mission, a robotic lander and rover exploring the far side of the moon after a successful landing Jan. 3. The imagery released Friday included a new view of China's Yutu 2 rover captured by a camera aboard the Chang'e 4 lander, a panoramic vista of the austere lunar landscape, and a sped-up video showing the spacecraft's final descent to the moon from the view of the probe's descent camera.”

### China Releases Detailed 360-Degree Photo From The First Mission To Land On The Far Side Of The Moon

Business Insider <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=08d-414&t=c>> (1/11, Mosher) “China has released a detailed panoramic image taken by the first spacecraft to land on the half of the moon we can't see from Earth. The mission, called Chang'e 4, touched down on the moon's far side ('dark side' is a misnomer) on January 3. The car-size lander and a desk-size rover it deployed, called Yutu 2, are designed to probe the region over the next six months. ... No country or space agency, including Russia and NASA, had ever made a soft landing on the far side of the moon until China did with Chang'e 4 on January 3.”

### See The Far Side Of The Moon In This Amazing Panorama From China's Chang'e 4 Lander

SPACE <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=08e-cff&t=c>> (1/11, Bartels) “China made history earlier this month with the first successful soft landing on the far side of the moon — and now, the mission has sent back an incredible panorama view of its work site. The mission consists of two robots: the Chang'e 4 lander and the Yutu 2 rover. Since their arrival on Jan. 2, both have been exploring the lunar surface inside Von Kármán Crater, a 115-mile-wide (186 kilometers) feature. ... In addition to the panorama view, each robot has sent back an image of its compatriot on the surface. We may also get a bird's-eye view of the mission. That would come courtesy of NASA's Lunar Reconnaissance Orbiter, which is due to fly over the site on Jan. 31.”

### China's Moon Rover Prepares For A Rough Ride On The Dark Side

Phys (UK) <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=08f-5bd&t=c>> (1/11, Weerasekara) “China on Friday hailed its historic mission to the far side of the moon as a ‘complete success’ so far but said new challenges await its rover as it explores rugged terrain. The Chang'e-4 probe—named after a moon goddess—made the world's first soft landing on the moon's ‘dark side’ on January 3, a major step in China's ambitions to become a space superpower. A rover dubbed Yutu-2—or Jade Rabbit, the name of the moon goddess's pet—successfully separated from the lander and drove onto the moon's surface about eight hours after landing.”



## Footage Of Chinese Probe Chang'e-4's Landing On Far Side Of The Moon Released

Tech Times <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=090-e7c&t=c>> (1/13, Manuel) "China National Space Administration releases a footage of the successful landing of probe Chang'e-4 on the far side of the moon on Jan. 3. The touchdown made the Asian country the first ever to have done so. The 2:47-minute clip showed the slow approach of the lander to the ground, initially hovering over the surface and then suddenly tilting as the Chang'e-4 prepared for the touchdown. Fortunately, the mission made it safe to the surface of the Von Karman Crater, a 115-mile-wide area. ... A lot of experts were impressed with China's successful and historic touchdown, including Jim Bridenstine, a NASA administrator, who took to Twitter to congratulate the Asian space agency."

## How Chang'e 4 Moon Landing Is Major Challenge For NASA

Daily Express (UK) <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=091-126&t=c>> (1/12, Fish) "China accomplished an audacious mission to land on the far side of the moon in a historic moment in space exploration this week. Chang'e 4's touch down was lauded around the world as a major technical feat and represented the ascendancy of the Chinese state. And the impressive science mission is only the beginning of an ambition space program which plans to challenge the hegemony of a stagnating NASA, an expert has exclusively revealed to Express.co.uk. ... The astounding success of China's nascent space program appears in stark contrast with the seemingly stagnating NASA."

## Control Of Russian Radio Telescope Satellite Lost

New York Times <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=092-b08&t=c>> (1/12, Press) "Russia's space agency says its specialists are attempting to fix problems that have blocked control of an orbiting radio telescope. The Spektr-R satellite is continuing to transmit signals, but scientists have been unable to control the satellite since Friday. The satellite was launched in 2011 and has exceeded its initially expected useful life of about three years. It is used to study radio sources within and outside Earth's galaxy."

## Russian Attempt To Control Orbiting Radio Telescope Fails

Associated Press <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=093-4de&t=c>> (1/13) "Russia's space agency says another attempt by its specialists to establish contact with an orbiting radio telescope has failed. The Spektr-R satellite is continuing to transmit signals, but scientists have been unable to control the satellite since Friday. Alexander Bloshenko, an adviser to the Roscosmos space agency, was quoted by the state news agency Tass as saying that Sunday's attempt to restore contact had failed. Another attempt is expected on Monday."

## Russian Space Telescope Spektr-R Stops Responding

UPI <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=094-f8a&t=c>> (1/12, Haynes) "Russian space officials said Saturday they're working to re-establish contact with the country's Spektr-R space radio telescope, which stopped responding to commands. Astro Space Center chief Nikolai Kardashev said that though the telescope stopped responding, it's still transmitting scientific information. The link went down Friday morning. 'Specialists of the Main Operational Group of Spacecraft Control are carrying out work to remove the existing problems,' Russia's state space corporation, Roscosmos, said."

## Russia's Spektr-R Space Telescope Stops Responding To Earth's Command

Tech Times <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=095-c45&t=c>> (1/13, Adamson) "The scientific satellite Spektr-R (RadioAstron), Russia's only space radio telescope, has

shown signs of technical problems as the mission's scientific work continues way beyond the intended duration. Roscosmos scientific adviser Alexander Bloshenko said Spektr-R has stopped responding to commands from Earth on Sunday and the next attempt to restore control will be on Monday afternoon."

#### 10 New Iridium Satellites Delivered To Orbit

Associated Press <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=096-8ac&t=c>> (1/11) "Ten new satellites for Iridium Communications' global network have been successfully deployed in orbit after launch from California. The satellites were individually released from the upper stage of a Falcon 9 rocket that blasted off from Vandenberg Air Force Base on Friday morning. Iridium now has 75 new satellites in orbit, including nine spares. The McLean, Virginia-based company's \$3 billion Iridium NEXT project replaces its entire original fleet. The Falcon's first stage successfully landed on a so-called droneship in the Pacific Ocean, marking its second launch and recovery."

#### SpaceX's First 2019 Launch Completes Iridium Satellite Network

Bloomberg News <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=097-ae8&t=c>> (1/11, Hull, Bachman) "Elon Musk's Space Exploration Technologies Corp. kicked off what promises to be a busy 2019 by blasting a rocket carrying satellites for longtime customer Iridium Communications Inc. into orbit. ... SpaceX set a company record last year with 21 launches for customers including commercial satellite operators and the U.S. military. But much of the focus this year will be the race to see whether SpaceX or Boeing Co. is first to put humans into space for NASA and safely bring them back."

#### SpaceX Delivers Iridium NEXT Satellites To Space

UPI <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=098-6aa&t=c>> (1/11, Hays) "SpaceX and its Falcon 9 rocket delivered the final batch of Iridium NEXT satellites into space on Friday morning. The Iridium-8 mission launched at 10:31 a.m. ET on Friday from Vandenberg Air Force Base in California. Friday's liftoff marked the first 2019 rocket launch in the United States. 'Main engine cutoff and stage separation confirmed,' SpaceX confirmed on Twitter just four minutes after blastoff."

#### SpaceX Rocket Blasts Final Round Of Iridium Satellites Into Orbit

CNET News <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=099-5e6&t=c>> (1/11, Kooser) "There are a whole lot of new machines in orbit now that SpaceX has completed a series of eight launches to upgrade communications company Iridium's constellation of satellites. The Iridium-8 mission blasted off on a Falcon 9 rocket from Vandenberg Air Force Base in California Friday at 7:30 a.m. PT. The rocket carried the last batch of 10 NEXT satellites, which brought the total in orbit up to 75 after a successful deployment. ... While SpaceX's satellite launches went off well, the company is still waiting to send its Crew Dragon capsule to the International Space Station as part of NASA's Commercial Crew program. That launch was recently delayed again, pushing the uncrewed Demo-1 mission into February at the earliest."

#### SpaceX Launches 10 Iridium Satellites Into Orbit, Then Sticks Rocket Landing

SPACE <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=09a-e1d&t=c>> (1/11, Bartels) "A used SpaceX Falcon 9 rocket lofted 10 final Iridium Next satellites into orbit today (Jan. 11), completing a two-year, eight-launch contract between the two companies. ... Today's launch was the first successful rocket liftoff from the U.S. this year. SpaceX's next planned launch will be the uncrewed test flight of its Crew Dragon spacecraft, which will eventually carry NASA astronauts to the International Space Station. That launch was recently pushed to no earlier than February."

## SpaceX Aces Iridium NEXT Launch, Successfully Lands Falcon 9 Rocket

Inquisitr <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=09b-276&t=c>> (1/11, Lozovschi) "SpaceX's Iridium-8 mission couldn't have gone any better. The last batch of 10 Iridium NEXT satellites have made their way into low-Earth orbit earlier today, after lifting off from Vandenberg Air Force Base in California atop a Falcon 9 rocket. The recycled space vehicle — which previously flew Telstar's 18 VANTAGE satellite into space — took off from Space Launch Complex 4E at 10:31 a.m. EST, soaring to the skies during an instantaneous launch window. This type of launch window is required for the Iridium NEXT satellites to reach their orbit, the Inquisitr reported yesterday."

## SpaceX Begins 2019 With Eighth And Final For Upgraded Iridium Network

Spaceflight Now <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=09c-658&t=c>> (1/11, Clark) "Ten Iridium communications satellites rode a Falcon 9 rocket into orbit Friday from California in the eighth and final launch for Iridium's upgraded network over the last two years, and the first of around 18 predicted SpaceX missions planned in 2019. The 229-foot-tall (70-meter) Falcon 9 rocket lit its nine Merlin 1D main engines and climbed away from Space Launch Complex 4-East at Vandenberg Air Force Base, California, at 7:31:33 a.m. PST (10:31:33 a.m. EST; 1531:33 GMT) Friday. ... SpaceX launches on tap this year include two test flights of the company's Crew Dragon spacecraft, one without astronauts as soon as February, followed by a demonstration mission to the International Space Station with two NASA astronauts on-board around the middle of the year."

## SpaceX Launches Final Batch Of Iridium Next Satellites

Aviation Week <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=09d-43f&t=c>> (1/11, Carey) "SpaceX successfully launched the Iridium-8 mission via a Falcon 9 rocket on Jan. 11, deploying into orbit the final installment of the \$3 billion Iridium Next satellite constellation and ushering in a new era of global tracking and communications capabilities for commercial aviation. The two-stage, liquid propellant-fueled rocket lifted off at 7:31 a.m. local time from Space Launch Complex 4E at Vandenberg AFB, California. Its first stage separated about 2 ½ min. into the flight and performed a controlled re-entry into the atmosphere, landing successfully on a drone ship in the Pacific Ocean about 7 min. after launch."

## SpaceX Launches Final 10 Satellites For Iridium

Space Daily <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=09e-748&t=c>> (1/11) "SpaceX on Friday blasted off a payload of global communications satellites for Iridium, marking the first launch of 2019 for the California-based company headed by Elon Musk. 'Three, two, one, ignition, liftoff of Falcon 9,' Iridium CEO Matt Desch said on a live webcast as the white Falcon 9 rocket took flight from Vandenberg Air Force Base in California at 7:31 am (1531 GMT). The mission, carrying 10 Iridium NEXT satellites to orbit, completes Iridium's project to replace the world's largest commercial communication satellite network with 75 new satellites in orbit."

## SpaceX Completes Iridium Next Constellation

Space News <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=09f-8f0&t=c>> (1/11, Henry) "SpaceX launched the final 10 Iridium Next satellites into orbit Jan. 11, completing its first mission of the year and the last in a multi-launch contract for its largest non-government customer, Iridium Communications. ... Iridium then returned to SpaceX, splitting a Falcon 9 mission with NASA and the German Research Centre for Geosciences' twin GRACE-FO science satellites. The recreated eighth launch — chronologically the sixth in Iridium's launch order — carried five Iridium Next satellites, increasing the in-orbit constellation from 72 to 75."

## SpaceX, Elon Musk's Rocket Company, Cuts 10 Percent Of Its Work Force

New York Times <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=0a0-97c&t=c>> (1/12, Mervosh) "SpaceX, the private rocket company founded by the billionaire Elon Musk, is laying off about 10 percent of its work force in what it framed as a necessary cutback to position the company for an unchartered future. The company will have about 6,000 employees remaining after the layoffs, which will take place companywide. ... The company has ambitious plans for this year, including the deployment of its first set of Starlink satellites, which promise space-based internet. The test launch of Crew Dragon, a capsule built to carry NASA astronauts to the International Space Station, was scheduled for this month but has been pushed back, NASA said this week. If successful, the company could schedule a test launch with a crew aboard for later this year."

## SpaceX To Lay Off 10 Percent Of Workforce

Reuters <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=0a1-128&t=c>> (1/12, Singh) "Elon Musk's rocket company SpaceX will reduce its workforce by about 10 percent of the company's more than 6,000 employees, it said on Friday. The company said it will 'part ways' with some of its manpower, citing 'extraordinarily difficult challenges ahead.' 'To continue delivering for our customers and to succeed in developing interplanetary spacecraft and a global space-based Internet, SpaceX must become a leaner company. Either of these developments, even when attempted separately, have bankrupted other organizations,' a spokesman said in an email."

## SpaceX To Lay Off 10% Of Its Workforce

Los Angeles Times <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=0a2-ce0&t=c>> (1/11, Masunaga) "SpaceX, citing a need to get 'leaner,' said Friday it will lay off more than 10% of its roughly 6,000 employees. ... SpaceX makes most of its money from commercial and national security satellite launches, as well as two NASA contracts, one a multibillion-dollar deal to deliver cargo to the International Space Station and the other up to \$2.6 billion to develop a capsule that will deliver astronauts to the space station. The first launch of that capsule, without a crew, is planned for February."

## SpaceX Plans To Lay Off About 10 Percent Of Workforce

CBS News <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=0a3-088&t=c>> (1/13, Harwood) "SpaceX, the upstart rocket company that has shaken up the launch industry with low-cost reusable boosters and ambitious long-range plans to carry people to Mars and beyond, plans to reduce its workforce by about 10 percent, company sources said late Friday. The revelation came just hours after the California rocket builder successfully launched 10 Iridium communications satellites into orbit atop a Falcon 9 rocket from Vandenberg Air Force Base, California, in the first of 18 or so SpaceX flights planned this year. ... A company official said SpaceX remains 'financially strong' and looking forward to a busy year in space, including the first flights of Crew Dragon ferry ships NASA will use to carry astronauts to and from the International Space Station."

## Elon Musk's SpaceX To Lay Off 10 Percent Of Its Workforce

Washington Post <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=0a4-c88&t=c>> (1/12, Davenport) "SpaceX announced Friday evening that it would lay off 10 percent of its workforce, a significant setback for the hard-charging company founded by Elon Musk. The move comes as the California-based company, which employs more than 6,000 people, is pulled in many directions. It is on the verge of launching NASA's astronauts, building a new rocket known as Starship that it hopes will be able to carry people to deep space and launching a constellation of satellites that would beam the Internet down to remote areas."

## SpaceX To Lay Off 10% Of Its Workers

CNN <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=0a5-212&t=c>> (1/11, Wattles, Business) "SpaceX is laying off 10% of its 6,000-person workforce as it tackles two hugely expensive projects. ... SpaceX has a booming business conducting uncrewed resupply trips to the International Space Station through contracts with NASA. The company also delivers satellites to orbit through contracts with the US military and commercial firms. SpaceX, along with competitor Boeing, are supposed to start flying astronauts to the ISS for NASA sometime this year."

#### SpaceX Lays Off 10 Percent Of Its Workforce To 'Become A Leaner Company'

Florida Today <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=0a6-454&t=c>> (1/12, Kelly) "SpaceX will cut 10 percent of its workforce in a 'strategic realignment' aimed at making room for its ambitious projects and long-term vision, the company announced Friday. ... The company is in the midst of three major initiatives, the first of which is a multibillion dollar NASA contract that requires transport of astronauts to the International Space Station on its Crew Dragon spacecraft. Teams are targeting February for an uncrewed test flight of the capsule and, if successful, a subsequent crewed mission in June."

#### SpaceX Laying Off 10% Of Employees Due To 'Extraordinarily Difficult Challenges Ahead'

Orlando (FL) Sentinel <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=0a7-2f3&t=c>> (1/11, Herrera) "Private space leader SpaceX plans to lay off about 10 percent of its more than 6,000 employees across the nation, the company said Friday. ... Also on the horizon for 2019 are test flights for SpaceX's fully reusable, Mars-bound Starship and its Crew Dragon capsule, part of a \$2.6 billion contract funded by NASA to take astronauts to space from U.S. soil as early as this summer."

#### Hawthorne Headquarters Of SpaceX To Be Hit Hard By Layoffs

Los Angeles Times <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=0a8-818&t=c>> (1/13, Bloomberg) "Most of the layoffs at SpaceX that were announced last week will be taking place at its Hawthorne headquarters in the South Bay. ... SpaceX flew a record 21 missions in 2018 for customers that include commercial satellite operators, NASA and the U.S. military. But the market size for launches is not infinite, and SpaceX President and Chief Operating Officer Gwynne Shotwell warned there might be a slowdown in orders from the geo-telecommunications industry."

#### SpaceX To Lay Off 10 Percent Of Its Workforce

CNET News <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=0a9-c23&t=c>> (1/11, Musil) "SpaceX plans to lay off 10 percent of its 6,000-employee workforce, citing a need to be a 'leaner company' to meet its ambitious goals. ... Musk, who also serves as CEO of Tesla and the Boring Company, founded SpaceX in 2002 'to revolutionize space technology, with the ultimate goal of enabling people to live on other planets.' In 2014, the company won a \$2.6 billion contract from NASA to ferry astronauts to the International Space Station."

#### SpaceX Is Laying Off 10% Of Its Workers

Quartz <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=0aa-3d8&t=c>> (1/12, Fernholz) "Elon Musk's rocket company is laying off 10% of its workers. With about 6,000 employees in California, Florida, Texas and Washington, the cuts could amount to some 600 people without jobs. ... SpaceX will still see cash flow from plans to launch 18 Falcon 9 rockets and two Falcon Heavy rockets, including a mission for NASA to fly astronauts to the International Space Station."

## SpaceX Is Laying Off 10 Percent Of Its Workforce

The Verge <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=0ab-1fb&t=c>> (1/11, Statt) “SpaceX will lay off 10 percent of its workforce, immediately following its first successful rocket launch of the year for satellite operator Iridium. The news, first reported by the Los Angeles Times and confirmed by SpaceX, suggests the company is under some financial pressure as it attempts to get two ambitious projects off the ground. ... SpaceX makes roughly \$2.5 billion a year in revenue, according to The Wall Street Journal, from contracts with organizations like NASA and companies like Iridium.”

## SpaceX To Lay Off 10 Percent Of Its Workforce

The Hill <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=0ac-782&t=c>> (1/11, Daugherty) “Space exploration company SpaceX announced Friday that it will lay off more than 10 percent of its staff as it pursues ambitious projects. The staff cuts were announced in an email to all employees sent by SpaceX president Gwynne Shotwell, according to The Los Angeles Times. ... SpaceX has a multi-billion dollar deal with NASA to deliver cargo to the International Space Station and another \$2.6 billion contract to develop a small capsule that will more efficiently send astronauts to the station.”

## Thales And ESA Sign €150 Deal For FLEX Satellite Mission

Aerospace Technology <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=0ad-a47&t=c>> (1/13, Moyee) “Thales Alenia Space has signed a €150m contract with the European Space Agency (ESA) to lead the development of the Fluorescence Explorer (FLEX) satellite mission. As part of the contract, Thales will act as a programme prime contractor and lead a consortium to develop the programme. The consortium will include Thales’ own subsidiaries and partners from the space sector.”

## The First Female To Lead The Nation’s Top Space Museum Has A Message For Girls

NBC News <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=0ae-57c&t=c>> (1/13) “Ellen Stofan still feels a sense of awe when she walks through the National Air and Space Museum in Washington, D.C., even though she’s been its director — the first woman ever to hold the position — since last spring. ... Eileen Pollack, a creative writing professor at the University of Michigan and author of ‘The Only Woman in the Room: Why Science Is Still a Boys’ Club,’ recalled her own experience as a physics student seeing the predominance of men at a NASA facility.”

## R.I. Bill Would Create Official State Astronomer

Providence (RI) Journal <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=0af-c17&t=c>> (1/12, Naylor) “The lawmaker who gave us calamari as the official state appetizer is working on another designation: Rhode Island’s official state astronomer. The unpaid position would help promote interest in stargazing and science through lectures and classroom visits. ... Whether it’s reports of China landing on the dark side of the moon, or of NASA’s New Horizons robotic explorer viewing a snowman-shaped space rock at the edge of the solar system, or talk of human travel to Mars or videos of SpaceX launching a Tesla sports car into space and landing its spent rockets on target and upright, ‘I think there is a renewed interest and curiosity about space,’ McNamara said.”

## India Plans Manned Space Mission By December 2021

Space Daily <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=0b0-37c&t=c>> (1/11) “India will send its first manned mission into space by December 2021, the head of the country’s space agency said on Friday. The three-person mission would make the Asian giant the fourth country after Russia,

the United States and China to put people in space. 'We are planning to have the first unmanned mission by December 2020, the second by July 2021, and the manned mission by December 2021,' Indian Space Research Organisation (ISRO) chairman Kailasavadivoo Sivan said in Bangalore."

#### India's Second Moon Mission In Mid-April

Space Daily <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=0b1-8fc&t=c>> (1/14) "India's second lunar mission Chandrayaan-2 with a lander and rover will be attempted in mid-April, a top space official said on Friday. 'We are targeting mid-April to launch Chandrayaan-2 as there were certain tests which could not be done in time for the earlier scheduled January 3 launch,' Indian Space Research Organisation's (ISRO) Chairman K. Sivan told reporters here."

#### Iran To Launch 2 Satellites Despite US Sanctions Threats

Space Daily <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=0b2-83d&t=c>> (1/11) "Iranian President Hassan Rouhani said on Thursday that his country would launch two satellites using domestic launch vehicles in the near future. 'Today, our rockets are defensive means and a source of our pride. We will send two new satellites into space using domestically made rockets in the coming weeks,' Rouhani said during a commemorative ceremony dedicated to the death of former Iranian President Ali Akbar Rafsanjani."

#### Blue Origin Still Holding Off On New Shepard Ticket Sales

SPACE <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=0b3-736&t=c>> (1/11, Foust) "Blue Origin expects to start flying people on its New Shepard suborbital vehicle early this year, but has yet to start selling tickets or even establish a ticket price for future commercial flights. In a panel discussion at the American Institute of Aeronautics and Astronautics SciTech Forum in San Diego Jan. 8, Ariane Cornell, head of astronaut strategy and sales at Blue Origin, said the company is eager to start flying people on New Shepard but that it places a greater emphasis on safety over schedule."

#### SpaceX To Launch And Land Giant Mars Spaceship

San Francisco Chronicle <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=0b4-e09&t=c>> (1/11, Morris) "SpaceX's long-stated plans to reach the Red Planet could take a big step forward in February with a 'hopper test' of the company's Mars spaceship prototype. During next month's test, the prototype will launch and briefly go up in the air before coming back down to Earth, CEO Elon Musk revealed last week. But in line with typical Musk timelines, he gave himself a buffer, tweeting recently that four weeks 'probably means eight weeks, due to unforeseen issues.' ... Starship development is not the only project SpaceX has planned this year. This summer, the company is set to launch NASA astronauts to the International Space Station in its Crew Dragon capsule, which would mark the first time NASA astronauts have taken off from U.S. soil since the space shuttle program ended in 2011."

#### Elon Musk Shows Off Newly-Assembled Starship

BGR <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=0b5-789&t=c>> (1/11, Wehner) "NASA might still be waiting for its first real test of SpaceX's Crew Dragon spacecraft — which was recently pushed back into February for unspecified reasons — but that's not the only spacecraft SpaceX has been working on. Starship, the forward-looking concept thought to be the future of the company's space exploration ambitions, has appeared in brief teases as it slowly inches its way towards testing."

#### A New Era Of Global Aircraft Surveillance Is On The Horizon As Aireon Completes System Deployment

Space Daily <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=0b6-034&t=c>> (1/14) "Aireon has announced a successful eighth and final launch and deployment of the Iridium NEXT satellite constellation hosting the Aireon space-based Automatic Dependent Surveillance-Broadcast (ADS-B) payloads. At 7:31:33 AM PST (15:31:33 UTC) a SpaceX Falcon 9 rocket lifted off from Vandenberg Air Force Base in California and placed the final 10 Iridium NEXT satellites into low earth orbit (LEO)."

#### Defense Mergers And Acquisitions Poised To Keep Pace In 2019

Washington Post <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=0b7-00f&t=c>> (1/12, Gregg) "Mergers and acquisitions in the defense contracting sector appear poised to keep pace in 2019, with two major deals announced in the past week. A California-based defense contractor, Parsons Corporation, announced Jan. 7 it would buy Virginia-based government contractor OGSystems for an undisclosed sum. ... Companies that work primarily for U.S. defense and intelligence agencies have largely been unaffected by the government shutdown, though some large government contractors such as Science Applications International Corporation (SAIC) have reported that business units serving NASA have suffered."

#### European Space Agency Unveils 'Best Of Mars' Video Featuring Gorgeous Views From Its Mars Express Satellite

Inquisitr <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=0b8-24a&t=c>> (1/12, Lozovschi) "A stunning video released this week by the European Space Agency (ESA) reveals the red planet at its finest. The five-minute video clip showcases all the best features that Mars has to offer, providing a VIP tour of our planetary neighbor. The footage is stitched together using satellite imagery taken by ESA's Mars Express spacecraft from the 15 years that it has spent orbiting the red planet."

#### This Company's Gears Went To The Moon, And They're Still Going Places

Boston Globe <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=0b9-3e8&t=c>> (1/13, Kirsner) "One of the most improbable and impressive companies that Boston has ever known is run out of a single-story brick building in Peabody. ... The company, which began life as a division of United Shoe Machinery before spinning out, also saw some early success in selling to NASA: One of its gear units was used to drive the wheels on the lunar rover that traveled to the moon as part of the Apollo 15 mission in 1971. That year, astronaut Buzz Aldrin dropped by the Harmonic Drive office to thank the employees for their work on the rover."

#### Green New Deal Will Only Happen If We Go Back To The Moon [Opinion]

The Hill <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=0ba-f77&t=c>> (1/11, WhittingtonOpinion Contributor —) "You have to hand it to Rep. Alexandria Ocasio-Cortez (D-N.Y.). For someone who was, just a year ago, a bartender, she has some ambitious plans now that she is a member of Congress. ... Some enterprising reporter should ask Ocasio-Cortez what she thinks about NASA, the space program and the return to the moon. Support for the space program to make the Green New Deal possible should be a no-brainer. NASA Administrator Jim Bridenstine should take note."

#### e-Commerce: To Be Or Not To Be [Column]

Federal News Network <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019011402nasa&r=email-47e5&l=0bb-c96&t=c>> (1/11) "Since the enactment of the Competition in Contracting Act (CICA) in 1984, competition has been a foundational tenant of the federal procurement system. ... Specifically, as currently put forth, this approach will establish dual procurement systems for commercial items, e.g. a pre-existing commercial item contract channel where compliance with government-unique requirements, like the TAA, is mandated (e.g., the Multiple Awards Schedules program, NASA Solutions for Enterprise-Wide Procurement and National Institutes of Health CIO-CS), and another seemingly GSA-approved channel where products from non-TAA countries, like China, which is not a TAA-



designated country, are available for purchase.”

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## NASA Morning Briefing for Thursday, January 24, 2019

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### Editor's Note

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#### Top Stories

##### Blue Origin's New Shepard Launches NASA Experiments, Aces Rocket Landing

SPACE <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019012402nasa&r=email-ccb8&l=003-4d8&t=c>> (1/23, Wall) "Blue Origin's privately built New Shepard spacecraft has aced its biggest mission yet, and this time the spacecraft flew for NASA. The reusable New Shepard launched into space today (Jan. 23) on its 10th-ever test flight, a brief uncrewed jaunt that carried at least eight NASA-sponsored research and technology payloads to suborbital space and back. The mission, which lasted 10 minutes and 15 seconds, reached an altitude of 66 miles (107 kilometers), Blue Origin officials said."

##### NASA Discovers Fresh 'Blast Pattern' On Mars

CNET News <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019012402nasa&r=email-ccb8&l=004->

989&t=c> (1/23, Kooser) "Sometime between July and September of 2018, a rock smacked into Mars and left an impressive mark near the planet's south pole. NASA's Mars Reconnaissance Orbiter (MRO) snapped a view of the resulting impact crater and the explosive signature it left on the icy landscape. 'It's notable because it occurred in the seasonal southern ice cap, and has apparently punched through it, creating a two-toned blast pattern,' NASA planetary scientist Ross Beyer said of the image released on Tuesday."

#### House Spending Bill Fires Warning Shot At James Webb Space Telescope

SPACE <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019012402nasa&r=email-ccb8&l=005-04b&t=c>> (1/23, Foust) "A new appropriations bill the House plans to vote on next week would provide \$21.5 billion for NASA in 2019 but warns that any further problems with the James Webb Space Telescope could lead to its cancellation. ... That bill includes the full \$304.6 million requested for JWST in 2019, but the report accompanying the bill offered harsh language, and a warning, regarding the space telescope given the cost overruns and schedule delays announced last year."

#### Key Data For NASA's Ice-Monitoring Satellite In Trouble Thanks To Shutdown

Gizmodo <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019012402nasa&r=email-ccb8&l=006-1bf&t=c>> (1/23, Stone) "Last month, NASA researchers were gleefully sharing the early returns from their recently launched ice-monitoring satellite, ICESat-2, at the world's largest annual meeting of Earth scientists. This month, many of those same researchers are furloughed as a vital airborne campaign needed to calibrate the satellite faces mounting delays due to the U.S. government shutdown. Science Magazine reported last week that the spring campaign for NASA's Operation IceBridge – a series of airborne flights over the Arctic and Antarctic the space agency has been conducting since 2009 – would likely be delayed thanks to President Trump's fictitious crisis at the U.S. southern border."

#### Life Owes Its Existence To A Planetary Collision 4.4 Billion Years Ago

Daily Mail (UK) <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019012402nasa&r=email-ccb8&l=007-f5f&t=c>> (1/23) "Chemicals building blocks for life on Earth were delivered when another celestial body smashed into the planet. That's the finding of a new study that suggests most of Earth's essential elements for life – including most of the carbon and nitrogen in us – probably came from another planet. ... Professor Dasgupta, principal investigator on a NASA-funded project called CLEVER Planets that is exploring how life-essential elements might come together on distant planets, said better understanding the origin of Earth's life-essential elements has implications beyond our solar system."

#### Flight

No content.

#### Earth

#### Greenland Is Approaching The Threshold Of An Irreversible Melt, And The Consequences For Coastal Cities Could Be Dire

Business Insider <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019012402nasa&r=email-ccb8&l=008-384&t=c>> (1/23) "Greenland's ice sheet is approaching a melting threshold faster than scientists thought; in two decades, it could become a major contributor to sea-level rise. If all of Greenland's ice were to melt, it would raise sea levels 23 feet, submerging some coastal cities. That would put everything south of West Palm Beach, Florida, underwater. ... NASA has created an interactive tool that helps track sea-level rise projections, based on how much the two ice sheets are melting. One thing the tool makes very clear: Coastal cities will be heavily impacted."

## King Tides Offer Look At The Coast's Flooded Future With Sea-level Rise

Orange County (CA) Register <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019012402nasa&r=email-ccb8&l=009-d4f&t=c>> (1/23) "As dramatic as king tides can be when they flood the streets of Seal Beach or the Peninsula in Long Beach, an aerial perspective of waves battering the coast takes the drama to another level. ... After rising 5.5 inches from 1900 to 2000 – an average of 0.055 inches per year – it is now rising nearly 0.13 inches per year, according to NASA. Projections show that the seas will continue to rise faster and faster for decades to come regardless of human activities."

## Humans in Space

### NASA To Replace Crew Member On Boeing Starliner Flight Test

Tech Times <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019012402nasa&r=email-ccb8&l=00a-586&t=c>> (1/23, Samson) "Months before launch, NASA has updated the crew that will go on board the Boeing CST-100 Starliner's manned flight test later this year. Astronaut E. Michael 'Mike' Fincke will be replacing Eric Boe who, according to the U.S. space agency, is unable to fly due to medical reasons. Instead, Boe will replace Fincke as the assistant to the chief for the commercial crew at the Johnson Space Center in Houston."

### Prolonged Spaceflight Could Weaken Astronauts' Immune Systems

Science Daily <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019012402nasa&r=email-ccb8&l=00b-669&t=c>> (1/23) "NASA hopes to send humans to Mars by 2030 on a round-trip mission that could take up to three years – far longer than any human has ever traveled in space. Such long-term spaceflights could adversely affect certain cells in the immune systems of astronauts, according to a new study led by University of Arizona researchers. 'What NASA and other space agencies are concerned about is whether or not the immune system is going to be compromised during very prolonged spaceflight missions,' said Richard Simpson, senior author and associate professor of nutritional sciences at the UA."

## Moon to Mars

### Trump's Hopes Of Reaching Mars In First Term Were Dashed By NASA In 2017, New Book Reveals

Fortune <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019012402nasa&r=email-ccb8&l=00c-53d&t=c>> (1/23) "President Donald Trump had hoped to go to Mars during his presidency, one of his former communications officials has revealed. In his new book Team of Vipers, former Trump communications official Cliff Sims said that he was with the president on April 24, 2017 when Trump called astronaut Peggy Whitson for setting a new record for spending the most amount of time in space. Everything went well until Trump started asking Whitson about Mars and how soon humans could get there, according to the book, which was earlier reported on by Intelligencer."

## Solar System and Beyond

### Life Owes Its Existence To A Planetary Collision 4.4 Billion Years Ago

Daily Mail (UK) <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019012402nasa&r=email-ccb8&l=00d-0cd&t=c>> (1/23) "Chemicals building blocks for life on Earth were delivered when another celestial body smashed into the planet. That's the finding of a new study that suggests most of Earth's essential elements for life – including most of the carbon and nitrogen in us – probably came from another planet. ... Professor Dasgupta, principal investigator on a NASA-funded project called CLEVER Planets that is exploring how life-essential elements might come together on distant planets, said better understanding the origin of Earth's life-essential elements has implications beyond our solar system."

## A Collision With Another Planet May Have Seeded Earth With The Ingredients For Life

Gizmodo <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019012402nasa&r=email-ccb8&l=00e-9c4&t=c>> (1/23, Dvorsky) “New research suggests that much of the material that made life possible on Earth arrived after a cataclysmic collision between our planet and a Mars-sized object billions of years ago – likely the same collision that produced the Moon, the scientists say. For life to emerge on an otherwise dead planet, an assortment of chemical compounds, or volatile elements, are required, including carbon, nitrogen, and sulfur. Conventional thinking has it that Earth’s volatile elements arrived through the steady bombardment of ancient meteorites. New research published today in Science Advances proposes an alternative delivery mechanism: a catastrophic collision between Earth and a Mars-sized object, sometimes referred to as Theia, some 4.4 billion years ago.”

## The Moon’s Violent Birth May Have Given Earth The Ingredients Of Life

New Scientist <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019012402nasa&r=email-ccb8&l=00f-b14&t=c>> (1/23, Crane) “The cosmic collision that gave Earth its moon may have also given it the ingredients for life. Researchers have never been able to nail down exactly how and when Earth got its carbon, nitrogen, and sulphur, but a new study suggests they may have come from the object that smashed into Earth and created the moon about 4.5 billion years ago. A group of researchers from Rice University in Texas used a series of experiments and simulations to test whether these volatile elements – those with low boiling points – could have been the result of such a collision.”

## NASA Discovers Fresh ‘Blast Pattern’ On Mars

CNET News <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019012402nasa&r=email-ccb8&l=010-860&t=c>> (1/23, Kooser) “Sometime between July and September of 2018, a rock smacked into Mars and left an impressive mark near the planet’s south pole. NASA’s Mars Reconnaissance Orbiter (MRO) snapped a view of the resulting impact crater and the explosive signature it left on the icy landscape. ‘It’s notable because it occurred in the seasonal southern ice cap, and has apparently punched through it, creating a two-toned blast pattern,’ NASA planetary scientist Ross Beyer said of the image released on Tuesday.”

## Initial Results From The Ultima Thule Flyby

Sky & Telescope <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019012402nasa&r=email-ccb8&l=011-ca4&t=c>> (1/23, Stern) “After more than three years of continuous preparations, it’s hard for me to believe that NASA’s New Horizons flyby of Kuiper Belt object 2014 MU69, nicknamed Ultima Thule, is now history – but it is. The flyby past Ultima Thule was far more challenging than our 2015 New Horizons exploration of the Pluto system. The event culminated on January 1st in complete and utter success. Every planned observation, by every one of the scientific instruments aboard New Horizons, performed according to plan. The spacecraft did, too.”

## Birth Of Massive Black Holes In The Early Universe

Science Daily <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019012402nasa&r=email-ccb8&l=012-766&t=c>> (1/23) “The light released from around the first massive black holes in the universe is so intense that it is able to reach telescopes across the entire expanse of the universe. Incredibly, the light from the most distant black holes (or quasars) has been traveling to us for more than 13 billion light years. However, we do not know how these monster black holes formed. ... Conclusions of the study, reported on January 23rd in the journal Nature and supported by funding from the National Science Foundation, the European Union and NASA, also finds that massive black holes are much more common in the universe than previously thought.”

## One Of Our Best Views Of The Supermassive Black Hole At The Heart Of The Milky Way

Universe Today <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019012402nasa&r=email-ccb8&l=013-f5f&t=c>> (1/23) “An almost unimaginably enormous black hole is situated at the heart of the Milky Way. It’s called a Supermassive Black Hole (SMBH), and astronomers think that almost all massive galaxies have one at their center. But of course, nobody’s ever seen one (sort of, more on that later): It’s all based on evidence other than direct observation.”

#### SNAPSHOT: Astronomers Spot Supermassive Black Hole From Early Universe

Discover Magazine <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019012402nasa&r=email-ccb8&l=014-686&t=c>> (1/23) “Astronomers spotted the brightest quasar ever discovered in the early universe, as depicted in this striking artist’s impression. And now it’s offering astronomers a rare zoomed-in glimpse at how the earliest galaxies formed. ... But even then, it took observations from the Hubble Space Telescope to get an image clear enough to resolve the system.”

#### Astronomers Discover An Unusual Nuclear Transient

Phys (UK) <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019012402nasa&r=email-ccb8&l=015-104&t=c>> (1/23) “An international group of astronomers has detected an unusual nuclear transient in the nucleus of a weakly active galaxy. The new transient was identified by the OGLE-IV Transient Detection System and received designation OGLE17aaj. ... Results from ultraviolet measurements of OGLE17aaj follow the trend seen in optical observations. The astronomers noted that at maximum, the transient reached a magnitude of 19.06, and 18.52 on galaxy-subtracted images from NASA’s Swift space telescope.”

#### Mysterious Galaxy Measured Exquisitely, And Contains No Dark Matter At All

Medium <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019012402nasa&r=email-ccb8&l=016-306&t=c>> (1/23) “One of the greatest puzzles in the entire Universe is the dark matter mystery. In theory, for every bit of normal matter (like us) in the Universe, there should be approximately five times as much dark matter. Both normal and dark matter should experience gravitation equally, meaning that the largest structures in the Universe – galaxies, clusters of galaxies, and cosmic filaments – should contain and be dominated by dark matter. When we measure the motions of individual galaxies, both isolated and in clusters, the normal matter alone is not enough to explain what we see. Dark matter is also required.”

#### Splitting Images Of Quasars Helps Researchers Understand Expansion Of The Universe

Tech Times <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019012402nasa&r=email-ccb8&l=017-453&t=c>> (1/23, Samson) “Researchers from the University of California, Los Angeles devise a way to measure the rate in which the universe is expanding: quasars. The team argued that the split images of quasars, a fountain of radiation powered by black holes, can be used to produce an estimate of the Hubble Constant or the measurement used to describe the expansion of the universe.”

#### How Did Uranus End Up On Its Side? We’ve Been Finding Out

Phys (UK) <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019012402nasa&r=email-ccb8&l=018-5a7&t=c>> (1/23) “Uranus is arguably the most mysterious planet in the solar system – we know very little about it. So far, we have only visited the planet once, with the Voyager 2 spacecraft back in 1986. The most obvious odd thing about this ice giant is the fact that it is spinning on its side. Unlike all the other planets, which spin roughly ‘upright’ with their spin axes at close to right angles to their orbits around the sun, Uranus is tilted by almost a right angle.”

#### New Study Suggests The ‘Cooking’ Of Ancient Organics Created Thick Nitrogen Atmosphere



Science Daily <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019012402nasa&r=email-ccb8&l=019-97f&t=c>> (1/23) "A new Southwest Research Institute study tackles one of the greatest mysteries about Titan, one of Saturn's moons: the origin of its thick, nitrogen-rich atmosphere. The study posits that one key to Titan's mysterious atmosphere is the 'cooking' of organic material in the moon's interior. ... [The] investigation was spurred by data from the Rosetta spacecraft, a European Space Agency probe that studied the distant comet 67P/Churyumov-Gerasimenko with NASA participation and delivered the surprising discovery that the comet was roughly half ice, a quarter rock and a quarter organic material."

#### A Disc Of Icy Material, Not Planet 9, Might Explain The Strange Movements In The Outer Solar System

Universe Today <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019012402nasa&r=email-ccb8&l=01a-d52&t=c>> (1/23) "Is there or isn't there a Planet 9? Is there a planet way out on the outskirts of our Solar System, with sufficient mass to explain the movements of distant objects? Or is a disc of icy material responsible? There's no direct evidence yet of an actual Planet 9, but something with sufficient mass is affecting the orbits of distant Solar System objects. A new study suggests that a disc of icy material causes the strange movements of outer Solar System objects, and that we don't need to invent another planet to explain those movements."

#### Asteroid Impacts Increased 290 Million Years Ago, Lunar Craters Reveal

Sky & Telescope <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019012402nasa&r=email-ccb8&l=01b-969&t=c>> (1/23) "Researchers have estimated the ages of craters on the lunar surface, finding that the rate of large impacts nearly tripled 290 million years ago – an increase that might be ongoing. ... A team of scientists used NASA's Lunar Reconnaissance Orbiter data to study the Moon's craters, scaled by size and color-coded by age (blue indicates those younger than 290 million years), to understand the impact history of the Earth. Young craters dominate the lunar surface."

#### Where Is Earth's Submoon?

Phys (UK) <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019012402nasa&r=email-ccb8&l=01c-a73&t=c>> (1/23) "'Can moons have moons?' This simple question – asked by the four-year old son of Carnegie's Juna Kollmeier – started it all. Not long after this initial bedtime query, Kollmeier was coordinating a program at the Kavli Institute for Theoretical Physics (KITP) on the Milky Way while her one-time college classmate Sean Raymond of Université de Bordeaux was attending a parallel KITP program on the dynamics of Earth-like planets. ... On a stable orbit around the Moon – such as the one for NASA's proposed Lunar Gateway – a submoon would keep humanity's treasures safe for posterity long after Earth became unsuitable for life."

#### Daring Plan To Save Earth By Derailing 2,600FT Asteroid System REVEALED

Daily Express (UK) <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019012402nasa&r=email-ccb8&l=01d-f9b&t=c>> (1/23, Kettley) "NASA's Double Asteroid Redirection Test (DART) is scheduled to collide with a binary asteroid system in October 2022. The space mission will see NASA strike a pair of space rocks measuring 2,560ft (780m) and 525ft (160m) in diameter respectively. NASA's interstellar target is 65803 Didymos – an Apollo-type asteroid paired with its own satellite space rock, affectionately dubbed Didymoon."

Space Tech

No content.

Various

House Spending Bill Fires Warning Shot At James Webb Space Telescope

SPACE <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019012402nasa&r=email-ccb8&l=01e-6eb&t=c>> (1/23, Foust) “A new appropriations bill the House plans to vote on next week would provide \$21.5 billion for NASA in 2019 but warns that any further problems with the James Webb Space Telescope could lead to its cancellation. ... That bill includes the full \$304.6 million requested for JWST in 2019, but the report accompanying the bill offered harsh language, and a warning, regarding the space telescope given the cost overruns and schedule delays announced last year.”

#### Key Data For NASA's Ice-Monitoring Satellite In Trouble Thanks To Shutdown

Gizmodo <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019012402nasa&r=email-ccb8&l=01f-1fe&t=c>> (1/23, Stone) “Last month, NASA researchers were gleefully sharing the early returns from their recently launched ice-monitoring satellite, ICESat-2, at the world's largest annual meeting of Earth scientists. This month, many of those same researchers are furloughed as a vital airborne campaign needed to calibrate the satellite faces mounting delays due to the U.S. government shutdown. Science Magazine reported last week that the spring campaign for NASA's Operation IceBridge – a series of airborne flights over the Arctic and Antarctic the space agency has been conducting since 2009 – would likely be delayed thanks to President Trump's fictitious crisis at the U.S. southern border.”

#### Shutdown's Toll Mounts For NASA And Companies

Space News <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019012402nasa&r=email-ccb8&l=020-233&t=c>> (1/23) “A partial government shutdown now nearly five weeks old is affecting a growing number of space companies and organizations as well as the agencies themselves shuttered by the lapse in funding. Much of the federal government has been shut down since a continuing resolution, or stopgap appropriations bill, funding them lapsed Dec. 22. The shutdown, now the longest on record, affects NASA, the Federal Aviation Administration, Federal Communications Commission and National Oceanic and Atmospheric Administration, among other agencies, furloughing most of their workforce and limiting them to essential operations only.”

#### Trump Administration Closes Climate Data Webpage, Citing Shutdown

The Hill <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019012402nasa&r=email-ccb8&l=021-75a&t=c>> (1/23, Green) “The public can no longer access the National Oceanic and Atmospheric Administration's (NOAA) climate data because of the partial government shutdown, now in its second month. ... A national global temperature report typically released mid-January by NOAA and NASA is also being delayed because of a lack of access to the data, The New York Times reported last week. The information is key to climate scientists who study temperature trends.”

#### Colorado-Built Dream Chaser, Successor To The Space Shuttle, Turning Into Reality

Denver Post <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019012402nasa&r=email-ccb8&l=022-241&t=c>> (1/23) “Production of a successor to NASA's space shuttle will get underway in Colorado and will be overseen by a former U.S. Air Force pilot and astronaut who piloted two shuttle flights and commanded another three. For the past few years, Steve Lindsey has overseen the design, development and testing of the Dream Chaser, a spacecraft that will be built by Sierra Nevada Corp. at its Space Systems operations in Louisville. In December, NASA declared production a 'go' after the craft passed a critical review. The Dream Chaser's first trip is scheduled for late 2020 when it will take supplies, science experiments and other cargo to the International Space Station.”

#### Buzz Aldrin Wants Trump To Change The Name Of Space Force And Offers Alternative

Independent (UK) <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019012402nasa&r=email-ccb8&l=023-b33&t=c>> (1/23) “Buzz Aldrin, the legendary NASA astronaut, is calling on President Donald Trump to rename the

Space Force to something less antagonistic. In June 2018, the White House announced the creation of a new branch in the armed forces that would be responsible for handling military operations in space. Mr Aldrin, however, is not pleased with the branding.”

#### There's A New Fake Moon Landing Theory, And It's Dumber Than You Could Possibly Imagine

BGR <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019012402nasa&r=email-ccb8&l=024-a11&t=c>> (1/23, Wehner) “NASA’s Apollo 11 mission landed astronauts Neil Armstrong and Buzz Aldrin on the Moon in July of 1969, but that’s not what some would have you believe. Conspiracy theories about NASA having allegedly faked the Moon landings are not new. They all focus on the idea that NASA shot footage of supposed lunar excursions in a movie studio right here on Earth, but a new theory by a seasoned conspiracy pusher really takes the cake in terms of utter absurdity.”

#### UFO Seen Near ISS

Daily Express (UK) <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019012402nasa&r=email-ccb8&l=025-57a&t=c>> (1/23, Martin) “The ISS is being used for astronauts and humans to interact and NASA is refusing to disclose the information. This is according to conspiracy theorists who spotted two bright lights hovering around the ISS during a NASA live feed. The lights apparently ‘defy explanation’ and space agencies such as NASA and the European Space Agency (ESA) are using the habitable satellite to meet aliens – although the reasons why are unclear.”

#### Op-Ed | Responsible Satellite Operations In The Era Of Large Constellations

Space News <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019012402nasa&r=email-ccb8&l=026-a1b&t=c>> (1/23) “Today, there are nearly 2,000 active satellites orbiting the Earth, and there are proposals to launch 20,000 more in the near future. While these unprecedented numbers of satellites bring with them important benefits to humanity, we must be careful to proceed responsibly and minimize the potential for harming the low Earth orbit (LEO) environment for generations to come. ... Environmental protections must be updated. NASA drafted the first debris mitigation standards in 1995, and publications were subsequently issued by other expert organizations, such as the Inter-Agency Space Debris Coordination Committee (IADC), the International Organization for Standardization (ISO), the European Space Agency, and others.”

#### Other

#### Blue Origin’s New Shepard Launches NASA Experiments, Aces Rocket Landing

SPACE <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019012402nasa&r=email-ccb8&l=027-bdf&t=c>> (1/23, Wall) “Blue Origin’s privately built New Shepard spacecraft has aced its biggest mission yet, and this time the spacecraft flew for NASA. The reusable New Shepard launched into space today (Jan. 23) on its 10th-ever test flight, a brief uncrewed jaunt that carried at least eight NASA-sponsored research and technology payloads to suborbital space and back. The mission, which lasted 10 minutes and 15 seconds, reached an altitude of 66 miles (107 kilometers), Blue Origin officials said.”

#### Blue Origin Wants To Launch A Person Into Space By The End Of This Year

SPACE <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019012402nasa&r=email-ccb8&l=028-bd9&t=c>> (1/23, Bartels) “Blue Origin’s New Shepard rocket completed its 10th uncrewed test flight today (Jan. 23) during a smooth launch from chilly West Texas – but the company is eyeing a crewed flight later this year, according to statements made during today’s launch broadcast. That timeline is becoming clearer after a December road trip brought the company’s fourth rocket, the first rated for human passengers, to its launch facility in West Texas. New

Shepard is the company's reusable, suborbital rocket designed for space tourism flights; the company is also designing a larger, heavy-lift rocket called New Glenn, which is scheduled to debut in 2021."

#### New Shepard Launches NASA Experiments To Space, Aims For Human Flights This Year

Spaceflight Now <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019012402nasa&r=email-ccb8&l=029-44d&t=c>> (1/23, Clark) "Blue Origin, the commercial space company founded by Amazon billionaire Jeff Bezos, launched a package of NASA experiments to the edge of space Wednesday from West Texas with a suborbital New Shepard booster, then successfully recovered the reusable rocket and space capsule a few minutes later. The single stage rocket, powered by a BE-3 engine burning liquid hydrogen and liquid oxygen, took off at 10:05 a.m. EST (9:05 a.m. CST; 1505 GMT) from Blue Origin's test site north of Van Horn, Texas, according to Ariane Cornell, a company sales director who anchored a video webcast of the mission."

#### Elon Musk's New SpaceX Starship Knocked Over By High Texas Winds

Fortune <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019012402nasa&r=email-ccb8&l=02a-6c3&t=c>> (1/23) "SpaceX's new Starship hopper, a prototype of the spacecraft that could one day take people to Mars, will need weeks of repairs after it was toppled by strong winds at the company's private launch site in Boca Chica, Texas, according to a tweet by CEO Elon Musk. Images posted online Wednesday show the stainless steel vehicle tipped over and laying sideways on the ground. Musk said 50 mph wind gusts broke the rocket's mooring blocks late Tuesday night, prompting the its top part to tip sideways."

#### The ESA Is Taking Steps To Mine Moon Dust

Popular Mechanics <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019012402nasa&r=email-ccb8&l=02b-33c&t=c>> (1/23) "The European Space Agency (ESA) has taken the first of many steps that would be needed to extract resources like oxygen and water from the moon. It's signed a one-year contract with Europe's largest launch services provider and former lunar XPRIZE competitor to study the feasibility of mining the moon. The hypothetical mission would launch by 2025 and focus on lunar regolith, which is a fancy name for lunar soil."

#### European Commission, Fearing Brain Drain To US, Takes Sharper Look At Space Investment Strategy

Space News <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019012402nasa&r=email-ccb8&l=02c-20a&t=c>> (1/23) "The European Commission is preparing a series of programs aimed at fostering space startups and encouraging them to stay in Europe rather than leaving for the United States. Commissioners speaking this week at the Conference on European Space Policy in Brussels said the continued reservations of European investors about financing space startups is hampering Europe's ability to keep pace with similar startup activity in the United States."

#### Copernicus Budget Gets Budget Boost From European Commission

Space News <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019012402nasa&r=email-ccb8&l=02d-5b5&t=c>> (1/23, Gannon) "The European Commission allocated another 96 million euros (\$109 million) for the European Space Agency to spend on the Copernicus Earth-observation program in the next two years. The agreement was announced this week during the Conference on European Space Policy in Brussels, Belgium. Similar to NASA's Landsat program, Copernicus provides Earth-observation data for free. Copernicus' Sentinel satellites monitor weather, land use, air quality, agriculture, and other environmental factors that can be used in a variety of sectors, from urban planning to climate change mitigation."

#### India's Space Agency Is Set To Launch 'Kalamsat'

Business Insider India <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019012402nasa&r=email->

ccb8&l=02e-8f3&t=c> (1/24) “The Indian Space and Research Organisation (ISRO) is set to launch a satellite – Kalamsat, which has been prepared by Indian students and a private organisation, Space Kidz India. The communication satellite is planned for launch on Thursday (24 January) at 11:37 PM. According to ISRO, Kalamsat is world’s lightest and first 3D printed satellite.”

#### Shooting Stars On Demand Launch In Japan

Astronomy News <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019012402nasa&r=email-ccb8&l=02f-a5d&t=c>> (1/23) “A rocket blasted off from Japan on Friday, Jan. 18, carrying satellites that will deliver the first-ever artificial meteor shower. The Tokyo-based start-up ALE Co. Ltd has developed a new micro-satellite that will put on quite a show over Hiroshima early next year. ... Seven of these tiny satellites took a ride on the small Epsilon-4 rocket, which launched from the Uchinoura space centre in Japan by the Japan Aerospace Exploration Agency (JAXA).”

#### Japan’s Mission To Asteroid Ryugu Becomes Its Own Fairytale

CNET News <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019012402nasa&r=email-ccb8&l=030-e7c&t=c>> (1/23, Ryan) “The Japan Aerospace Exploration Agency (JAXA)’s Hayabusa2 spacecraft reached Ryugu in June 2018 ready to survey and eventually sample the space rock. During the course of their surveying, the team had often referred to many of the locations on Ryugu by nicknames, including using Star Wars’ Death Star as a crater name. But the International Astronomical Union’s (IAU) Working Group for Planetary System Nomenclature (which itself needs a new nickname) requires those names to be formally recognized, so they can be referenced when scientists and astronomers discuss the potentially hazardous asteroid.”

#### Stratolaunch Abandons Launch Vehicle Program For World’s Largest Airplane

SPACE <<http://mailview.bulletinintelligence.com/mailview.aspx?m=2019012402nasa&r=email-ccb8&l=031-b3b&t=c>> (1/23) “Stratolaunch, the company founded by the late billionaire Paul Allen, said Jan. 18 that it is ending work on a launch vehicle that would be flown on the company’s giant aircraft. In a statement to SpaceNews, a company spokesman said that the company was ending work on its own family of launch vehicles and would instead use its aircraft for launching small Pegasus XL rockets from Northrop Grumman. “

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## NASA Morning Briefing for Thursday, May 30, 2019

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#### Top Stories

##### Turkish-American NASA Scientist Released From Turkish Prison

Washington Post <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D003-2D5cb-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=yEC0OtNd-ts2kzy7E64Ssj0UbGlf3MIhS-aggUHg4&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D003-2D5cb-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=yEC0OtNd-ts2kzy7E64Ssj0UbGlf3MIhS-aggUHg4&e=>)> (5/29, Press) "Serkan Golge, a Turkish-American scientist imprisoned in Turkey for nearly three years, has been released. Morgan Ortagus, a U.S. State Department spokeswoman, welcomed the decision but declined to discuss why he was released. However, she told reporters Wednesday it was the 'right thing to do.'"

## Two Russians Venture Into Open Space From Space Station

Washington Post <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D004-2D0c8-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=O-TWe2Fyp4SjemvZDJKBpplpnoVr\\_OcckvE7Gsla4qE&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D004-2D0c8-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=O-TWe2Fyp4SjemvZDJKBpplpnoVr_OcckvE7Gsla4qE&e=>)> (5/29) “Two Russian crewmembers on the International Space Station ventured into open space Wednesday to conduct scientific research and help maintain the orbiting outpost. Oleg Kononenko and Alexey Ovchinin worked to retrieve several scientific experiments intended to study the impact of space flight that were mounted on the space station’s exterior. They also cleaned some of the space station’s windows, mounted handrails to facilitate future spacewalks and performed other maintenance.”

## WHITTINGTON: A Replacement For NASA’s International Space Station Is On The Way

Daily Caller <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D005-2Da23-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=wwGPz3aaBrq4LBKmxYPhRkytYRobK67WHQoiFJqFkqY&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D005-2Da23-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=wwGPz3aaBrq4LBKmxYPhRkytYRobK67WHQoiFJqFkqY&e=>)> (5/29) “The International Space Station, by any measure, has been a triumph for the scientific discoveries and the technological innovations that it has given birth to. The ISS has also proven to be a model for international cooperation in space that NASA would like to see replicated for the ‘return to the moon’ program. However, noting that all good things must come to an end, the space agency is already entertaining commercial replacements for the ISS. Current thinking proposes that a company (likely several) would build its own space station, and NASA would become an anchor customer.”

## Finding The Building Blocks Of Life A Billion Miles Beyond Pluto

The Hill <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D006-2D49b-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=ddo-S6HE7D5XWNOetrwauDDgalqEdF18hP-7HtZNPok&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D006-2D49b-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=ddo-S6HE7D5XWNOetrwauDDgalqEdF18hP-7HtZNPok&e=>)> (5/29) “Try for a moment to wrap your mind around the concept of “deep time.” That is, a time long ago when the dinosaurs lived, or when our planet came to be, about 4.5 billion years ago. So much has happened since that time that the Earth, Moon, sun and, in fact, our entire solar system has changed dramatically. How do we study such long-ago events? It is possible, but not easy.”

## NEAT Tests Megawatt-Scale Electric Aircraft Power Systems

Space Daily <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D007-2Da3b-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=aXUr-dGaiEFUIFRcmX8iVI\\_UGgNKz\\_TlspK1mjRI-6g&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D007-2Da3b-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=aXUr-dGaiEFUIFRcmX8iVI_UGgNKz_TlspK1mjRI-6g&e=>)> (5/30) “As large airline companies compete to reduce emissions, fuel and noise, aircraft manufacturers are shifting more of their aircraft systems to electrical power. To help usher in the next revolution in aviation- hybrid electric and turboelectric aircraft – NASA is building and testing portions of a concept aircraft’s power systems with an eye toward the future. NASA Glenn has repurposed its Hypersonic Tunnel Facility to create the NASA Electric Aircraft Testbed (NEAT). Located at Plum Brook Station in Sandusky, Ohio, NEAT is a world-class, reconfigurable facility that can accommodate power systems for large passenger airplanes like a Boeing 737, with megawatts of power.”

## Flight

### NEAT Tests Megawatt-Scale Electric Aircraft Power Systems

Space Daily <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D008-2Dcbc-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=rzNJEWCW7KCKQuSldQmOsRVG4wxUECpKN7j9vGcYWafY&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D008-2Dcbc-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=rzNJEWCW7KCKQuSldQmOsRVG4wxUECpKN7j9vGcYWafY&e=>) (5/30) “As large airline companies compete to reduce emissions, fuel and noise, aircraft manufacturers are shifting more of their aircraft systems to electrical power. To help usher in the next revolution in aviation- hybrid electric and turboelectric aircraft – NASA is building and testing portions of a concept aircraft’s power systems with an eye toward the future. NASA Glenn has repurposed its Hypersonic Tunnel Facility to create the NASA Electric Aircraft Testbed (NEAT). Located at Plum Brook Station in Sandusky, Ohio, NEAT is a world-class, reconfigurable facility that can accommodate power systems for large passenger airplanes like a Boeing 737, with megawatts of power.”

## Earth

### First ICESat-2 Global Data Released: Ice, Forests And More

Space Daily <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D009-2D864-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=emHu3Uo4nkU2G6XAA1tgKRKrotl2TQHJUFafcoNx8ao&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D009-2D864-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=emHu3Uo4nkU2G6XAA1tgKRKrotl2TQHJUFafcoNx8ao&e=>) (5/30) “More than a trillion new measurements of Earth’s height – blanketing everything from glaciers in Greenland, to mangrove forests in Florida, to sea ice surrounding Antarctica – are now available to the public. With millions more observations added each day, data from NASA’s Ice, Cloud and land Elevation Satellite-2 is providing a precise global portrait of elevation and will allow scientists to track even the slightest changes in the planet’s polar regions.”

## Humans in Space

### WHITTINGTON: A Replacement For NASA’s International Space Station Is On The Way

Daily Caller <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D00a-2Df33-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=oWyEn9GJZJNSmyxKEL-gaML4P2\\_dEKY1Gyc2bf7UblY&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D00a-2Df33-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=oWyEn9GJZJNSmyxKEL-gaML4P2_dEKY1Gyc2bf7UblY&e=>) (5/29) “The International Space Station, by any measure, has been a triumph for the scientific discoveries and the technological innovations that it has given birth to. The ISS has also proven to be a model for international cooperation in space that NASA would like to see replicated for the ‘return to the moon’ program. However, noting that all good things must come to an end, the space agency is already entertaining commercial replacements for the ISS. Current thinking proposes that a company (likely several) would build its own space station, and NASA would become an anchor customer.”

### Two Russians Venture Into Open Space From Space Station

Washington Post <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D00b-2Dbb1-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D00b-2Dbb1-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD)

8-mHkTTiYCEf5ROyus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=PyAF8t6CgxT5FDvZMju5U-TOFdHrvWiROoqt05qGMmU&e=> (5/29) "Two Russian crewmembers on the International Space Station ventured into open space Wednesday to conduct scientific research and help maintain the orbiting outpost. Oleg Kononenko and Alexey Ovchinin worked to retrieve several scientific experiments intended to study the impact of space flight that were mounted on the space station's exterior. They also cleaned some of the space station's windows, mounted handrails to facilitate future spacewalks and performed other maintenance."

#### Cosmonauts Complete Tasks Outside Space Station, Honor Spacewalk Pioneer

Spaceflight Now <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D00c-2Da77-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=9fqT8b8idZTVLQpAIPgr9eMhK0t6cr3Mw6lazKkVylE&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D00c-2Da77-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=9fqT8b8idZTVLQpAIPgr9eMhK0t6cr3Mw6lazKkVylE&e=>) (5/29) "Two Russian cosmonauts stepped outside the International Space Station Wednesday, sent birthday greetings to former cosmonaut Alexey Leonov, the first man to walk in space, and then carried out a full slate of maintenance work. Expedition 59 commander Oleg Kononenko, making his fifth spacewalk, and crewmate Alexey Ovchinin, making his first, opened the hatch of the Pirs airlock compartment at 11:42 a.m. EDT to officially kick off what turned out to be a six-hour one-minute excursion, the year's fourth spacewalk and the first by the Russians."

#### Russian Cosmonauts Take A Spacewalk

Reuters <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D00d-2D0c9-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=QOywmXmA0YJMFsvGMSBcoWT-yCov65WgaRXhuXtEwg0&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D00d-2D0c9-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=QOywmXmA0YJMFsvGMSBcoWT-yCov65WgaRXhuXtEwg0&e=>) (5/29) "Russian cosmonauts Oleg Kononenko and Alexey Ovchinin ventured outside the International Space Station on Wednesday May 29th to 'retrieve science experiments and conduct maintenance on the orbiting laboratory', according to NASA."

#### Two Russians Venture Into Open Space From Space Station

Houston Chronicle <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D00e-2D7ac-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=gkUvUxBErw11KUgHgPiaE5KisNnNROQwZMZoLZ0QUZs&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D00e-2D7ac-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=gkUvUxBErw11KUgHgPiaE5KisNnNROQwZMZoLZ0QUZs&e=>) (5/29) "Two Russian crewmembers on the International Space Station ventured into open space Wednesday to conduct scientific research and help maintain the orbiting outpost. Oleg Kononenko and Alexey Ovchinin worked to retrieve several scientific experiments intended to study the impact of space flight that were mounted on the space station's exterior. They also cleaned some of the space station's windows, mounted handrails to facilitate future spacewalks and performed other maintenance."

#### Russian Cosmonauts Are Conducting A Spacewalk Right Now, And You Can Watch It Live

BGR <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D00f-2D7d0-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=9mTMoaZQvlejdf7N4uiu2SLOanHdOHtPVTZDg0KG4FA&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D00f-2D7d0-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=9mTMoaZQvlejdf7N4uiu2SLOanHdOHtPVTZDg0KG4FA&e=>) (5/29, Wehner) "The International Space

Station is one of the most important scientific laboratories on (or around) Earth, and it's home to travelers from the United States, Russia, and other countries year-round. As such, upkeep is critical to ensuring things run smoothly, and trips outside of its protective are sometimes required. Today, Russian cosmonauts Oleg Kononenko and Alexey Ovchinin are conducting one such spacewalk. The trip is expected to last just shy of seven hours, and it's already begun. You can watch it unfold live right here."

#### SpaceX Explosion Hailed As A 'gift' By NASA As Investigation Into Crew Dragon Continues

Daily Express (UK) <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D010-2D20b-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=bssCZhlSxp74QCFrJXJEbHvApEtNBj-xr8YD2xRp27Q&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D010-2D20b-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=bssCZhlSxp74QCFrJXJEbHvApEtNBj-xr8YD2xRp27Q&e=>) (5/29, Anderson) "NASA and SpaceX are still investigating the accident following its destruction more than a month ago, according to Space News. Elon Musk's team said an 'anomaly occurred' during the test of its propulsion system. Leaked footage of the explosion showed the spacecraft, which was to be used by astronauts, engulfed in flames."

#### The Mysterious SpaceX Crew Dragon Explosion Is Still Being Investigated

BGR <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D011-2D6a8-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=jO7zY\\_KiCN23E-tEtSI1fphA-KIWulvjB0tlWjqcDsY&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D011-2D6a8-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=jO7zY_KiCN23E-tEtSI1fphA-KIWulvjB0tlWjqcDsY&e=>) (5/29, Wehner) "SpaceX has been on a real hot streak as of late, with many successful missions and firsts, like the successful docking of its Crew Dragon capsule to the International Space Station. A small speed bump in that otherwise smooth road came in late April when a test of the Crew Dragon resulted in an explosion and total loss of the spacecraft. Details regarding the accident have been hard to come by, and SpaceX waited quite a while before even acknowledging that it had lost the Crew Dragon in the incident. Several weeks have now passed and, despite a small info dump that came over a week after the explosion, the investigation into why the craft detonated remains ongoing."

#### NASA Briefly Updates Status Of Crew Dragon Anomaly, SpaceX Test Schedule

NASA Space Flight <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D012-2D5ad-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=ZWPfPnJJzy0dEREWmoUcx2fCsRpqf--yGNj-GdLJglU&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D012-2D5ad-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=ZWPfPnJJzy0dEREWmoUcx2fCsRpqf--yGNj-GdLJglU&e=>) (5/29) "As part of a planned presentation to the NASA Advisory Council, NASA's Commercial Crew Program manager, Kathy Lueders, updated the advisory council on the status of the investigation for SpaceX's Crew Dragon anomaly that occurred in April. Ms. Lueders did not go into in-depth detail but did highlight SpaceX's daily communication with NASA, the 'great job' done so far, and provided insight into changes that 'might be' needed to the Crew Dragon's SuperDraco system."

#### NASA Investigates Crew Dragon Anomaly

WFTV-TV <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D013-2D384-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D013-2D384-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-)

vmYXyk&s=XRXuEx6VxZjBzWREswTWZKWqKiNVEJyxHo7deJ11VQA&e=> (5/29) "Last week NASA Administrator spoke about the need for public transparency. NASA says the mishap at the cape has been saved and open to investigation team members who are working on a root cause analysis. It will determine the impact to commercial crew flight tests to the International Space Station. The chance they may launch again this year or launch for the first time this year with people in it is still conceivable."

## Moon to Mars

### US And Japan To Cooperate On Return To The Moon

SPACE <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D014-2D690-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=F2LSW1nx31fS2bl9T5WPs4CLn8ZHT7NrszbNLTlpKcY&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D014-2D690-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=F2LSW1nx31fS2bl9T5WPs4CLn8ZHT7NrszbNLTlpKcY&e=>) (5/29) "The governments of the United States and Japan have agreed to further cooperation in space which could include flying Japanese astronauts to the moon. At a joint press conference in Tokyo May 27 with Prime Minister Shinzo Abe, President Donald Trump mentioned cooperation in space exploration as one outcome of their meetings during the president's visit to the country."

### 12th Man On Moon Says It's Time To Go Back

Houston Chronicle <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D015-2D8c6-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=DtfSh5Sto31TWFFUW7gTA-Z5-UK5Ok5q0fmY\\_5zcfJE&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D015-2D8c6-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=DtfSh5Sto31TWFFUW7gTA-Z5-UK5Ok5q0fmY_5zcfJE&e=>) (5/30) "Harrison Schmitt barely had time to stand up from his chair during a space conference in March before he was swarmed by a group of researchers eager to talk, hug and take photos with the only scientist to walk on the moon. As the line of starstruck fans started to snake to the back of a ballroom at a hotel in The Woodlands, Schmitt paused to listen to each individual, taking time to learn names and making sure everyone got a turn. ... 'We now have an administration that seems to be committed to get us back to the moon and use that experience there not only for science but also to prepare to go to Mars,' Schmitt told the Houston Chronicle in March. 'There's a lot to learn and, ultimately, if we do want to go to Mars, we have to use the moon as a learning experience.'"

### NASA Curiosity Rover's Latest Clay Discovery Hints At Ancient Lakes

SlashGear <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D016-2Df8d-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=WyDVwsXTdXL8-zMz-4hAa5AVlabIT7yo\\_9Yx9w9C-rk&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D016-2Df8d-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=WyDVwsXTdXL8-zMz-4hAa5AVlabIT7yo_9Yx9w9C-rk&e=>) (5/29) "NASA has announced that its Curiosity rover confirmed the presence of clay in the Martian region it is exploring. That area, which is called the 'clay-bearing unit,' is the rover's latest point of interest due to what researchers say were signs hinting at the presence of clay minerals. The 'clay cache,' as NASA calls it, was confirmed in a pair of drilling sites called Kilmarie and Aberlady."

### Curiosity Strikes Clay In New Samples, Further Proving Mars' Watery Past

New Atlas <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D017-2Ddf0-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=WyDVwsXTdXL8-zMz-4hAa5AVlabIT7yo\\_9Yx9w9C-rk&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D017-2Ddf0-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=WyDVwsXTdXL8-zMz-4hAa5AVlabIT7yo_9Yx9w9C-rk&e=>)

3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=ipiQSHfcntTwdgW4QfVixOs\_By9zQKRDYXeID5wzePs&e=> (5/30) "NASA's Curiosity rover has begun investigating one of the most interesting regions so far on its seven-year journey. Scientists call the area the 'clay-bearing unit,' and sure enough, that name has turned out to be very apt. After drilling two new samples last month, the rover has finally confirmed high amounts of clay minerals, providing further proof that ancient Mars was once much wetter."

#### Curiosity Rover Breaks Mission Record, Snaps Selfie To Celebrate

Inquisitr <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D018-2D0c8-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=dWtDLZ2Ea7I3LwspqHeOM3yT2NH\\_TuPypYowrM2FJGA&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D018-2D0c8-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=dWtDLZ2Ea7I3LwspqHeOM3yT2NH_TuPypYowrM2FJGA&e=>) (5/29) "NASA's Curiosity rover has just reached an important milestone. After nearly seven years of trekking the red planet, the six-wheeled robot has stumbled upon a cache of clay minerals larger than anything detected in all of its years on Mars. The momentous discovery was made on the slope of Mount Sharp – the 3.4-mile-high mountain rising in the middle of the 96-mile-wide Gale Crater – in an area known as the 'clay-bearing unit.' This particular region lies south of Vera Rubin Ridge, the rocky outcrop that Curiosity studied for more than a year before moving to its current location. After recently drilling in two different spots within the 'clay-bearing unit,' the Mars rover walked away with more clay minerals than ever before, NASA's Jet Propulsion Laboratory (JPL) in Pasadena, California, announced today."

#### Life On Mars? Ethiopian Volcano Microbe Find Shows Life Could Have THRIVED On Mars

Daily Express (UK) <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D019-2Db63-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=mr9ApKWmfyAF9UUxQUWesTLFGdfGLVhvS0J\\_3uIFFeE&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D019-2Db63-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=mr9ApKWmfyAF9UUxQUWesTLFGdfGLVhvS0J_3uIFFeE&e=>) (5/30, Fish) "A hardy microbe has been discovered capable of surviving conditions similar to the extreme environments found on Mars. The organism thrives in one of the hottest places on the planet in supersaturated salt water that is 89C (192F) and strongly acidic. And the find offers the first evidence of a species surviving in the hot springs of the Ethiopian region. The region's similarities to the environment of early Mars will reveal more secrets about Earth and the origins of the Red Planet, scientists say. ... Dallol's unusual geochemistry has close parallels to the hydrothermal environments on Mars, including the Gusev Crater, explored by NASA's Spirit Mars rover."

#### NASA Is Intentionally Putting Helicopters Into Precarious Nosedives To Test New Mars Mission Hardware

Tech Times <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D01a-2D2eb-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=LBM8oTMmbzA9nSuYMhtiDxOWJ7TpXa6JN\\_ZSRpaNLWg&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D01a-2D2eb-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=LBM8oTMmbzA9nSuYMhtiDxOWJ7TpXa6JN_ZSRpaNLWg&e=>) (5/29, Samson) "NASA has conducted a flight test for the Lander Vision System, the technology that will help the Mars 2020 spacecraft touchdown on the Red Planet. According to a press release, an Airbus helicopter carried an engineering model of the LVS to Death Valley in California. During a flight, the helicopter carried out a sequence of pre-planned maneuvers that allowed the LVS to analyze the terrain below. NASA Launching New Mars Rover."

#### NASA Sent A Helicopter On A Nosedive To Test Mars Landing Hardware

MSN (UK) <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D01b-2D33e-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=Sm0RfkES57XGNZFkEZJJ8H3vD3G\\_Bh-c\\_HntBrFadrc&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D01b-2D33e-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=Sm0RfkES57XGNZFkEZJJ8H3vD3G_Bh-c_HntBrFadrc&e=>) (5/29) "NASA's Mars 2020 mission could teach us some incredible new things about our planetary neighbor, and even provide us with valuable insights that will shape plans for future manned missions to the Red Planet. It could be a very big deal for mankind... but first it has to actually, you know, land. One of the most crucial components of the Mars 2020 lander is the Lander Vision System, or VLS. The VLS will allow the spacecraft to specify its landing location automatically as it's cruising down to the surface, and NASA recently put it through its paces by strapping it to the front of a helicopter."

#### NASA Prepares For Future Moon Exploration With International Undersea Crew

SpaceRef <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D01c-2Da33-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=FokeA6EadP6i4BK40OK0zITfPXoryGxQIjZlQIPvU&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D01c-2Da33-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=FokeA6EadP6i4BK40OK0zITfPXoryGxQIjZlQIPvU&e=>) (5/29) "NASA will join an international crew on the floor of the Atlantic Ocean this summer to prepare for future deep space missions during the 10-day NASA Extreme Environment Mission Operations (NEEMO) 23 expedition slated to begin June 10. NEEMO 23 will focus on both exploration spacewalks and objectives related to space missions such as the International Space Station and future deep space missions to the Moon and Mars. As an analogue for future planetary science concepts and strategies, marine science also will be performed under the guidance of Florida International University's marine science department."

#### NASA Still Aiming For 2020 First Launch Of SLS

Space News <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D01d-2D950-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=1Jq7DbWO573JWBB9LJQDzCFDZMT3vKE4rV02xmi1FcU&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D01d-2D950-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=1Jq7DbWO573JWBB9LJQDzCFDZMT3vKE4rV02xmi1FcU&e=>) (5/29) "NASA believes it is still possible to perform the first launch of the Space Launch System before the end of 2020 even if the agency decides to retain some version of a key static-fire test of the rocket's core stage. Speaking at a May 28 meeting of the NASA Advisory Council's human exploration and operations committee, Bill Hill, deputy associate administrator for exploration systems development, said that the agency has yet to decide whether to perform what's known as the "green run," where the core stage and its four RS-25 engines are fired for eight minutes on a test stand at the Stennis Space Center in Mississippi."

#### NASA Makes Progress Assembling Massive Space Launch System Rocket Stage

Space Daily <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D01e-2D3c7-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=63ewq9C8lXWYqHU0g-RP3XInY1Zo09OUleCNiK8q5lc&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D01e-2D3c7-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=63ewq9C8lXWYqHU0g-RP3XInY1Zo09OUleCNiK8q5lc&e=>) (5/30) "NASA and Boeing technicians have begun the second of three major activities to join the large structural parts of the core stage for NASA's deep space rocket, the Space Launch System. When this task is completed, four of the five major core stage structures – most of the massive 212-foot stage-- will be assembled. Boeing and NASA will add the engine section and the four RS-25 engines to complete assembly of the core stage. This stage and its four RS-25 engines will produce 2 million pounds of thrust to help send the Artemis 1



Mission, the first integrated flight of SLS and the Orion spacecraft to the Moon.”

#### A Wind Tunnel Designed To Simulate The Dusty Surface Of Mars

Phys (UK) <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D01f-2D41f-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=ml4-piZQAUXjrNocQ7ypmgd10bTzIOgVeDMd40-7qow&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D01f-2D41f-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=ml4-piZQAUXjrNocQ7ypmgd10bTzIOgVeDMd40-7qow&e=>) (5/29) “Part of Aarhus University’s Mars Simulation Laboratory in Denmark, this wind tunnel has been specially designed to simulate the dusty surface of planet Mars. Constructed within an 8-meter long, 2.5-meter wide pressure chamber, the Aarhus Mars Simulation Wind Tunnel has attracted researchers from all over Europe and the United States, to test instruments and equipment for a wide range of Mars missions, including ESA’s ExoMars and NASA’s Mars 2020 rovers.”

#### Profanity-laden Apollo Broadcasts Got NASA In Hot Water 50 Years Ago

Daily Mail (UK) <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D020-2D7b6-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=oEd39x9Ueb1JX9ZNMW6BqXxNpRjcbNXVDx6JpGGeWw&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D020-2D7b6-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=oEd39x9Ueb1JX9ZNMW6BqXxNpRjcbNXVDx6JpGGeWw&e=>) (5/29) “If astronauts involved in NASA’s 1969 Apollo mission were to broadcast their lunar journey to audiences today, it might be flagged as ‘NSFW.’ Astronauts are often touted for being calm and collected, but according to NASA transcripts, several public slip-ups, and various reports, the space explorers are also prone to excited fits of profanity.”

#### Solar System and Beyond

##### Finding The Building Blocks Of Life A Billion Miles Beyond Pluto

The Hill <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D021-2Dfa8-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=cvxF6o7\\_j\\_gf\\_Xwa\\_Y95DkNYbloIQsH6LuXzswFqFA&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D021-2Dfa8-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=cvxF6o7_j_gf_Xwa_Y95DkNYbloIQsH6LuXzswFqFA&e=>) (5/29) “Try for a moment to wrap your mind around the concept of “deep time.” That is, a time long ago when the dinosaurs lived, or when our planet came to be, about 4.5 billion years ago. So much has happened since that time that the Earth, Moon, sun and, in fact, our entire solar system has changed dramatically. How do we study such long-ago events? It is possible, but not easy.”

##### A New View Of Exoplanets With NASA’s Upcoming Webb Telescope

Space Daily <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D022-2D20e-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=ixB1TisF-e1liEPdB7VD6s9EZHy0eadIINUoem1ob4Y&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D022-2D20e-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=ixB1TisF-e1liEPdB7VD6s9EZHy0eadIINUoem1ob4Y&e=>) (5/30) “While we now know of thousands of exoplanets – planets around other stars – the vast majority of our knowledge is indirect. That is, scientists have not actually taken many pictures of exoplanets, and because of the limits of current technology, we can only see these worlds as points of light. However, the number of exoplanets that have been directly imaged is growing over time. When NASA’s James Webb Space Telescope launches in 2021, it will open a new window on these exoplanets, observing them in wavelengths at which they have never been seen before and gaining new insights about their nature.”

## Astronomers Are Finding Binary Pairs Of Stars Thrown Out Of Galaxies Together

Universe Today <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D023-2De9f-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=Dx0gH0dofQkGGYzkv94FG5-61ds7o\\_b34RTjjGHjA9Q&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D023-2De9f-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=Dx0gH0dofQkGGYzkv94FG5-61ds7o_b34RTjjGHjA9Q&e=>) (5/29) “A rogue star is one that has escaped the gravitational pull of its home galaxy. These stars drift through intergalactic space, and so are sometimes called intergalactic stars. Sometimes, when a rogue star is ejected from its galaxy, it drags its binary pair along for the ride. Astronomers think that most stars live in binary relationships, where two stars orbit one another, or they orbit a common center of gravity. The binary stars don’t have to be stars like our Sun; they can be more exotic stellar objects like neutron stars. A new study based on data from NASA’s Chandra X-ray Observatory highlights a number of these pairs and how they were ejected.”

## NASA's Europa Plans In Doubt, New Report Suggests

Axios <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D024-2Dff7-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=PHKcl9RNRy91\\_Uq6ZpYDtumgpcoyJkXkc168k4Vjwuw&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D024-2Dff7-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=PHKcl9RNRy91_Uq6ZpYDtumgpcoyJkXkc168k4Vjwuw&e=>) (5/29, Kramer) “NASA’s plans to send a lander and orbiter to Europa, one of Jupiter’s 79 known moons, in the 2020s are in doubt. Why it matters: NASA hopes to launch its Europa Clipper orbiter by 2023, but a newly released NASA Office of Inspector General report suggests that the agency may not meet that goal, despite solid initial funding and congressional support.”

## Big Space Challenges Could Put NASA's Europa Missions On Ice

SPACE <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D025-2D93f-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=C-nlBDb80yJOwi2a0A4\\_IMrhGz5n\\_Njwwfh3TXwH8tA&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D025-2D93f-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=C-nlBDb80yJOwi2a0A4_IMrhGz5n_Njwwfh3TXwH8tA&e=>) (5/29) “NASA has spent years working on two potential missions to crack the secrets of Jupiter’s icy moon Europa — and both of those projects are in trouble, according to an internal investigation released today (May 29). Europa Clipper is currently scheduled to launch in 2023 to orbit the moon for more than three years, studying its icy shell and suspected internal ocean, among other features. Europa Lander would follow in its wake and touch down on the ice in order to better investigate the possibility of life. But according to a nine-month investigation conducted by the NASA Office of Inspector General, both missions are facing a host of serious issues as their teams attempt to balance the needs of NASA and Congress.”

## Compact System Of Three Super-Earths Found Around Naked-Eye Star

Sci-News <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D026-2Dac8-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=4Gi532r72CdXj1qzledGzaSI7YYho4zbJHmhRLFZAJo&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D026-2Dac8-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=4Gi532r72CdXj1qzledGzaSI7YYho4zbJHmhRLFZAJo&e=>) (5/29) “Astronomers using NASA’s Transiting Exoplanets Survey Satellite (TESS) have discovered a compact three-planet system around the sixth-magnitude star HR 858. An artist’s conception of the HR 858 planetary system. Image credit: Sci-News.com. The newly-discovered planets orbit HR 858, a slightly-evolved F-type star, which is also a member of a visual binary system.”

## Rogue 'Forbidden' Planet Defies Its Star's Death Zone

CNET News <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D027-2D3c1-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=fQAzhHrPVs1siC08-plD5hqCN1ci1BjPkDvKhKVbnyA&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D027-2D3c1-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=fQAzhHrPVs1siC08-plD5hqCN1ci1BjPkDvKhKVbnyA&e=>) (5/29, Kooser) "Kevlar. Diamonds. Arnold Schwarzenegger. Planet NGTS-4b. That's a short list of things that are tough. An international team led by astronomers with the University of Warwick in the UK issued an announcement this week that sounds like a summary for a Star Trek episode: 'The 'Forbidden' Planet has been found in the 'Neptunian Desert.'"

## Jupiter's Gigantic Great Red Spot Storm System May Be Starting To Unravel

Tech Times <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D028-2Da86-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=oHAWwFEH4B5u17wEKJu6KeDBTCADyf8sQ\\_b8GYEirNA&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D028-2Da86-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=oHAWwFEH4B5u17wEKJu6KeDBTCADyf8sQ_b8GYEirNA&e=>) (5/29, Samson) "Jupiter's Great Red Spot is shrinking. Amateur astronomers from around the world report observing chunks of the giant anti-cyclone peel away. Anthony Wesley from Australia has taken a photograph of a plume of gas stretching more than 10,000 kilometers long, detach from the Great Red Spot on May 19. He shared that large sections are being peeled away every week or so from the largest storm in the solar system."

## Pluto Is Coloured Red By Ammonia Spewing From Underneath Its Surface

New Scientist <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D029-2Db03-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=ulx99zVCBTpgcQhx2cDvflT3Ce2VRz\\_WLJ\\_KCyjU\\_xl&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D029-2Db03-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=ulx99zVCBTpgcQhx2cDvflT3Ce2VRz_WLJ_KCyjU_xl&e=>) (5/29, Crane) "NASA's New Horizons spacecraft spotted the signatures of ammonia in ice on the surface of Pluto, which might be responsible for turning parts of its surface red. In space, ammonia doesn't last long – it is easily broken up by ultraviolet light and charged particles from the sun, as well as cosmic rays from elsewhere in the galaxy."

## On Icy Pluto, Volcanoes May Spout Liquid Water

SPACE <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D02a-2D6fe-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=0rUZuVQ3DwXBRkFWxg0-osRVbWxNcnyEYKtbk9CUPEI&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D02a-2D6fe-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=0rUZuVQ3DwXBRkFWxg0-osRVbWxNcnyEYKtbk9CUPEI&e=>) (5/29) "A whiff of ammonia in reddish ices on Pluto may be evidence of recent geological activity on the dwarf planet, with liquid water spewing out from Pluto's depths like molten lava would on Earth, a new study finds. These findings suggest that Pluto may harbor at least some features favorable to the evolution of life, researchers said. Scientists analyzed data that NASA's New Horizons probe gathered during its flyby of the dwarf planet in 2015. In this data, they found evidence of ammonia on Pluto's surface in areas that previous research suggested had experienced tectonic activity."

## Icy Volcanoes On Pluto May Have Spewed Organic-rich Water

Science News <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D02b-2Df3f-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=0rUZuVQ3DwXBRkFWxg0-osRVbWxNcnyEYKtbk9CUPEI&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D02b-2Df3f-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=0rUZuVQ3DwXBRkFWxg0-osRVbWxNcnyEYKtbk9CUPEI&e=>)

3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=CGD\_hhtK-f\_t2pa4WYslhaOTDu2QflFNU7wCGd1qpFY&e=> (5/29, Grossman) “Red ice found on Pluto suggests the dwarf planet recently spewed fountains of water into space. And it hints at complex — and possibly organic — chemistry in Pluto’s salty subsurface sea, researchers report May 29 in Science Advances. ‘This was a huge surprise to all of us about Pluto,’ says planetary scientist Dale Cruikshank of the NASA Ames Research Center in Moffett Field, Calif. ‘It means there are lots of surprises waiting to be uncovered in that part of the solar system.’”

#### 18 New Earth-Size Exoplanets Pop Up In Old Kepler Planet-Hunting Data

SPACE <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D02c-2D6c0-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=Se8lv1ui5BDKkl0ZlbaStqQhQpE8B2-FsXkuSMXcQOQ&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D02c-2D6c0-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=Se8lv1ui5BDKkl0ZlbaStqQhQpE8B2-FsXkuSMXcQOQ&e=>) (5/29) “Scientists scouring old Kepler Space Telescope data have tracked down 18 more relatively small exoplanets imaged by the famed planet-hunting observatory. While most of the planets orbit close to their parent stars and have scorching surface temperatures of up to about 1,830 degrees Fahrenheit (1,000 degrees Celsius), one world orbits a small red dwarf star in an area called the “habitable zone.” That term is usually defined as the area around a star where a rocky planet could host liquid water on its surface. However, life is never a slam-dunk, and on this world, it would be particularly tricky because red dwarfs put out killer X-rays that could make living on nearby planets a challenge, even for microbes.”

#### 18 Small New Worlds Found In Old Planet-Hunting Data

Scientific American <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D02d-2Da14-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=WLZox2XWvg9CBFm-J1Fi\\_6GXTRoayx1cUbAd40zeKxI&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D02d-2Da14-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=WLZox2XWvg9CBFm-J1Fi_6GXTRoayx1cUbAd40zeKxI&e=>) (5/29, Howell) “Scientists scouring old Kepler Space Telescope data have tracked down 18 more relatively small exoplanets imaged by the famed planet-hunting observatory. While most of the planets orbit close to their parent stars and have scorching surface temperatures of up to about 1,830 degrees Fahrenheit (1,000 degrees Celsius), one world orbits a small red dwarf star in an area called the “habitable zone.” That term is usually defined as the area around a star where a rocky planet could host liquid water on its surface. However, life is never a slam-dunk, and on this world, it would be particularly tricky because red dwarfs put out killer X-rays that could make living on nearby planets a challenge, even for microbes.”

#### NASA Reveals How Objects Travel At The Speed Of Light In STUNNING New Image

Daily Express (UK) <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D02e-2D1d7-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=MxYsfsYEI7F4vlGoIXj8lghmox-Pi-c4eFtyZXkUms&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D02e-2D1d7-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=MxYsfsYEI7F4vlGoIXj8lghmox-Pi-c4eFtyZXkUms&e=>) (5/29, McLoughlin) “The new graphic marks the 100th anniversary since a solar eclipse demonstrated Albert Einstein’s theory of general relativity. Before that Einstein had also developed the theory of special relativity which showed that light particles travel through a vacuum at a constant pace. Thanks to that theory, it has now revolutionised how we view the course of light and its three ways of acceleration. In the new graphic NASA scientists showed light accelerates due to electromagnetic fields, magnetic explosions and wave-particle interactions.”

## NASA Is Running A Competition To Figure Out How To Settle The Galaxy

New Scientist <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D02f-2D605-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=XrIYswl4JaT7qaPLnrYe3dLI2MuRMZu6sUOI137OkO8&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D02f-2D605-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=XrIYswl4JaT7qaPLnrYe3dLI2MuRMZu6sUOI137OkO8&e=>) (5/29, Whyte) “Ten thousand years from now, humanity decides to settle 100,000 stars in the galaxy, and the race is on to see who can spread through our cosmic neighbourhood the fastest. That’s the premise of the 10th Global Trajectory Optimisation Competition (GTOCX) currently being run by NASA, in which teams of astrophysicists and engineers attempt to plot out a course for the human race to populate the stars.”

### Space Tech

## NASA Is Awarded \$125 Million To Develop Nuclear Rocket Propulsion

Digital Trends <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D030-2D4e6-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=E2C2zJMIpuvWC5LXwLicGFgmbtCGWFIgISQfohx7xXQ&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D030-2D4e6-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=E2C2zJMIpuvWC5LXwLicGFgmbtCGWFIgISQfohx7xXQ&e=>) (5/29) “NASA has been awarded a sum of \$125 million to develop nuclear thermal propulsion systems for its future spacecraft. First reported by Space.com, the award was given as part of a total \$22.3 billion of funding for NASA in a commerce, justice, and science (CJS) appropriations bill approved by the House Appropriations Committee this month.”

## NASA Releases Proposals From 12 Firms For Commercial Economy LEO

Aerospace Technology <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D031-2D60b-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=4dh01bVPbQ7MVydeQYqw\\_pxaTYw50vkmHb0IRX3XDhg&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D031-2D60b-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=4dh01bVPbQ7MVydeQYqw_pxaTYw50vkmHb0IRX3XDhg&e=>) (5/28) “Nasa has released short proposals from 12 firms to explore ways of creating a viable commercial economy in low-Earth orbit (LEO). Nasa selected the companies to complete studies about the commercialisation of LEO and the International Space Station. The project is aimed at assessing the potential growth of a low-Earth orbit economy and how to stimulate private demand for commercial human spaceflight.”

## NASA Navigation Tech Shows Timing Really Is Everything

Space Daily <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D032-2D3b8-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=w18nTdarWWG\\_2knkeHhFCpaHSbSddv\\_Ysx3LzXlgcZQ&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D032-2D3b8-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=w18nTdarWWG_2knkeHhFCpaHSbSddv_Ysx3LzXlgcZQ&e=>) (5/30) “Without accurate timekeeping, space navigation would be impossible. As NASA goes forward to the Moon with the Artemis missions, precise measurements of time are key to mission success. To calculate where a spacecraft is in the solar system, NASA must measure the time it takes for electromagnetic waves traveling at the speed of light to flow between the spacecraft and known locations, like an antenna on Earth.”

### Various

## Turkish-American NASA Scientist Released From Turkish Prison

Washington Post <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D033-2Dca6-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=Abtlws5tIRflht4ZQzpyT4WJdPMiBIKgnrUt7kZdmtE&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D033-2Dca6-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=Abtlws5tIRflht4ZQzpyT4WJdPMiBIKgnrUt7kZdmtE&e=>) (5/29, Press) “Serkan Golge, a Turkish-American scientist imprisoned in Turkey for nearly three years, has been released. Morgan Ortagus, a U.S. State Department spokeswoman, welcomed the decision but declined to discuss why he was released. However, she told reporters Wednesday it was the ‘right thing to do.’”

## Turkey Frees US Scientist But Tensions Remain

Breitbart <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D034-2D4d1-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=CaKufKY-T3-vmTBQTiBULTDPTUL\\_rU6nbD2PYDBAEDk&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D034-2D4d1-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=CaKufKY-T3-vmTBQTiBULTDPTUL_rU6nbD2PYDBAEDk&e=>) (5/29) “Turkey on Wednesday released a NASA scientist with dual US-Turkish citizenship whose nearly three-year detention had soured relations, but the NATO allies remained divided over issues including Ankara’s purchase of a Russian missile system. Serkan Golge, a naturalized US citizen working for the US space agency in Houston, was arrested in July 2016 on a visit back to Turkey in the aftermath of a failed coup against President Recep Tayyip Erdogan.”

## Turkey Frees Former NASA Scientist From Prison: Ruling

Reuters <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D035-2D64f-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=VyenfmDi6PtBjZTI0elZWiy3-vkGTjfm\\_j7eu3wH--l&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D035-2D64f-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=VyenfmDi6PtBjZTI0elZWiy3-vkGTjfm_j7eu3wH--l&e=>) (5/29, Kucukgocmen) “Turkey has released Turkish-American, former NASA scientist Serkan Golge from jail with conditions, according to a court ruling seen by Reuters on Wednesday, in a step that could lead to an easing of tensions in Ankara’s relations with Washington. Golge was earlier this year found guilty of being a member of an armed terrorist organization and sentenced to seven and a half years in prison.”

## NASA Scientist Jailed In Turkey For Almost 3 Years Is Released

Fox News <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D036-2Dba9-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=lrSINSsQkWpWvGWcw5KSoQARXd6ykSGIBI3YAwUwRQw&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D036-2Dba9-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=lrSINSsQkWpWvGWcw5KSoQARXd6ykSGIBI3YAwUwRQw&e=>) (5/29, Miles) “Serkan Golge, a Turkish-American scientist imprisoned in Turkey for nearly three years, has been released. A Turkish-American scientist imprisoned in Turkey for nearly three years has been released, his wife told Fox News. NASA physicist and Houston resident Serkan Golge, a dual citizen, had been convicted over allegations of an association with the organization of Fetullah Gulen, a former political ally of Turkish President Tayyip Erdogan.”

## Turkey Frees U.S. NASA Scientist Serkan Golge After 2016 Arrest

Breitbart <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-)

3D2019053002nasa-26r-3Demail-2D491d-26l-3D037-2Ddd1-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=qIPV-4chl1SZsj\_AHZuwJcKp0Ju1oKJkScEr4mmFzbU&e=> (5/29) "The U.S. State Department announced the release Wednesday of a NASA scientist who was arrested in Turkey in 2016. State Department spokeswoman Morgan Ortagus said the United States welcomed the news of Serkan Golge's release from prison, during a news conference. 'We will continue to follow Mr. Golge's case closely along with those involving our own locally employed staff at mission Turkey,' Ortagus said."

#### Turkey Releases Detained NASA Scientist After Years In Prison

ABC News <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D038-2Df9d-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=akuJuvFXppw-89cA0vyr3thYAnRloHrrWxyz\\_PB9PNM&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D038-2Df9d-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=akuJuvFXppw-89cA0vyr3thYAnRloHrrWxyz_PB9PNM&e=>) (5/29) "Turkey has released Serkan Golge, a NASA scientist who the country accused of belonging to a terrorist organization. Golge, who has dual U.S.-Turkish citizenship, was visiting his birth country with his family in 2016 when Turkish officials arrested him in the wake of a failed coup, which Turkish leaders blamed on the self-exiled U.S. cleric Fethullah Gulen."

#### NASA Scientist Serkan Golge Released From Turkey Prison, But Can't Leave Country

NBC News <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D039-2D5fc-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=2m0rNNT0pC7CqK\\_HdD97tZWzgA0V5Bbbw7Pi1i09E7A&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D039-2D5fc-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=2m0rNNT0pC7CqK_HdD97tZWzgA0V5Bbbw7Pi1i09E7A&e=>) (5/30) "Serkan Golge, a Turkish-American scientist imprisoned in Turkey for nearly three years, has been released. Morgan Ortagus, a State Department spokeswoman, declined to discuss why he was released. However, she told reporters Wednesday it was the 'right thing to do.'"

#### Can Beauty Pageants Prepare You For A NASA Career? League City Engineer Says Yes

Houston Chronicle <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D03a-2D502-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=VhSK15IcUZRbntUyLlznPXZpodWVTrlhkUZ-J5e0iqM&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D03a-2D502-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=VhSK15IcUZRbntUyLlznPXZpodWVTrlhkUZ-J5e0iqM&e=>) (5/29, Maines) "Want to succeed as an engineer? A good first step might be to enter a beauty pageant, suggests Paromita Mitra, a former Miss Mississippi-USA who helps design NASA's next-generation space suits at Johnson Space Center. 'I don't think anything could have prepared me better,' said the 27-year-old, who lives in League City but was born in Dhaka, Bangladesh."

#### 100 Years Ago Today, A Total Solar Eclipse Experiment Confirmed Einstein's Theory Of Relativity

SPACE <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D03b-2D563-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=vvaFjnYidwtxbWzMdOOcNzmTsXVwj-qSvp8Am5fXPk4&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D03b-2D563-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=vvaFjnYidwtxbWzMdOOcNzmTsXVwj-qSvp8Am5fXPk4&e=>) (5/29) "One hundred years ago today, in the wake of the first World War, a British astronomer watched a solar eclipse for signs that a German physicist may have

been right about warps in the universe. The bold new theoretical ideas belonged to Albert Einstein, whose last name is synonymous with genius. But his name didn't always produce that feeling: People doubted that his theories described reality, and it took a special experiment during a solar eclipse to cement Einstein as a physics legend."

#### Adam Savage Teams Up With Peter Jackson And NASA For Savage Builds TV Series

CNET News <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D03c-2D738-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=0xa23951vdNLJJeQtbo4BFXHZVg-UdVvZBIR9oMtnlc&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D03c-2D738-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=0xa23951vdNLJJeQtbo4BFXHZVg-UdVvZBIR9oMtnlc&e=>) (5/29, Burton) "If you've been missing the science hijinks of MythBusters, the former host Adam Savage has returned to TV with a new maker series called Savage Builds. The eight-episode Science Channel series features Savage making epic creations like a 3D-printed titanium suit of armor inspired by the Iron Man films and actually flies. Each Savage Builds episode will focus on one project as Savage collaborates with experts, colleagues and friends who include filmmaker Peter Jackson, actor Gary Oldman, and former MythBusters cast member Tory Belleci, to name a few."

#### Study Input Informs NASA Course For A Vibrant Future Commercial Space Economy

Space Daily <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D03d-2D15c-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=GfLTM2JB4-rg6LQiMWiop39fl6cr\\_IA4DKDQCKi5Frg&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D03d-2D15c-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=GfLTM2JB4-rg6LQiMWiop39fl6cr_IA4DKDQCKi5Frg&e=>) (5/30) "New insights from companies in the growing space economy are helping NASA chart a course for the future of commercial human spaceflight in low-Earth orbit. Input the companies provided to NASA as part of the studies will inform NASA's future policies to support commercial activities that enable a robust low-Earth orbit economy. NASA selected the following companies to complete studies about the commercialization of low-Earth orbit and the International Space Station, assessing the potential growth of a low-Earth orbit economy and how to best stimulate private demand for commercial human spaceflight."

#### A New Space Race

Houston Chronicle <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D03e-2D008-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=5Ro8R2BwtRAvnhxvg7EmgTvalAzCP6JL6Bmy2AGtJfw&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D03e-2D008-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=5Ro8R2BwtRAvnhxvg7EmgTvalAzCP6JL6Bmy2AGtJfw&e=>) (5/30, Leinfelder) "Nearly 50 years have passed since Neil Armstrong and Buzz Aldrin became the first humans to walk on the moon. The July 20, 1969, moon landing changed the world and forever changed Houston. Our 'Mission Moon' project will explore how the country came together to fulfill President John F. Kennedy's goal of reaching the lunar surface by 1970, NASA's bold missions – and crippling tragedies – since that historic day, the future of space exploration and the fate of Houston as America's 'Space City.'"

#### Other

#### UNOOSA And ESA Join Forces To Address The Space Debris Challenge

SpaceRef <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D03f-2D36b-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D03f-2D36b-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD)



8-mHkTTiYCEf5ROyus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=vzEhGhVVSZSSn42qWCO142JcY4B04VlOeVnxL\_-TbQ&e=> (5/29) “UN Office for Outer Space Affairs (UNOOSA) and the European Space Agency (ESA) signed a joint statement on their wish to cooperate on the challenge of space debris. The two organisations agreed to work together to increase global understanding and the consolidation of knowledge on space debris; to disseminate information on the latest research on space debris; to support the implementation of existing space debris mitigation guidelines; and to strengthen international cooperation and global awareness on space debris mitigation.”

#### Russia Wants To Send Crewed Mission To Lunar Surface By 2030

Tech Times <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D040-2D49d-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=AmQ0MbkdkYOVfzcpgr1TqTQ1gVKQUCHtHxatWPkGW9g&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D040-2D49d-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=AmQ0MbkdkYOVfzcpgr1TqTQ1gVKQUCHtHxatWPkGW9g&e=>) (5/29, Samson) “Russia is heading to the moon. Roscosmos, Russia’s state space corporation, is aiming to send cosmonauts to the lunar surface by 2030s. On Thursday, May 23, Dmitry Rogozin spoke to students at the Moscow University about future plans, including a manned mission to the moon. Ars Technica was able to obtain the copy of the slide deck used during the presentation.”

#### China’s First Mars Spacecraft Undergoing Integration For 2020 Launch

Space News <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D041-2Db13-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=dla8nTri-c638coS9WXJg56UiedYWPp55b7DYckM6Q&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D041-2Db13-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=dla8nTri-c638coS9WXJg56UiedYWPp55b7DYckM6Q&e=>) (5/29) “China remains on schedule to ready its first independent mission to Mars in time for a short launch window in mid-2020, according to a leading space official. ‘Mars 2020 mission spacecraft is undergoing integration,’ Wang Chi, director of the National Space Science Center (NSSC) in Beijing, told SpaceNews in a rare update on the mission.”

#### Here’s Why Astronomers Are So Worried About SpaceX’s Planned ‘Megaconstellation’

LiveScience <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D042-2D3fa-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=8\\_5PcRrfnqhlcj-cCNII\\_l6vC6r4gyYeYynrWvFwJ9w&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D042-2D3fa-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=8_5PcRrfnqhlcj-cCNII_l6vC6r4gyYeYynrWvFwJ9w&e=>) (5/29) “SpaceX put 60 Starlink satellites in space May 23, the first little chunk of an eventual 12,000-satellite-strong ‘megaconstellation’ that the private company plans to place in orbit. Not long after the launch, observers and astronomers noticed something: This train of five dozen objects looked really bright overhead — unusually bright for artificial satellites. And this light show has many astronomers worried.”

#### SpaceX Launches First Volley Of Starlink Satellites

Sky & Telescope <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D043-2Dacd-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=lu720V2eL-T3MzdbFi0z6Lj-d2ZpUkr\\_5s1vw4MTRoA&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D043-2Dacd-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=lu720V2eL-T3MzdbFi0z6Lj-d2ZpUkr_5s1vw4MTRoA&e=>) (5/29) “The 60 Starlink satellites parading across the sky make an incredible sight, but some skywatchers wonder at what cost to the night. It’s a safe bet to say no one had ever seen anything like it — 60 satellites chugging across the sky in a straight line like some outer space choo-choo. We’re grateful that Dutch satellite

sleuth Marco Langbroek captured video. If nothing else, it will calm those who were convinced they were seeing a UFO. But as is nearly always the case, there was a more prosaic explanation: Elon Musk, SpaceX founder, sent the first volley of what will become a megaconstellation of 12,000 Starlink satellites to provide broadband internet service for under served areas of the globe.”

#### Companies Like Boeing And Blue Origin Looking Into Building Privately Owned Space Stations

Tech Times <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D044-2Deba-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=myO1lqUePwyUYRYCyfux8q2mvo9F40a2lc-hE0jDkuk&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D044-2Deba-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=myO1lqUePwyUYRYCyfux8q2mvo9F40a2lc-hE0jDkuk&e=>) (5/29, Samson) “The private space industry wants to turn the low-orbit into a commercial hub with habitats and platforms for future space travelers. NASA recently released short proposal from 12 companies, including Jeff Bezos’s Blue Origin, Lockheed Martin, and Boeing, about how to make space a destination for research and manufacturing. The space agency wanted these ideas in the hopes of transitioning Low Earth Orbit, or LEO, operations to the commercial sector in the next decade.”

#### Building A Rocket In A Garage To Take On SpaceX And Blue Origin

CNET News <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D045-2D90c-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=8CbyvTf36QJSIX1\\_4WjgJllg6Wklor997ypZnG3QY8E&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D045-2D90c-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=8CbyvTf36QJSIX1_4WjgJllg6Wklor997ypZnG3QY8E&e=>) (5/29, Ryan) “Along Australia’s northeastern edge, the Pacific Ocean laps at sparkling yellow sands. This pristine 35 miles of shoreline is known as the Gold Coast, and over 13 million people visit every year. It’s full of postcard-perfect beaches and home to the southern hemisphere’s biggest collection of theme parks. Drive 30 minutes north, towards the quiet suburban town of Pimpama, and you might as well be on another planet. Once covered in strawberry fields, Pimpama lies just off the motorway and is now dotted by spacious, modern houses. The only tourist attractions are a go-kart circuit and a “skate park” – a lonely double half-pipe in an empty field.”

#### Japan Bombed An Asteroid And Now It’s Preparing To Collect The Debris

CNET News <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D046-2D7d8-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=eXPljYY9B5kyDfVG8sMvncn2dFOhSBaeuxCq4xvWLMR4&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019053002nasa-26r-3Demail-2D491d-26l-3D046-2D7d8-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=GwVcsxc7JY-u6GDv4uGZSsEOBvgUIFw4fh9D-vmYXyk&s=eXPljYY9B5kyDfVG8sMvncn2dFOhSBaeuxCq4xvWLMR4&e=>) (5/29, Ryan) “Japan’s asteroid-hunter, Hayabusa2, recently blew a nice, new crater on the desolate gray surface of the asteroid Ryugu. But what good is blowing a hole in an asteroid if you can’t go down and grab some of the debris? Hayabusa2 has already successfully sampled the surface of Ryugu, but the material it nabbed was resting on the surface of the asteroid. To gain a better understanding of the material deeper below, they need to grab another.”

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n1P5Guiw0gDRI&s=xrSLXaBdPKMjDd8vAFQOn7WsOAXjUxGTH6o-uC\_DnV0&e=> (4/9) "NASA's Parker Solar Probe successfully completed its second close approach to the Sun, the space agency has announced. By the end of last week, the spacecraft was entering the outbound phase of its second orbit around the Sun, adding another milestone to the mission. The Parker Solar Probe tied its own 'closest' record by coming within 15 million miles of the Sun."

#### NASA Launches Two Rockets Studying Auroras

Phys (UK) <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019041002nasa-26r-3Demail-2De723-26l-3D004-2D4e4-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=SKfTpXa85-EUopBv\\_s2mCYqVabhpc-n1P5Guiw0gDRI&s=29OEZjdc8B0dy\\_3gD4Q24\\_QUOTNf0O8eJEURYzZD32c&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019041002nasa-26r-3Demail-2De723-26l-3D004-2D4e4-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=SKfTpXa85-EUopBv_s2mCYqVabhpc-n1P5Guiw0gDRI&s=29OEZjdc8B0dy_3gD4Q24_QUOTNf0O8eJEURYzZD32c&e=>) (4/9) "NASA successfully launched the Auroral Zone Upwelling Rocket Experiment or AZURE mission on April 5 from the Andøya Space Center in Norway. Two Black Brant XI-A sounding rockets were launched at 6:14 and 6:16 p.m. EDT on April 5 carrying scientific instruments for studying the energy exchange within an aurora."

#### NASA Launches Student Rocket Challenge

Fox News <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019041002nasa-26r-3Demail-2De723-26l-3D005-2D8d0-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=SKfTpXa85-EUopBv\\_s2mCYqVabhpc-n1P5Guiw0gDRI&s=0u7Y3z50YyQdvLm8M1LPI\\_AG7R5Iuh6oSdfV5fRsD30&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019041002nasa-26r-3Demail-2De723-26l-3D005-2D8d0-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=SKfTpXa85-EUopBv_s2mCYqVabhpc-n1P5Guiw0gDRI&s=0u7Y3z50YyQdvLm8M1LPI_AG7R5Iuh6oSdfV5fRsD30&e=>) (4/9, Watson) "As NASA celebrates the 50th anniversary of the Apollo landing on the moon, it added drones and rovers to its annual student launch competition. Nearly three dozen student teams from colleges, universities, high schools and some middle schools from around the country flocked to Huntsville, Ala., the location of the Marshall Space Flight Center, so their rockets could take flight. The gathering during the first weekend of April was the culmination of a months-long process of designing, analyzing, building and testing rockets to live up to NASA's standard for a safe takeoff."

#### Flying Cars Could Save Us From Climate Change

CNN <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019041002nasa-26r-3Demail-2De723-26l-3D006-2D506-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=SKfTpXa85-EUopBv\\_s2mCYqVabhpc-n1P5Guiw0gDRI&s=07uBeMFA7l-s1PAmPbYigrz61QNF7SucpnWG1LU0HU&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019041002nasa-26r-3Demail-2De723-26l-3D006-2D506-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=SKfTpXa85-EUopBv_s2mCYqVabhpc-n1P5Guiw0gDRI&s=07uBeMFA7l-s1PAmPbYigrz61QNF7SucpnWG1LU0HU&e=>) (4/9, Christensen) "Maybe the Jetsons were climate change activists? A new study shows that the cartoon family was on to something when they used a flying car for transportation. Several companies and even agencies such as NASA have been scrambling to create flying cars, hoping to launch the service in the next decade, and that may be a part of the answer to help curb climate change, according to a new study."

#### Israeli Moon Lander Poised For Lunar Touchdown Thursday

SPACE <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019041002nasa-26r-3Demail-2De723-26l-3D007-2D05d-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=SKfTpXa85-EUopBv\\_s2mCYqVabhpc-n1P5Guiw0gDRI&s=2CXZAdVcahGCLot6Dm6yIA3lgDftYDLU41wvVJpkQio&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019041002nasa-26r-3Demail-2De723-26l-3D007-2D05d-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=SKfTpXa85-EUopBv_s2mCYqVabhpc-n1P5Guiw0gDRI&s=2CXZAdVcahGCLot6Dm6yIA3lgDftYDLU41wvVJpkQio&e=>) (4/9) "Israel's robotic Beresheet moon lander is nearing its moment of truth: an epic lunar-touchdown attempt scheduled to occur between 3 p.m. and 4 p.m. EDT (1900 and 2000 GMT) on Thursday (April 11). If Beresheet succeeds, Israel will become just the fourth nation to land a spacecraft softly on the moon, following the Soviet Union, the United States and China."

## Flight

### Flying Cars Could Save Us From Climate Change

CNN <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019041002nasa-26r-3Demail-2De723-26l-3D008-2D4a0-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=SKfTpXa85-EUopBv\\_s2mCYqVabhpc-n1P5Guiw0gDRI&s=p2Nhszpug0CzqF2THv0e3hoteakBd8BDADGpmJLueKo&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019041002nasa-26r-3Demail-2De723-26l-3D008-2D4a0-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=SKfTpXa85-EUopBv_s2mCYqVabhpc-n1P5Guiw0gDRI&s=p2Nhszpug0CzqF2THv0e3hoteakBd8BDADGpmJLueKo&e=>) (4/9, Christensen) “Maybe the Jetsons were climate change activists? A new study shows that the cartoon family was on to something when they used a flying car for transportation. Several companies and even agencies such as NASA have been scrambling to create flying cars, hoping to launch the service in the next decade, and that may be a part of the answer to help curb climate change, according to a new study.”

### Flying Cars Similar To Those In The Jetsons ‘Could Soon Be Used On Journeys’

Daily Mirror (UK) <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019041002nasa-26r-3Demail-2De723-26l-3D009-2D2d1-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=SKfTpXa85-EUopBv\\_s2mCYqVabhpc-n1P5Guiw0gDRI&s=a4F7Z\\_IMJYpNYOe0-7dSNUX4HvXRj-rdlcjuNf5GSmQ&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019041002nasa-26r-3Demail-2De723-26l-3D009-2D2d1-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=SKfTpXa85-EUopBv_s2mCYqVabhpc-n1P5Guiw0gDRI&s=a4F7Z_IMJYpNYOe0-7dSNUX4HvXRj-rdlcjuNf5GSmQ&e=>) (4/9, von Radowitz) “Flying cars similar to those depicted in The Jetsons cartoon could be the future for longer journeys, a study has found. In the 1960s sci-fi animation, the Jetsons and their neighbours routinely zoom about in family-sized airborne vehicles. Several aerospace companies, including Airbus and Boeing, as well as the US space agency Nasa, are now working towards making flying cars a reality.”

### A Jetsons Future? Assessing The Role Of Flying Cars In Sustainable Mobility

Science Daily <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019041002nasa-26r-3Demail-2De723-26l-3D00a-2D304-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=SKfTpXa85-EUopBv\\_s2mCYqVabhpc-n1P5Guiw0gDRI&s=CohVUpaVB5DvTpf3oF-Sm4qC41PCUvkTM6SSW3NF4jg&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019041002nasa-26r-3Demail-2De723-26l-3D00a-2D304-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=SKfTpXa85-EUopBv_s2mCYqVabhpc-n1P5Guiw0gDRI&s=CohVUpaVB5DvTpf3oF-Sm4qC41PCUvkTM6SSW3NF4jg&e=>) (4/9) “In the 1960s animated sitcom The Jetsons, George Jetson commutes to work in his family-size flying car, which miraculously transforms into a briefcase at the end of the trip. A new study of the environmental sustainability impacts of flying cars, formally known as electric vertical takeoff and landing aircraft, or VTOLs, finds that they wouldn’t be suitable for a Jetsons-style short commute. ... Several aerospace corporations and startup companies – Airbus, Boeing, Joby Aviation and Lilium, for example – and agencies such as NASA have developed VTOL prototypes.”

## Earth

### NASA Launches Two Rockets Studying Auroras

Phys (UK) <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019041002nasa-26r-3Demail-2De723-26l-3D00b-2Dba2-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=SKfTpXa85-EUopBv\\_s2mCYqVabhpc-n1P5Guiw0gDRI&s=DQEROKZmmi1JY1Lw7jBg7kMUP4o53FpUgHm\\_Q-zyuEQ&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019041002nasa-26r-3Demail-2De723-26l-3D00b-2Dba2-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=SKfTpXa85-EUopBv_s2mCYqVabhpc-n1P5Guiw0gDRI&s=DQEROKZmmi1JY1Lw7jBg7kMUP4o53FpUgHm_Q-zyuEQ&e=>) (4/9) “NASA successfully launched the Auroral Zone Upwelling Rocket Experiment or AZURE mission on April 5 from the Andøya Space Center in Norway. Two Black Brant XI-A sounding rockets were launched at 6:14 and 6:16 p.m. EDT on April 5 carrying



scientific instruments for studying the energy exchange within an aurora.”

#### NASA Says It Caused Otherworldly Lights In The Arctic Circle

Vice <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019041002nasa-26r-3Demail-2De723-26l-3D00c-2Dd7a-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=SKfTpXa85-EUopBv\\_s2mCYqVabhpc-n1P5Guiw0gDRI&s=3ZobzyVJVuO\\_sDFecvhUoY4qSCQGGFf3Yp3VhvyTzok&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019041002nasa-26r-3Demail-2De723-26l-3D00c-2Dd7a-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=SKfTpXa85-EUopBv_s2mCYqVabhpc-n1P5Guiw0gDRI&s=3ZobzyVJVuO_sDFecvhUoY4qSCQGGFf3Yp3VhvyTzok&e=>) (4/9) “NASA set the Arctic Circle ablaze last week with colorful blue vapor clouds that were seen above parts of Finland and Norway. And yes, they did cause some people to ask: Aliens? The apparition was caused by a NASA rocket launch that discharged ‘gas tracers’ into the sky to probe the mechanisms behind auroras.”

#### NASA Confirms ‘Strange Blue Lights’ Over Arctic Were Rockets, Not Aliens

New York Post <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019041002nasa-26r-3Demail-2De723-26l-3D00d-2Ddb9-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=SKfTpXa85-EUopBv\\_s2mCYqVabhpc-n1P5Guiw0gDRI&s=vqvPH-hMj7tD1c7mo7wemnQXKIQW-a9frrqsUGJkSY&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019041002nasa-26r-3Demail-2De723-26l-3D00d-2Ddb9-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=SKfTpXa85-EUopBv_s2mCYqVabhpc-n1P5Guiw0gDRI&s=vqvPH-hMj7tD1c7mo7wemnQXKIQW-a9frrqsUGJkSY&e=>) (4/9, Pettit, Sun) “NASA has quelled fears of an alien invasion after strange pulsating lights were spotted over the Arctic. Mesmerizing videos show glowing clouds shimmering over northern Sweden that some online commenters claimed was a UFO light show. But the space conundrum has a far simpler explanation.”

#### NASA Launches Two Sounding Rockets To Study Auroral Winds: AZURE Mission

Sci-News <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019041002nasa-26r-3Demail-2De723-26l-3D00e-2D54d-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=SKfTpXa85-EUopBv\\_s2mCYqVabhpc-n1P5Guiw0gDRI&s=E3a13UTq1NnE9rpcZIVztxSt00TSEwsxGZrps3qkTIs&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019041002nasa-26r-3Demail-2De723-26l-3D00e-2D54d-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=SKfTpXa85-EUopBv_s2mCYqVabhpc-n1P5Guiw0gDRI&s=E3a13UTq1NnE9rpcZIVztxSt00TSEwsxGZrps3qkTIs&e=>) (4/9) “From the ground, the dance of the northern lights, or aurora borealis, can look peaceful. But those shimmering sheets of colored lights are the product of violent collisions between Earth’s atmosphere and particles from the Sun. Understanding the contribution that aurora make to the total amount of energy that enters and leaves Earth’s geospace system is one of the major goals of the NASA-funded AZURE (Auroral Zone Upwelling Rocket Experiment) mission.”

#### Mountain Glaciers Are Major Contributors To Rising Seas

Scientific American <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019041002nasa-26r-3Demail-2De723-26l-3D00f-2D838-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=SKfTpXa85-EUopBv\\_s2mCYqVabhpc-n1P5Guiw0gDRI&s=aP04AfMWtBpmU4ZdRNiE5u2ZMrgEObfk4qnrjTlqXLU&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019041002nasa-26r-3Demail-2De723-26l-3D00f-2D838-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=SKfTpXa85-EUopBv_s2mCYqVabhpc-n1P5Guiw0gDRI&s=aP04AfMWtBpmU4ZdRNiE5u2ZMrgEObfk4qnrjTlqXLU&e=>) (4/9, Harvey) “Melting mountain glaciers could account for nearly a third of the sea-level rise that’s occurred in the last 60 years, new research suggests. That makes their contributions to global ocean levels on par with the massive Greenland ice sheet and far more significant than Antarctica. ... ‘These mountain glaciers feed large populations,’ said Alex Gardner, a glacier expert at NASA’s Jet Propulsion Laboratory.”

#### NASA-NOAA Satellite Finds A More Circular Tropical Cyclone Wallace

Science World Report <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019041002nasa-26r-3Demail-2De723-26l-3D010-2Db13-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=SKfTpXa85-EUopBv\\_s2mCYqVabhpc-n1P5Guiw0gDRI&s=gGeXZGA3fnPkWP0uemZiJyNk3FgExxBsM9dD\\_7sANKg&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019041002nasa-26r-3Demail-2De723-26l-3D010-2Db13-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=SKfTpXa85-EUopBv_s2mCYqVabhpc-n1P5Guiw0gDRI&s=gGeXZGA3fnPkWP0uemZiJyNk3FgExxBsM9dD_7sANKg&e=>)> (4/9) "NASA-NOAA's Suomi NPP satellite passed over the Southern Indian Ocean and captured a visible image of what appeared to be a more organized Tropical Cyclone Wallace, off the coast of Western Australia. The Australian Bureau of Meteorology or ABM noted that only a High Seas Warning was in effect off the coast of Western Australia, as Wallace continues to track away from the coast."

## Humans in Space

### NASA Researchers Catalogue All Microbes And Fungi On ISS

Space Daily <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019041002nasa-26r-3Demail-2De723-26l-3D011-2D1e2-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=SKfTpXa85-EUopBv\\_s2mCYqVabhpc-n1P5Guiw0gDRI&s=rw09ueozE1FF7J6mRRNGWmHe739QWmnhOvavjrwBb8&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019041002nasa-26r-3Demail-2De723-26l-3D011-2D1e2-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=SKfTpXa85-EUopBv_s2mCYqVabhpc-n1P5Guiw0gDRI&s=rw09ueozE1FF7J6mRRNGWmHe739QWmnhOvavjrwBb8&e=>)> (4/9) "A comprehensive catalogue of the bacteria and fungi found on surfaces inside the International Space Station (ISS) is being presented in a study published in the open access journal Microbiome. Knowledge of the composition of the microbial and fungal communities on the ISS can be used to develop safety measures for NASA for long-term space travel or living in space. Dr Kasthuri Venkateswaran, at the NASA Jet Propulsion Laboratory (JPL), the corresponding author said: 'Specific microbes in indoor spaces on Earth have been shown to impact human health.'"

### Astronauts Whipped Up A Pizza Dinner To Prep For Spacewalk (And It Looks Tasty)

SPACE <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019041002nasa-26r-3Demail-2De723-26l-3D012-2D6bf-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=SKfTpXa85-EUopBv\\_s2mCYqVabhpc-n1P5Guiw0gDRI&s=oNowlBiTPlGKncHinNev7QjV5qwb3SpoOvG5Z\\_GSOQQ&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019041002nasa-26r-3Demail-2De723-26l-3D012-2D6bf-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=SKfTpXa85-EUopBv_s2mCYqVabhpc-n1P5Guiw0gDRI&s=oNowlBiTPlGKncHinNev7QjV5qwb3SpoOvG5Z_GSOQQ&e=>)> (4/9) "Make-your-own pizza is a dinner classic for a reason – and the meal's appeal holds in space, too. The four astronauts living on the U.S. side of the International Space Station made themselves pizza on Friday night (April 5) and shared photos of their customized dinners."

## Moon to Mars

### NASA Pledges To Send First Woman To The Moon In 2024

U.S. News & World Report <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019041002nasa-26r-3Demail-2De723-26l-3D013-2D7d7-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=SKfTpXa85-EUopBv\\_s2mCYqVabhpc-n1P5Guiw0gDRI&s=EGT9gsUYASS9N4HNXRWmB2VFfQHylX-U2gF5og7vDF4&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019041002nasa-26r-3Demail-2De723-26l-3D013-2D7d7-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=SKfTpXa85-EUopBv_s2mCYqVabhpc-n1P5Guiw0gDRI&s=EGT9gsUYASS9N4HNXRWmB2VFfQHylX-U2gF5og7vDF4&e=>)> (4/9) "NASA's mission back to the moon's surface in 2024 will have some notable differences from the last time Americans were there in 1972, including the presence of a female astronaut. 'The first woman will be an American on the surface of the moon in five years,' NASA Administrator Jim Bridenstine told a crowd at the Space Foundation's Space Symposium in Colorado on Tuesday."

## Bridenstine Outlines Two-Phase Approach For Accelerated Lunar Return

Space News <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019041002nasa-26r-3Demail-2De723-26l-3D014-2D00b-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=SKfTpXa85-EUopBv\\_s2mCYqVabhpc-n1P5Guiw0gDRI&s=K-OSPZGwYr-R4fQarwCpWUmmr\\_slZ42gKSNMSOXV3LI&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019041002nasa-26r-3Demail-2De723-26l-3D014-2D00b-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=SKfTpXa85-EUopBv_s2mCYqVabhpc-n1P5Guiw0gDRI&s=K-OSPZGwYr-R4fQarwCpWUmmr_slZ42gKSNMSOXV3LI&e=>) (4/9) “NASA Administrator Jim Bridenstine said the agency’s approach to moving up a human lunar landing from 2028 to 2024 will focus first on speed and then on sustainability. In a plenary speech at the 35th Space Symposium here April 9, Bridenstine said the new approach the agency is developing in response to the goal of a human lunar landing in five years announced by Vice President Mike Pence two weeks ago will involve many of the same elements of NASA’s original plans, but in a revised order.”

## NASA Calls For Lunar Ascent Module Ideas

Aviation Week <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019041002nasa-26r-3Demail-2De723-26l-3D015-2D4cb-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=SKfTpXa85-EUopBv\\_s2mCYqVabhpc-n1P5Guiw0gDRI&s=Xg3oEF0wE4srtJNbxReaGpeOAFXDgtV0asoEPSeMhlg&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019041002nasa-26r-3Demail-2De723-26l-3D015-2D4cb-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=SKfTpXa85-EUopBv_s2mCYqVabhpc-n1P5Guiw0gDRI&s=Xg3oEF0wE4srtJNbxReaGpeOAFXDgtV0asoEPSeMhlg&e=>) (4/9) “Two weeks after the Trump administration told NASA to clip four years off its planned 2020 human landing on the Moon, the space agency has issued a synopsis for a solicitation for a system that can carry crew from the lunar surface back to their Orion capsule. Many elements to accomplish a lunar landing in 2024 exist, though the timeline will have to be accelerated, NASA Administrator Jim Bridenstine said at the Space Symposium in Colorado Springs, Colorado, on April 9.”

## Astronauts On The Moon In 2024? US Can’t Do It Alone, NASA Chief Says

SPACE <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019041002nasa-26r-3Demail-2De723-26l-3D016-2D986-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=SKfTpXa85-EUopBv\\_s2mCYqVabhpc-n1P5Guiw0gDRI&s=ISkbH2kFq5NDfivzXfEG4ZRGLIICzruif2zUpaG\\_XHc&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019041002nasa-26r-3Demail-2De723-26l-3D016-2D986-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=SKfTpXa85-EUopBv_s2mCYqVabhpc-n1P5Guiw0gDRI&s=ISkbH2kFq5NDfivzXfEG4ZRGLIICzruif2zUpaG_XHc&e=>) (4/9) “NASA administrator Jim Bridenstine is confident that the agency will be able to land astronauts on the moon in 2024, but the U.S. won’t undertake the mission alone, he said during a speech here at the 35th Space Symposium on Tuesday (April 8). ‘Putting humans on the moon in 2024 is not an America-alone effort,’ Bridenstine told a jam-packed room of space industry officials. ‘We need all of our international partners. In fact, none of us can do what we want to achieve alone.’”

## NASA Rover Curiosity Fulfills Dream, Drills Into Mars Clay

CNET News <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019041002nasa-26r-3Demail-2De723-26l-3D017-2Dc14-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=SKfTpXa85-EUopBv\\_s2mCYqVabhpc-n1P5Guiw0gDRI&s=QYsyt3gtU6b5q2Mu26nchso3HXL8PqPjrEoWfgFM8Eo&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019041002nasa-26r-3Demail-2De723-26l-3D017-2Dc14-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=SKfTpXa85-EUopBv_s2mCYqVabhpc-n1P5Guiw0gDRI&s=QYsyt3gtU6b5q2Mu26nchso3HXL8PqPjrEoWfgFM8Eo&e=>) (4/9, Kooser) “The Curiosity rover is living its best life on Mars. NASA chose the Gale Crater as the vehicle’s stomping ground in part because of the siren call of the crater’s ‘clay-bearing unit.’ The rover has now finally drilled into that area, nearly seven years after landing on the red planet. ‘Don’t let your dreams be dreams,’ the rover team tweeted. ‘I finally got beneath the surface of those clays. Science to come.’”

## Solar System and Beyond

## NASA Parker Solar Probe Survives Its Second Close Flyby Of The Sun

SlashGear <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019041002nasa-26r-3Demail-2De723-26l-3D018-2D6ed-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=SKfTpXa85-EUopBv\\_s2mCYqVabhpc-n1P5Guiw0gDRI&s=C2ULHkTmYSUpNcNV3-AK0YSS-R2vIUUj3PYBWEy3dFE&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019041002nasa-26r-3Demail-2De723-26l-3D018-2D6ed-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=SKfTpXa85-EUopBv_s2mCYqVabhpc-n1P5Guiw0gDRI&s=C2ULHkTmYSUpNcNV3-AK0YSS-R2vIUUj3PYBWEy3dFE&e=>) (4/9) "NASA's Parker Solar Probe successfully completed its second close approach to the Sun, the space agency has announced. By the end of last week, the spacecraft was entering the outbound phase of its second orbit around the Sun, adding another milestone to the mission. The Parker Solar Probe tied its own 'closest' record by coming within 15 million miles of the Sun."

## NASA's Mission To 'Touch The Sun' Just Hit Another Major Milestone

MSN (UK) <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019041002nasa-26r-3Demail-2De723-26l-3D019-2D2cb-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=SKfTpXa85-EUopBv\\_s2mCYqVabhpc-n1P5Guiw0gDRI&s=oPr9BhU0GPqG-G7WY2nM9Cp-TmKRR3lxGAnfi7KnLsA&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019041002nasa-26r-3Demail-2De723-26l-3D019-2D2cb-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=SKfTpXa85-EUopBv_s2mCYqVabhpc-n1P5Guiw0gDRI&s=oPr9BhU0GPqG-G7WY2nM9Cp-TmKRR3lxGAnfi7KnLsA&e=>) (4/9) "In 2018, NASA launched a mission to do something that scientists have never done before. The Parker Solar Probe mission is truly the first of its kind, venturing closer to our star than any spacecraft has ever dared, and it's already broken a number of records. Now, the spacecraft is continuing its incredible journey by completing its second close approach to the Sun, bringing it to the record-setting distance it achieved during its first pass. As NASA explains in a new blog post, scientists are eager to examine the scientific data the probe is gathering during time closest to the Sun, and thus far everything appears to be going as planned."

## Solar Winds, Polar Heat Explains Jupiter's Warming Atmosphere

UPI <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019041002nasa-26r-3Demail-2De723-26l-3D01a-2Daf4-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=SKfTpXa85-EUopBv\\_s2mCYqVabhpc-n1P5Guiw0gDRI&s=97KA0JSqli-QhofqRT7dZuiiJOKWWA9\\_\\_CCm\\_aaC-l0&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019041002nasa-26r-3Demail-2De723-26l-3D01a-2Daf4-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=SKfTpXa85-EUopBv_s2mCYqVabhpc-n1P5Guiw0gDRI&s=97KA0JSqli-QhofqRT7dZuiiJOKWWA9__CCm_aaC-l0&e=>) (4/9, Hays) "Solar wind-fueled polar auroras are heating up Jupiter's atmosphere to greater depths than previously estimated. 'The solar wind impact at Jupiter is an extreme example of space weather,' James Sinclair, researcher at NASA's Jet Propulsion Laboratory, said in a news release. 'We're seeing the solar wind having an effect deeper than is normally seen.'"

## Jupiter's Poles Shown Heating Up In Incredible NASA Images

Fox News <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019041002nasa-26r-3Demail-2De723-26l-3D01b-2Da68-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=SKfTpXa85-EUopBv\\_s2mCYqVabhpc-n1P5Guiw0gDRI&s=OqaZUTuK1UdSAQBZbIth0BdP53SXEg9ftLi7bcMJcPQ&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019041002nasa-26r-3Demail-2De723-26l-3D01b-2Da68-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=SKfTpXa85-EUopBv_s2mCYqVabhpc-n1P5Guiw0gDRI&s=OqaZUTuK1UdSAQBZbIth0BdP53SXEg9ftLi7bcMJcPQ&e=>) (4/9, Ciaccia) "No, that's not a faraway alien world you're looking at. That's an infrared image of Jupiter and its poles, courtesy of NASA. NASA's JPL has released images of the gas giant showing the impact that solar winds are having on the planet's poles, which are causing a hotter atmosphere than previously thought."

## Extreme Space Weather Is Making Jupiter Even Hotter

New York Post <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019041002nasa-26r-3Demail-2De723-26l-3D01c-2Db4d-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=SKfTpXa85-EUopBv\\_s2mCYqVabhpc-n1P5Guiw0gDRI&s=OqaZUTuK1UdSAQBZbIth0BdP53SXEg9ftLi7bcMJcPQ&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019041002nasa-26r-3Demail-2De723-26l-3D01c-2Db4d-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=SKfTpXa85-EUopBv_s2mCYqVabhpc-n1P5Guiw0gDRI&s=OqaZUTuK1UdSAQBZbIth0BdP53SXEg9ftLi7bcMJcPQ&e=>)

8-mHkTTiYCEf5ROyus&m=SKfTpXa85-EUopBv\_s2mCYqVabhpc-

n1P5Guiw0gDRI&s=hHGPRIBI6nDltqpHvK19XiXVLG4jsAqcWmJLBy78yUs&e=> (4/9, Ciaccia) “No, that’s not a faraway alien world you’re looking at. That’s an infrared image of Jupiter and its poles, courtesy of NASA. NASA’s JPL has released images of the gas giant showing the impact that solar winds are having on the planet’s poles, which are causing a hotter atmosphere than previously thought.”

#### An Ice Giant And Warped Disk? Weird Star’s Mysteries Just Get Weirder

SPACE <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019041002nasa-26r-3Demail-2De723-26l-3D01d-2De19-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019041002nasa-26r-3Demail-2De723-26l-3D01d-2De19-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD)

8-mHkTTiYCEf5ROyus&m=SKfTpXa85-EUopBv\_s2mCYqVabhpc-n1P5Guiw0gDRI&s=QQQrr2YubuPWnabz2VbN02iuMR7sBLXPNniwXXooveQ&e=> (4/9) “For over a decade, a warped disk around a young star puzzled astronomers — but new research now suggests explanations for two of the star’s perplexing mysteries. ... Here’s how the mysteries began: In 2007, NASA’s Hubble Space Telescope revealed a lopsided ring around the young star HD 15115, which is located about 150 light-years away, where one side of the disk extends twice as far as the other.”

#### Iron Volcanoes On Some Asteroids May Have Ejected Molten Metal

SPACE <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019041002nasa-26r-3Demail-2De723-26l-3D01e-2D793-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019041002nasa-26r-3Demail-2De723-26l-3D01e-2D793-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD)

8-mHkTTiYCEf5ROyus&m=SKfTpXa85-EUopBv\_s2mCYqVabhpc-n1P5Guiw0gDRI&s=pxbp8pahXJA9KBJx1JBzS7JpSsPJcGPCsksWgRvXSxU&e=> (4/9) “The solar system is full of volcanoes – but scientists may have just identified an entirely new type of volcanic activity. That’s the suggestion of research being conducted by two separate teams looking at metallic asteroids. Scientists have never gotten a good look at one of these objects, but a NASA spacecraft should arrive at Psyche, the largest of them, in 2026 if all goes well.”

#### Metal Asteroid Psyche Might Have Had Volcanoes Of Molten Iron

Universe Today <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019041002nasa-26r-3Demail-2De723-26l-3D01f-2Dd59-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019041002nasa-26r-3Demail-2De723-26l-3D01f-2Dd59-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD)

8-mHkTTiYCEf5ROyus&m=SKfTpXa85-EUopBv\_s2mCYqVabhpc-n1P5Guiw0gDRI&s=zckbKKf5nS553ND6jr-NScLEI5tOe1BYvPejk0zovIM&e=> (4/9) “Imagine a time in the Solar System’s past where the asteroids were not solid rock, but blobs of molten iron. It sounds strange, but that may have been the case. And in the right conditions, some of those asteroids would have sprouted volcanoes. One of those asteroids, Psyche, is the destination for a NASA mission.”

#### New Model Accurately Predicts Harmful Space Weather

SpaceRef <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019041002nasa-26r-3Demail-2De723-26l-3D020-2D6a4-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019041002nasa-26r-3Demail-2De723-26l-3D020-2D6a4-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD)

8-mHkTTiYCEf5ROyus&m=SKfTpXa85-EUopBv\_s2mCYqVabhpc-n1P5Guiw0gDRI&s=9IMRLgsWVAURU4yoz\_G6W5W9dszkESICmCibKkXgbSk&e=> (4/9) “A new, first-of-its-kind space weather model reliably predicts space storms of high-energy particles that are harmful to many satellites and spacecraft orbiting in the Earth’s outer radiation belt. A paper recently published in the journal Space Weather details

how the model can accurately give a one-day warning prior to a space storm of ultra-high-speed electrons, often referred to as 'killer' electrons because of the damage they can do to spacecraft such as navigation, communications, and weather monitoring satellites.”

## Space Tech

### NASA Enlists Academia To Develop Autonomous Space Habitats

Engadget <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019041002nasa-26r-3Demail-2De723-26l-3D021-2Df48-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=SKfTpXa85-EUopBv\\_s2mCYqVabhpc-n1P5Guiw0gDRI&s=H6j\\_340kxJqF9uCwBWShM-HKdAprtm2S-CCH1z5cQnE&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019041002nasa-26r-3Demail-2De723-26l-3D021-2Df48-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=SKfTpXa85-EUopBv_s2mCYqVabhpc-n1P5Guiw0gDRI&s=H6j_340kxJqF9uCwBWShM-HKdAprtm2S-CCH1z5cQnE&e=>) (4/9) “One, the Habitats Optimized for Missions of Exploration (HOME), will develop autonomous systems, machine learning, robotic maintenance and onboard manufacturing for autonomous and self-maintained smart habitats. The HOME team includes researchers from the University of California, Davis; University of Colorado Boulder, Carnegie Mellon University, the Georgia Institute of Technology, Howard University, Texas A&M University and the University of Southern California – as well as Sierra Nevada Corporation, Blue Origin and United Technology Aerospace Systems.”

### NASA Chooses Purdue As Site For New Space Habitats Institute

San Antonio Express-News <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019041002nasa-26r-3Demail-2De723-26l-3D022-2D786-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=SKfTpXa85-EUopBv\\_s2mCYqVabhpc-n1P5Guiw0gDRI&s=UB9pdwqXzzFb3exEBCPTmcLeCHRpncagLv639opqZQ&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019041002nasa-26r-3Demail-2De723-26l-3D022-2D786-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=SKfTpXa85-EUopBv_s2mCYqVabhpc-n1P5Guiw0gDRI&s=UB9pdwqXzzFb3exEBCPTmcLeCHRpncagLv639opqZQ&e=>) (4/9) “NASA has chosen Purdue University as the site of a new research institute that will design deep space habitats for humans. The Resilient ExtraTerrestrial Habitats institute, or RETHi, will be located in West Lafayette, and is set to receive as much as \$15 million over five years from the space agency.”

### Maxar And NASA Complete Design Review For Restore-L On-Orbit Servicing Spacecraft Bus

Space Daily <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019041002nasa-26r-3Demail-2De723-26l-3D023-2D640-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=SKfTpXa85-EUopBv\\_s2mCYqVabhpc-n1P5Guiw0gDRI&s=51pmnDui3MatyUPOnEdLlvKJ8VuQf5ssjlticAvUBeg&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019041002nasa-26r-3Demail-2De723-26l-3D023-2D640-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=SKfTpXa85-EUopBv_s2mCYqVabhpc-n1P5Guiw0gDRI&s=51pmnDui3MatyUPOnEdLlvKJ8VuQf5ssjlticAvUBeg&e=>) (4/9) “Maxar Technologies reports that the spacecraft bus it is building for NASA’s Restore-L project to refuel a satellite in Low Earth Orbit (LEO) has completed an important review process called the Critical Design Review (CDR). With the CDR complete, the spacecraft bus is on track to ship to NASA in 2020 for integration with the robotic payload and a forecasted launch in 2022. Maxar is also building both nimble robotic arms for the Restore-L spacecraft, which will capture, manipulate and refuel the Landsat 7 satellite.”

### NASA Demos CubeSat Laser Communications Capability

SpaceRef <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019041002nasa-26r-3Demail-2De723-26l-3D024-2D98b-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=SKfTpXa85-EUopBv\\_s2mCYqVabhpc-n1P5Guiw0gDRI&s=J1oqh8k2sFTxd\\_F4F1\\_vVCdkUwIw2i3dycJO9tv18zw&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019041002nasa-26r-3Demail-2De723-26l-3D024-2D98b-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=SKfTpXa85-EUopBv_s2mCYqVabhpc-n1P5Guiw0gDRI&s=J1oqh8k2sFTxd_F4F1_vVCdkUwIw2i3dycJO9tv18zw&e=>) (4/9) “Two NASA CubeSats teamed

up on an impromptu optical, or laser, communications pointing experiment. The laser beam is seen as a brief flash of light close to the center of the focal plane, to the left of Earth's horizon. The light originated from the laser communications system onboard one of two Optical Communications and Sensor Demonstration (OCSD) spacecraft."

Various

#### NASA Launches Student Rocket Challenge

Fox News <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019041002nasa-26r-3Demail-2De723-26l-3D025-2Df26-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=SKfTpXa85-EUopBv\\_s2mCYqVabhpc-n1P5Guiw0gDRI&s=8XFoYea5HBRtN\\_PHDZWGwtL-Bt1DZyDMBHMv\\_afG0rl&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019041002nasa-26r-3Demail-2De723-26l-3D025-2Df26-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=SKfTpXa85-EUopBv_s2mCYqVabhpc-n1P5Guiw0gDRI&s=8XFoYea5HBRtN_PHDZWGwtL-Bt1DZyDMBHMv_afG0rl&e=>) (4/9, Watson) "As NASA celebrates the 50th anniversary of the Apollo landing on the moon, it added drones and rovers to its annual student launch competition. Nearly three dozen student teams from colleges, universities, high schools and some middle schools from around the country flocked to Huntsville, Ala., the location of the Marshall Space Flight Center, so their rockets could take flight. The gathering during the first weekend of April was the culmination of a months-long process of designing, analyzing, building and testing rockets to live up to NASA's standard for a safe takeoff."

#### NASA Announces Preliminary Winners Of 2019 Student Launch Competition

Business Insider <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019041002nasa-26r-3Demail-2De723-26l-3D026-2D8fc-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=SKfTpXa85-EUopBv\\_s2mCYqVabhpc-n1P5Guiw0gDRI&s=TnCgYiGvfYrdjnzgD\\_EzSQU5fUjHvtftsKcrAZ3Yl\\_k&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019041002nasa-26r-3Demail-2De723-26l-3D026-2D8fc-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=SKfTpXa85-EUopBv_s2mCYqVabhpc-n1P5Guiw0gDRI&s=TnCgYiGvfYrdjnzgD_EzSQU5fUjHvtftsKcrAZ3Yl_k&e=>) (4/9) "History-making rockets have been developed for nearly six decades at NASA's Marshall Space Flight Center in Huntsville, Alabama, and on April 6, 45 student teams from 20 states created their own history at the 2018-2019 Student Launch competition. Completing its 19th year, Student Launch engages middle school, high school and college teams around the country through a comprehensive program that challenges the students to design, build and test a rocket and payload while meeting multiple documentation and review milestones with NASA rocketry experts."

#### NASA Turns Its Focus To Earth With Aid Partnership

Voice of America <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019041002nasa-26r-3Demail-2De723-26l-3D027-2D165-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=SKfTpXa85-EUopBv\\_s2mCYqVabhpc-n1P5Guiw0gDRI&s=0CKIP7vwjQZRpAC7Z5KYmr0JQiQB\\_2s\\_NREHm-jiMaU&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019041002nasa-26r-3Demail-2De723-26l-3D027-2D165-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=SKfTpXa85-EUopBv_s2mCYqVabhpc-n1P5Guiw0gDRI&s=0CKIP7vwjQZRpAC7Z5KYmr0JQiQB_2s_NREHm-jiMaU&e=>) (4/9) "NASA is using its satellites to solve humanitarian challenges in some of the most fragile places on earth under a landmark partnership with aid agency Mercy Corps. The U.S. National Aeronautics and Space Administration will use its wealth of data to help communities at risk from climate change and natural disaster predict the dangers and build their resilience."

#### At Airports Around The World, Kid Play Spaces Take Off

Washington Post <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019041002nasa-26r-3Demail-2De723-26l-3D028-2D253-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019041002nasa-26r-3Demail-2De723-26l-3D028-2D253-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD)

8-mHkTTiYCEf5ROyus&m=SKfTpXa85-EUopBv\_s2mCYqVabhpc-n1P5Guiw0gDRI&s=UufSzpluxeRcW9F1SEqL3nq\_96pX9au10GGZJTQftm8&e=> (4/9, Hallett) "Something was missing at Washington Dulles International Airport, realized customer service manager Dennis Hazell. For grown-ups, the concourses offered sports bars and duty-free shops. For dogs, 'pet relief areas' beckoned with fake fire hydrants on artificial grass. But for the youngest travelers, there was zilch, nothing. ... That changed with the arrival of the FunWay, an indoor play area sponsored by NASA that turns three years old in August."

Other

#### Israeli Moon Lander Poised For Lunar Touchdown Thursday

SPACE <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019041002nasa-26r-3Demail-2De723-26l-3D029-2D3de-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=SKfTpXa85-EUopBv\\_s2mCYqVabhpc-n1P5Guiw0gDRI&s=dUWt8KQjxSW35-\\_v\\_Svp3ijBSrKNWMCQP5DtPKJ4SPk&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019041002nasa-26r-3Demail-2De723-26l-3D029-2D3de-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=SKfTpXa85-EUopBv_s2mCYqVabhpc-n1P5Guiw0gDRI&s=dUWt8KQjxSW35-_v_Svp3ijBSrKNWMCQP5DtPKJ4SPk&e=>) (4/9) "Israel's robotic Beresheet moon lander is nearing its moment of truth: an epic lunar-touchdown attempt scheduled to occur between 3 p.m. and 4 p.m. EDT (1900 and 2000 GMT) on Thursday (April 11). If Beresheet succeeds, Israel will become just the fourth nation to land a spacecraft softly on the moon, following the Soviet Union, the United States and China."

#### Israel's Beresheet Space Probe Prepares For Historic Moon Landing

NBC News <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019041002nasa-26r-3Demail-2De723-26l-3D02a-2D855-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=SKfTpXa85-EUopBv\\_s2mCYqVabhpc-n1P5Guiw0gDRI&s=DqAZZBoKSScmbIEhmBYP4sZgZxOD6eeaY5thrwu7s7A&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019041002nasa-26r-3Demail-2De723-26l-3D02a-2D855-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=SKfTpXa85-EUopBv_s2mCYqVabhpc-n1P5Guiw0gDRI&s=DqAZZBoKSScmbIEhmBYP4sZgZxOD6eeaY5thrwu7s7A&e=>) (4/9) "In the history of space exploration, only the U.S., Russia and China have landed a spacecraft on the moon. That could change on Thursday, when an Israeli probe now in orbit around the moon attempts to settle on the lunar surface. The Beresheet space probe is scheduled to touch down between 3 p.m. to 4 p.m. ET., settling on a vast lava plain on the lunar nearside known as Mare Serenitatis, or the Sea of Serenity. The landing will be livestreamed by SpaceIL, the Israeli nonprofit organization behind the mission, and Israel Aerospace Industries, the company that built the four-legged spacecraft."

#### SpaceX's Falcon Heavy Will Now Fly On Wednesday, Hopefully

BGR <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019041002nasa-26r-3Demail-2De723-26l-3D02b-2D817-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=SKfTpXa85-EUopBv\\_s2mCYqVabhpc-n1P5Guiw0gDRI&s=iC77bj1--QF4g3fnk8gqotLdpUVocVjCRG3dkjTusl0&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019041002nasa-26r-3Demail-2De723-26l-3D02b-2D817-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=SKfTpXa85-EUopBv_s2mCYqVabhpc-n1P5Guiw0gDRI&s=iC77bj1--QF4g3fnk8gqotLdpUVocVjCRG3dkjTusl0&e=>) (4/9, Wehner) "If you were eagerly anticipating the second-ever launch of SpaceX's Falcon Heavy rocket this past weekend, you were sorely disappointed when the company was forced to delay the launch. We had a feeling that might happen, and the launch was pushed back to today, Tuesday, April 9th, but now yet another delay has pushed it back even further."

#### Three Virgin Galactic Crew Presented With Commercial Astronaut Wings At 35th National Space Symposium

SpaceRef <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019041002nasa-26r-3Demail-2De723-26l-3D02c-2Da28-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=SKfTpXa85-EUopBv\\_s2mCYqVabhpc-n1P5Guiw0gDRI&s=nDjEdKlj0xeY1n9h-11eG8TfruM505j1rmyjbVmUOIQ&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019041002nasa-26r-3Demail-2De723-26l-3D02c-2Da28-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=SKfTpXa85-EUopBv_s2mCYqVabhpc-n1P5Guiw0gDRI&s=nDjEdKlj0xeY1n9h-11eG8TfruM505j1rmyjbVmUOIQ&e=>) (4/9) "The three-person crew from Virgin Galactic's second spaceflight have



received Commercial Astronaut Wings from the Federal Aviation Administration (FAA). Chief Pilot, Dave Mackay, Lead Pilot trainer, Mike 'Sooch' Masucci and Chief Astronaut Instructor, Beth Moses, were presented their wings at the 35th National Space Symposium, where it was also announced that Virgin Galactic and The Spaceship Company (TSC) are to be presented the Space Achievement Award later this week."

#### Virgin Galactic's First Test Passenger Gets Commercial Astronaut Wings

Reuters <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019041002nasa-26r-3Demail-2De723-26l-3D02d-2D1eb-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=SKfTpXa85-EUopBv\\_s2mCYqVabhpc-n1P5Guiw0gDRI&s=mJWF\\_efZ7bf0t\\_xAPF-k5BmBZC-d46wdFcD-8Y\\_wHv8&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019041002nasa-26r-3Demail-2De723-26l-3D02d-2D1eb-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=SKfTpXa85-EUopBv_s2mCYqVabhpc-n1P5Guiw0gDRI&s=mJWF_efZ7bf0t_xAPF-k5BmBZC-d46wdFcD-8Y_wHv8&e=>)> (4/9) "Virgin Galactic's first test passenger received her commercial astronaut wings from the U.S. aviation regulator on Tuesday after flying on the company's rocket plane to evaluate the customer experience in February. Virgin Galactic's chief astronaut instructor, Beth Moses, who is a former NASA engineer, became the first woman to fly to space on a commercial vehicle when she joined pilots David Mackay and Mike Masucci on SpaceShipTwo VSS Unity."

#### Japan Wants To Build Moon Base Using Robots

Tech Times <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019041002nasa-26r-3Demail-2De723-26l-3D02e-2D235-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=SKfTpXa85-EUopBv\\_s2mCYqVabhpc-n1P5Guiw0gDRI&s=a2NfOIJB6wbEMEuydeGyDed0PyEvXxvxnuk-Va6c5c&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019041002nasa-26r-3Demail-2De723-26l-3D02e-2D235-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=SKfTpXa85-EUopBv_s2mCYqVabhpc-n1P5Guiw0gDRI&s=a2NfOIJB6wbEMEuydeGyDed0PyEvXxvxnuk-Va6c5c&e=>)> (4/9, Dacanay) "Japan is serious about landing on the moon that it's already planning how to set up a lunar base with the help of a technology it knows best: robots. The Japan Aerospace Exploration Agency is working with the United States and Russia in building a new space station that will orbit the moon. If everything goes well, it should be operational in the 2020s."

#### Self-Driving Spacecraft May Protect Planet Earth From Asteroid Collisions

Tech Times <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019041002nasa-26r-3Demail-2De723-26l-3D02f-2D72e-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=SKfTpXa85-EUopBv\\_s2mCYqVabhpc-n1P5Guiw0gDRI&s=uFIREPDRFI9fhcUg37Ueudx7QhXktZZPC6W0wwlq0AQ&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019041002nasa-26r-3Demail-2De723-26l-3D02f-2D72e-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=SKfTpXa85-EUopBv_s2mCYqVabhpc-n1P5Guiw0gDRI&s=uFIREPDRFI9fhcUg37Ueudx7QhXktZZPC6W0wwlq0AQ&e=>)> (4/9, Carlos) "Self-driving cars are already roaming the roads, but a self-driving spacecraft is also set to take flight within the next several years. Many deep space probes rely on ground controllers back on Earth to navigate their course. Now, engineers are developing the technology that would allow spacecraft to navigate the cosmos on its own, according to an official report from ESA."

#### The World's Glaciers Are Down By 9 Trillion Tonnes Of Ice In The Last Half Century

Universe Today <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019041002nasa-26r-3Demail-2De723-26l-3D030-2D058-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=SKfTpXa85-EUopBv\\_s2mCYqVabhpc-n1P5Guiw0gDRI&s=cUGh1j7uDO3gDQeNA4uEiFNAImoUzvG6rOCvUI37pHg&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019041002nasa-26r-3Demail-2De723-26l-3D030-2D058-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=SKfTpXa85-EUopBv_s2mCYqVabhpc-n1P5Guiw0gDRI&s=cUGh1j7uDO3gDQeNA4uEiFNAImoUzvG6rOCvUI37pHg&e=>)> (4/9) "Things are not looking good for Earth's glaciers. Usually, when it comes to climate change and melting ice, we think of the Earth's polar regions. But they're not the only important ice formations, and they're not the only ice that's melting due to climate change. ... At the heart of this research is the European Space Agency's (ESA) Climate Change Initiative."

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## NASA Morning Briefing for Wednesday, May 8, 2019

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The Hill <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019050802nasa-26r-3Demail-2D62fd-26l-3D003-2Da12-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=BBsH3jTzE1KDIJ\\_TsbdihwDSQgQaNxOvPbWOUxEFFP0&s=9d55syqYxlCjZkazbkpxRxd4HALfQEZOQ0dVZdQbWwU&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019050802nasa-26r-3Demail-2D62fd-26l-3D003-2Da12-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=BBsH3jTzE1KDIJ_TsbdihwDSQgQaNxOvPbWOUxEFFP0&s=9d55syqYxlCjZkazbkpxRxd4HALfQEZOQ0dVZdQbWwU&e=>)> (5/7, Frazin) "The White House asked NASA to simulate what would happen if an asteroid hit Earth in 2027 as part of the White House's National Near-Earth Object Preparedness Strategy and Action Plan, and the simulation took place last week, according to USA Today. In the College Park, Md., demonstration, an asteroid became a threat and was expected to hit Denver. The simulation team fired spacecrafts to try to divert the 140- to 260-meter space rock, but part of it chipped off and headed for New York City. By the end, researchers decided in the fictional scenario to evacuate the city."

NASA, Nevada Institute To Test Drones In Downtown Reno

Washington Times <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019050802nasa-26r-3Demail-2D62fd-26l-3D004-2D8ac-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019050802nasa-26r-3Demail-2D62fd-26l-3D004-2D8ac-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-)>

mHkTTiYCEf5ROyus&m=BBsH3jTzE1KDIJ\_TsbdiHwDSQgQaNxOvPbWOUxEFFP0&s=1jaiHVPgnhGr2ckiNRbouEZfZfXocK2\_u60xIA8qSIw&e=> (5/8) "Drones will be buzzing around parts of downtown Reno the next two weeks for urban testing by NASA and the Nevada Institute for Autonomous Systems. Reno officials announced Tuesday that the city is helping to facilitate the testing, which will be conducted in the downtown area May 11-24 and result in some road closures and pedestrian restrictions. According to the city's announcement, NASA earlier this year selected the Las Vegas-based institute to participate in drone operations that will test flying in higher-density urban areas."

#### Opinion: NASA Has Chosen The Hard Way To Reach Mars

Aviation Week <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019050802nasa-26r-3Demail-2D62fd-26l-3D005-2D137-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=BBsH3jTzE1KDIJ\\_TsbdiHwDSQgQaNxOvPbWOUxEFFP0&s=UN8aEAzCNE-iBZ0zt0B0RMvRMGOE8pIBQcsb-7ZxAU8&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019050802nasa-26r-3Demail-2D62fd-26l-3D005-2D137-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=BBsH3jTzE1KDIJ_TsbdiHwDSQgQaNxOvPbWOUxEFFP0&s=UN8aEAzCNE-iBZ0zt0B0RMvRMGOE8pIBQcsb-7ZxAU8&e=>) (5/8, Zubrin) "During the week of April 18, the executive-branch-chartered Science and Technology Policy Institute (STPI) issued a review, which concluded that NASA's plan to send humans to Mars by 2033 is not feasible. While I would love to dispute this report, it actually understates the problem."

#### Our Satellites Are Prime Targets For A Cyberattack. And Things Could Get Worse.

Washington Post <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019050802nasa-26r-3Demail-2D62fd-26l-3D006-2D105-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=BBsH3jTzE1KDIJ\\_TsbdiHwDSQgQaNxOvPbWOUxEFFP0&s=nPa4d4brQ2QBjCfiYQU1jUqcUPK2AXYCbCAeLBeswXg&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019050802nasa-26r-3Demail-2D62fd-26l-3D006-2D105-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=BBsH3jTzE1KDIJ_TsbdiHwDSQgQaNxOvPbWOUxEFFP0&s=nPa4d4brQ2QBjCfiYQU1jUqcUPK2AXYCbCAeLBeswXg&e=>) (5/7, Falco) "Gregory Falco is a cyber research fellow at Harvard University's Belfer Center and a postdoctoral security researcher at the Massachusetts Institute of Technology's Computer Science and Artificial Intelligence Laboratory. He is the founder and chief executive of NeuroMesh, a tech security company. One minute. That's how long it took me last month to demonstrate to a major broadcasting company and production team how to access and restart a leading satellite Internet provider's control system. Five minutes is how long it took me to demonstrate how to gain full control of it."

#### Consortium To Develop "Space Sustainability" Rating System

Space News <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019050802nasa-26r-3Demail-2D62fd-26l-3D007-2Df3b-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=BBsH3jTzE1KDIJ\\_TsbdiHwDSQgQaNxOvPbWOUxEFFP0&s=qciJOK\\_F7BLQDGY4\\_joLd3BCzhqiiQ6LAMA4fKNjZVg&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019050802nasa-26r-3Demail-2D62fd-26l-3D007-2Df3b-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=BBsH3jTzE1KDIJ_TsbdiHwDSQgQaNxOvPbWOUxEFFP0&s=qciJOK_F7BLQDGY4_joLd3BCzhqiiQ6LAMA4fKNjZVg&e=>) (5/7) "The World Economic Forum (WEF) has selected a consortium of companies, universities and agencies to develop a system to rate the sustainability of space systems, one that its backers hope will encourage good behavior in space. WEF announced May 6 that a team from the European Space Agency, together with one led by the Massachusetts Institute of Technology (MIT) Media Lab, will work on development of a Space Sustainability Rating, a metric that will define how well an individual satellite, or satellite system, follows guidelines to ensure the long-term sustainability of space."

#### Flight

#### NASA, Nevada Institute To Test Drones In Downtown Reno

Washington Times <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019050802nasa-26r-3Demail-2D62fd-26l-3D008-2Df3b-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=BBsH3jTzE1KDIJ\\_TsbdiHwDSQgQaNxOvPbWOUxEFFP0&s=qciJOK\\_F7BLQDGY4\\_joLd3BCzhqiiQ6LAMA4fKNjZVg&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019050802nasa-26r-3Demail-2D62fd-26l-3D008-2Df3b-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=BBsH3jTzE1KDIJ_TsbdiHwDSQgQaNxOvPbWOUxEFFP0&s=qciJOK_F7BLQDGY4_joLd3BCzhqiiQ6LAMA4fKNjZVg&e=>)

3A\_\_mailview.bulletinintelligence.com\_mailview.aspx-3Fm-3D2019050802nasa-26r-3Demail-2D62fd-26l-3D008-2D84d-26t-

3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=BBsH3jTzE1KDIJ\_TsbdiHwDSQgQaNxOvPbWOUxEFFP0&s=\_VO-5a5pv0ECgWo4Yxoqb6ttw\_HQiGS0SIKgm8tm6B4&e=> (5/8) "Drones will be buzzing around parts of downtown Reno the next two weeks for urban testing by NASA and the Nevada Institute for Autonomous Systems. Reno officials announced Tuesday that the city is helping to facilitate the testing, which will be conducted in the downtown area May 11-24 and result in some road closures and pedestrian restrictions. According to the city's announcement, NASA earlier this year selected the Las Vegas-based institute to participate in drone operations that will test flying in higher-density urban areas."

#### FAA Asks For NASA's Help In Boeing 737 MAX Safety-upgrade Review

Seattle Times <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019050802nasa-26r-3Demail-2D62fd-26l-3D009-2D6f8-26t-](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019050802nasa-26r-3Demail-2D62fd-26l-3D009-2D6f8-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=BBsH3jTzE1KDIJ_TsbdiHwDSQgQaNxOvPbWOUxEFFP0&s=pmMGb8lctxdgvPOr6aXzVbsk86YOpEt0PmrWt96dhHVY&e=>)

3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=BBsH3jTzE1KDIJ\_TsbdiHwDSQgQaNxOvPbWOUxEFFP0&s=pmMGb8lctxdgvPOr6aXzVbsk86YOpEt0PmrWt96dhHVY&e=> (5/7) "The Federal Aviation Administration is convening a panel of outside experts from the Air Force, NASA and a Transportation Department center to review Boeing's software fixes for the grounded 737 MAX. The agency announced the new Technical Advisory Board in a statement on Tuesday. The panel's recommendations will 'directly inform the FAA's decision concerning the 737 MAX fleet's safe return to service,' the agency said."

#### FAA Convenes Multi-Agency Board To Review Boeing Software Fix

Reuters <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019050802nasa-26r-3Demail-2D62fd-26l-3D00a-2D41c-26t-](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019050802nasa-26r-3Demail-2D62fd-26l-3D00a-2D41c-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=BBsH3jTzE1KDIJ_TsbdiHwDSQgQaNxOvPbWOUxEFFP0&s=wEVYko5OI5M6j18y5TKnh9RMKeWvzppMV2LkYBE4VXk&e=>)

3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=BBsH3jTzE1KDIJ\_TsbdiHwDSQgQaNxOvPbWOUxEFFP0&s=wEVYko5OI5M6j18y5TKnh9RMKeWvzppMV2LkYBE4VXk&e=> (5/7, Shepardson) "The Federal Aviation Administration said on Tuesday it had convened a multi-agency Technical Advisory Board to review Boeing's proposed software fix on the grounded 737 MAX. The board consists of experts from the FAA, U.S. Air Force, NASA and Volpe National Transportation Systems Center that were not involved in any aspect of the Boeing 737 MAX certification."

#### Earth

#### NASA Warns UK Set For Record-Breaking Year Of Wildfires

Daily Mirror (UK) <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019050802nasa-26r-3Demail-2D62fd-26l-3D00b-2De6e-26t-](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019050802nasa-26r-3Demail-2D62fd-26l-3D00b-2De6e-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=BBsH3jTzE1KDIJ_TsbdiHwDSQgQaNxOvPbWOUxEFFP0&s=LIUtqxy2XhXScvGifGIMXDKCJkhpFwNr52opMMUyaLY&e=>)

3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=BBsH3jTzE1KDIJ\_TsbdiHwDSQgQaNxOvPbWOUxEFFP0&s=LIUtqxy2XhXScvGifGIMXDKCJkhpFwNr52opMMUyaLY&e=> (5/7, Curtis) "NASA has issued an ominous warning that the UK could be set for a record-breaking year of wildfires. The US space agency has been using satellites to monitor fires on Earth ever since January 2014. The number of wildfires in the UK has been increasing annually, with a dramatic increase in the number of fire detections since 2017."



## How NASA Scientist Drilled 3,000m Below Antarctica Ice To Make SHOCK 250,000-Year-Old Find

Daily Express (UK) <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019050802nasa-26r-3Demail-2D62fd-26l-3D00c-2D46f-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=BBsH3jTzE1KDIJ\\_TsbdiHwDSQgQaNxOvPbWOUxEFFP0&s=KIJZmr0BIPLsBIDeLeLCdRi3QnbhV7Tf7qyodl9aMOs&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019050802nasa-26r-3Demail-2D62fd-26l-3D00c-2D46f-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=BBsH3jTzE1KDIJ_TsbdiHwDSQgQaNxOvPbWOUxEFFP0&s=KIJZmr0BIPLsBIDeLeLCdRi3QnbhV7Tf7qyodl9aMOs&e=>) (5/7, Hoare) “Antarctica is Earth’s southernmost continent, with 98 percent of the region covered in ice measuring an average of 2km in thickness. The frozen desert, which reaches -90C at times of the year, has been of interest to NASA scientists, who use it to prepare for missions to the moon and sun. However, few have ever ventured below the ice. It was revealed during Amazon Prime’s ‘Steps to the Future’ how former NASA scientist Dr Jerome Chappellaz drilled below the surface to understand more about what will happen to our planet in the future.”

## Monster Cyclone Fani Over India Looked Fearsome From Space

SPACE <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019050802nasa-26r-3Demail-2D62fd-26l-3D00d-2D5cb-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=BBsH3jTzE1KDIJ\\_TsbdiHwDSQgQaNxOvPbWOUxEFFP0&s=R3TRN4HFLqoYvBSKEbbFxBPIgssYh-NtXfsaJnInpQU&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019050802nasa-26r-3Demail-2D62fd-26l-3D00d-2D5cb-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=BBsH3jTzE1KDIJ_TsbdiHwDSQgQaNxOvPbWOUxEFFP0&s=R3TRN4HFLqoYvBSKEbbFxBPIgssYh-NtXfsaJnInpQU&e=>) (5/6) “As Cyclone Fani strengthened and made landfall over eastern India on May 3, a network of weather satellites kept an eye on the massive storm. ... Over the course of Fani’s formation and dispersal, the storm was watched by weather satellites including NOAA-20, Himawari8 and Suomi NPP, all run by the National Oceanic and Atmospheric Administration, as well as NASA’s Terra satellite.”

## Humans in Space

### SpaceX Shipment Reaches Space Station, Greeted With Canadians’ ‘Cosmic Catch’

Los Angeles Daily News <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019050802nasa-26r-3Demail-2D62fd-26l-3D00e-2D01d-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=BBsH3jTzE1KDIJ\\_TsbdiHwDSQgQaNxOvPbWOUxEFFP0&s=231Q-uvIEIQZab\\_EJfleEziJgKPfElubh6t0YI63Tk&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019050802nasa-26r-3Demail-2D62fd-26l-3D00e-2D01d-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=BBsH3jTzE1KDIJ_TsbdiHwDSQgQaNxOvPbWOUxEFFP0&s=231Q-uvIEIQZab_EJfleEziJgKPfElubh6t0YI63Tk&e=>) (5/7) “A SpaceX shipment arrived at the International Space Station on Monday with a ‘cosmic catch’ by a pair of Canadians. The Hawthorne-based rocketbuilder’s Dragon capsule delivered 5,500 pounds (2,500 kilograms) of equipment and experiments. Canadian astronaut David Saint-Jacques used the station’s big robot arm – also made in Canada – to capture the Dragon approximately 250 miles (400 kilometers) above the North Atlantic Ocean.”

### SpaceX’s Dragon Cargo Capsule Docks With Space Station

Space Daily <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019050802nasa-26r-3Demail-2D62fd-26l-3D00f-2Da25-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=BBsH3jTzE1KDIJ\\_TsbdiHwDSQgQaNxOvPbWOUxEFFP0&s=B\\_ha9koPXil7QpeTvyQPperZcEGowOF-pwLAJGKJomo&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019050802nasa-26r-3Demail-2D62fd-26l-3D00f-2Da25-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=BBsH3jTzE1KDIJ_TsbdiHwDSQgQaNxOvPbWOUxEFFP0&s=B_ha9koPXil7QpeTvyQPperZcEGowOF-pwLAJGKJomo&e=>) (5/7) “SpaceX’s Dragon spacecraft docked and bolted to the International Space Station on schedule Monday morning. It was the 17th such mission for the space company’s Commercial Resupply

Services contract with NASA. Video of the docking sequence on NASA Live showed the station as it traveled at more than 7,000 mph into nighttime darkness over the Indian Ocean. The craft launched on top of a Falcon 9 rocket early Saturday from Florida.”

#### Space Shuttle Launches New Era In Exploration

SPACE <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019050802nasa-26r-3Demail-2D62fd-26l-3D010-2De4d-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=BBsH3jTzE1KDIJ\\_TsbdiHwDSQgQaNxOvPbWOUxEFFP0&s=m1prkvrgtPD70KLTPJply86b8HKGv4G3gKAtdSNe\\_4&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019050802nasa-26r-3Demail-2D62fd-26l-3D010-2De4d-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=BBsH3jTzE1KDIJ_TsbdiHwDSQgQaNxOvPbWOUxEFFP0&s=m1prkvrgtPD70KLTPJply86b8HKGv4G3gKAtdSNe_4&e=>) (5/7) “The first launch of the space shuttle Columbia in 1981 touched off an era of flight that allowed humans to ride in the same spacecraft to space more than once. The shuttle continued to fly into space for more than 20 years, orbiting Earth almost 5,000 times and spending more than 300 days outside of Earth’s gravity. During its time in service, Columbia carried 160 astronauts away from Earth; the craft holds the record for the shortest and longest space shuttle missions (2 days, 6 hours, 13 minutes and 12 seconds; and 17 days, 15 hours, 53 minutes and 18 seconds, respectively).”

#### NASA Watching Elon Musk’s SpaceX Closely As US Military Have Power To SHUT DOWN Launch

Daily Express (UK) <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019050802nasa-26r-3Demail-2D62fd-26l-3D011-2D773-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=BBsH3jTzE1KDIJ\\_TsbdiHwDSQgQaNxOvPbWOUxEFFP0&s=4ayEewvg2DfddrLOiuvx-Ebsj9uvs\\_tl8ouvIPF\\_GFM&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019050802nasa-26r-3Demail-2D62fd-26l-3D011-2D773-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=BBsH3jTzE1KDIJ_TsbdiHwDSQgQaNxOvPbWOUxEFFP0&s=4ayEewvg2DfddrLOiuvx-Ebsj9uvs_tl8ouvIPF_GFM&e=>) (5/7, Anderson) “NASA awarded SpaceX and Boeing with the huge commercial contracts to support space exploration. SpaceX are hoping its first manned flight will go ahead this year despite reports one of the Crew Dragon pods last month exploded during a test – something the company dismissed as an ‘anomaly’. However, the US Air Force has the ultimate power to delay a launch, according to the Daily Telegraph. The military reportedly keeps a close eye on launches which are carrying national security assets including satellites.”

#### Moon to Mars

##### Opinion: NASA Has Chosen The Hard Way To Reach Mars

Aviation Week <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019050802nasa-26r-3Demail-2D62fd-26l-3D012-2Db87-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=BBsH3jTzE1KDIJ\\_TsbdiHwDSQgQaNxOvPbWOUxEFFP0&s=2berxO5gncRxzKgYU3eiz64a31NISPXotG2BifE1Baw&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019050802nasa-26r-3Demail-2D62fd-26l-3D012-2Db87-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=BBsH3jTzE1KDIJ_TsbdiHwDSQgQaNxOvPbWOUxEFFP0&s=2berxO5gncRxzKgYU3eiz64a31NISPXotG2BifE1Baw&e=>) (5/8, Zubrin) “During the week of April 18, the executive-branch-chartered Science and Technology Policy Institute (STPI) issued a review, which concluded that NASA’s plan to send humans to Mars by 2033 is not feasible. While I would love to dispute this report, it actually understates the problem.”

##### Race To The Moon: Boeing Turns Over Lunar Gateway Concept For NASA Testing

Axios <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019050802nasa-26r-3Demail-2D62fd-26l-3D013-2D057-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=BBsH3jTzE1KDIJ\\_TsbdiHwDSQgQaNxOvPbWOUxEFFP0&s=uUUJ0D19GcihTPOUCN5DS](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019050802nasa-26r-3Demail-2D62fd-26l-3D013-2D057-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=BBsH3jTzE1KDIJ_TsbdiHwDSQgQaNxOvPbWOUxEFFP0&s=uUUJ0D19GcihTPOUCN5DS)

oScZFevWdeLCx9qYoHhRdM&e=> (5/7, Kramer) “Boeing wants to take lessons learned from the International Space Station (ISS) to meet NASA’s ambitious 2024 deadline to get humans back to the moon. Driving the news: The longtime NASA contractor just finished up construction of a full-scale, ground-based model of its prototype for the space agency’s lunar gateway. NASA will now start running the prototype through a series of tests.”

#### A Martian Dust Devil Swept Right Over NASA’s InSight Lander

Gizmodo <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019050802nasa-26r-3Demail-2D62fd-26l-3D014-2D111-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=BBsH3jTzE1KDIJ\\_TsbdiHwDSQgQaNxOvPbWOUxEFFP0&s=o0WKvB1Inhyky2Wzu9BtclqQvmTVSHbSRZY4wOFDXs8&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019050802nasa-26r-3Demail-2D62fd-26l-3D014-2D111-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=BBsH3jTzE1KDIJ_TsbdiHwDSQgQaNxOvPbWOUxEFFP0&s=o0WKvB1Inhyky2Wzu9BtclqQvmTVSHbSRZY4wOFDXs8&e=>) (5/7, Dvorsky) “The InSight lander seems to have been hit by one of Mars’ famous dust devils, but don’t worry – the NASA probe is just fine. If anything, the sudden blast of wind helped to clear off some annoying dust that had been collecting on the probe’s solar panels. The passing wind vortex also produced some cool science.”

#### NASA’s InSight Robot Is Now Covered In Mars Dust, But That Might Actually Be Good News

BGR <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019050802nasa-26r-3Demail-2D62fd-26l-3D015-2D101-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=BBsH3jTzE1KDIJ\\_TsbdiHwDSQgQaNxOvPbWOUxEFFP0&s=ff-9TmoeKnqWg-fyQJgZC26ks2c6E2oO5CMhz8-8Jk&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019050802nasa-26r-3Demail-2D62fd-26l-3D015-2D101-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=BBsH3jTzE1KDIJ_TsbdiHwDSQgQaNxOvPbWOUxEFFP0&s=ff-9TmoeKnqWg-fyQJgZC26ks2c6E2oO5CMhz8-8Jk&e=>) (5/7, Wehner) “Mars is a dry and dusty place, and strong winds can kick up huge plumes of material that block out the Sun for days, weeks, or even months at a time. The fate of NASA’s Opportunity rover – which shut down after a colossal dust storm prevented its solar panels from generating power – was a harsh reminder that the Red Planet is a dangerous place for robots. Now, NASA reveals that the second full selfie snapped by the newly-arrived InSight lander shows a machine covered in orange dust, scientists aren’t particularly worried. In fact, they’re hopeful that a light caking of dust will actually reveal new clues about Martian weather.”

#### A New Study Finds Possible ‘Evidence’ Of Life On Mars

Medium <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019050802nasa-26r-3Demail-2D62fd-26l-3D016-2D963-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=BBsH3jTzE1KDIJ\\_TsbdiHwDSQgQaNxOvPbWOUxEFFP0&s=TpCw2ja2hppkemi84Me7YQiHZzMEopKqy4Zr9-c5-68&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019050802nasa-26r-3Demail-2D62fd-26l-3D016-2D963-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=BBsH3jTzE1KDIJ_TsbdiHwDSQgQaNxOvPbWOUxEFFP0&s=TpCw2ja2hppkemi84Me7YQiHZzMEopKqy4Zr9-c5-68&e=>) (5/6, Dean) “A new study published in the Journal of Astrobiology and Space Science has hinted at the existence of alien life forms on the Red Planet. The study, which references images taken by NASA’s Curiosity Rover points towards what appears to be fungi and algae on Mars. NASA has still not admitted nor denied the conclusions that scientists made in the study, but nonetheless, a number of scientists believe that the report is the ultimate, and indisputable evidence of alien life on Mars.”

#### Korea To Develop Lunar Landing Modules With NASA

Chosun Ilbo (KOR) <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019050802nasa-26r-3Demail-2D62fd-26l-3D017-2D625-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=BBsH3jTzE1KDIJ\\_TsbdiHwDSQgQaNxOvPbWOUxEFFP0&s=ff-9TmoeKnqWg-fyQJgZC26ks2c6E2oO5CMhz8-8Jk&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019050802nasa-26r-3Demail-2D62fd-26l-3D017-2D625-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=BBsH3jTzE1KDIJ_TsbdiHwDSQgQaNxOvPbWOUxEFFP0&s=ff-9TmoeKnqWg-fyQJgZC26ks2c6E2oO5CMhz8-8Jk&e=>)

mHkTTiYCEf5ROyus&m=BBsH3jTzE1KDIJ\_TsbdiHwDSQgQaNxOvPbWOUxEFFP0&s=cO5Fhi98KCT9ay180dCyjva kCUwPT7MmAqrcmIO\_JcE&e=> (5/8) "The Korea Astronomy and Science Institute and the U.S.' NASA have agreed to join hands to develop payloads for lunar landing vehicles, the Ministry of Science and ICT said Tuesday. NASA hopes to launch nine lunar-landing modules starting in 2020 and Korean scientists will take part in the endeavor. The Korea Aerospace Research Institute, Korea Institute of Civil Engineering and Building Technology, Korea Institute of Science and Technology and Korea Institute of Geoscience and Mineral Resources will also take part in the project."

#### How Much Did Apollo 11 Astronauts Make For Flying To Moon? Less Than You Think

Orlando (FL) Sentinel <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019050802nasa-26r-3Demail-2D62fd-26l-3D018-2D84f-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=BBsH3jTzE1KDIJ\\_TsbdiHwDSQgQaNxOvPbWOUxEFFP0&s=tokG-oJRM9B5jicZCHtN5DV1C1I\\_du-qYRayKF7eP9E&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019050802nasa-26r-3Demail-2D62fd-26l-3D018-2D84f-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=BBsH3jTzE1KDIJ_TsbdiHwDSQgQaNxOvPbWOUxEFFP0&s=tokG-oJRM9B5jicZCHtN5DV1C1I_du-qYRayKF7eP9E&e=>) (5/7, Simmons) "When Apollo 11 astronauts Neil Armstrong, Buzz Aldrin and Michael Collins blasted off on their trip to the moon in July 1969, they were being paid by the U.S. government. But how much money they made while on their historic mission might surprise you. Armstrong, the commander of the moon journey and a civilian who was working for NASA, was the highest-paid of the astronauts. He had a Bachelor of Science degree in Aeronautical Engineering from Purdue and attended graduate school at Southern Cal before joining NASA in 1955."

#### Solar System and Beyond

#### First Planetary Defense Technology Demonstration To Collide With Asteroid In 2022

Space Daily <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019050802nasa-26r-3Demail-2D62fd-26l-3D019-2Df3b-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=BBsH3jTzE1KDIJ\\_TsbdiHwDSQgQaNxOvPbWOUxEFFP0&s=n4gBPOSKFoHzf5Rkt\\_UUR50-q0J4ug1yfwjpwSXZwhc&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019050802nasa-26r-3Demail-2D62fd-26l-3D019-2Df3b-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=BBsH3jTzE1KDIJ_TsbdiHwDSQgQaNxOvPbWOUxEFFP0&s=n4gBPOSKFoHzf5Rkt_UUR50-q0J4ug1yfwjpwSXZwhc&e=>) (5/7) "The Double Asteroid Redirection Test (DART) – NASA's first mission to demonstrate a planetary defense technique – will get one chance to hit its target, the small moonlet in the binary asteroid system Didymos. The asteroid poses no threat to Earth and is an ideal test target: measuring the change in how the smaller asteroid orbits about the larger asteroid in a binary system is much easier than observing the change in a single asteroid's orbit around the Sun."

#### NASA Will Test Asteroid Defenses By Slamming A Spacecraft Into A Space Rock In 2022

BGR <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019050802nasa-26r-3Demail-2D62fd-26l-3D01a-2Da9a-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=BBsH3jTzE1KDIJ\\_TsbdiHwDSQgQaNxOvPbWOUxEFFP0&s=sw0x5CGy9Raq30CN\\_7EhF4chbBo4p9uquV6Ya6BVYAM&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019050802nasa-26r-3Demail-2D62fd-26l-3D01a-2Da9a-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=BBsH3jTzE1KDIJ_TsbdiHwDSQgQaNxOvPbWOUxEFFP0&s=sw0x5CGy9Raq30CN_7EhF4chbBo4p9uquV6Ya6BVYAM&e=>) (5/7, Wehner) "If Earth were ever to be threatened by a large space rock – and it definitely will at some point in the future – humanity is going to need to have a plan. Astronomers know this, which is why simulated exercises like the one that took place last week are so important, but actually testing possible defense strategies is something that still needs to happen. In 2021, NASA will launch the DART spacecraft. DART, which stands for Double Asteroid Redirection Test, is designed to slam directly into a space rock known as Didymos B, which is the smaller half of a binary asteroid, the other half of which is known as Didymos A. The results from the test could shape Earth's planetary defense systems for decades to come."

## NASA's DART Mission Will Try To Deflect A Near-Earth Asteroid

Discover Magazine <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019050802nasa-26r-3Demail-2D62fd-26l-3D01b-2Def6-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=BBsH3jTzE1KDIJ\\_TsbdiHwDSQgQaNxOvPbWOUxEFFP0&s=4JsthZae10FI5BZVJ7s22EpOyKZ1oqnSEOYnsfaA0Jo&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019050802nasa-26r-3Demail-2D62fd-26l-3D01b-2Def6-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=BBsH3jTzE1KDIJ_TsbdiHwDSQgQaNxOvPbWOUxEFFP0&s=4JsthZae10FI5BZVJ7s22EpOyKZ1oqnSEOYnsfaA0Jo&e=>) (5/7) “Science fiction books and films have frequently featured the threat of a giant asteroid colliding with our planet and making humans go the way of the dinosaurs. But smaller space rocks also pose threats, and they tend to be harder to spot in advance. A massive asteroid on a collision course would sail through our atmosphere and explosively burst in the air or crater the ground. Its invasion would initiate blasts of fire and thermal radiation, and likely cause numerous casualties. Even asteroids falling into the ocean could drive tsunamis or earthquakes – and even create undersea craters.”

## NASA Says 'No Image Will Surpass This' Largest-Ever View Of Space

Thrillist <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019050802nasa-26r-3Demail-2D62fd-26l-3D01c-2D570-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=BBsH3jTzE1KDIJ\\_TsbdiHwDSQgQaNxOvPbWOUxEFFP0&s=jJWBShpnASAhosNz384R3zNoI\\_\\_Ppa-hhFKemS4EDnw&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019050802nasa-26r-3Demail-2D62fd-26l-3D01c-2D570-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=BBsH3jTzE1KDIJ_TsbdiHwDSQgQaNxOvPbWOUxEFFP0&s=jJWBShpnASAhosNz384R3zNoI__Ppa-hhFKemS4EDnw&e=>) (5/7, Nelson) “There might not be a telescope as widely known as the Hubble Space Telescope. Using 16 years of data from Hubble, originally launched in 1990, astronomers have assembled the widest and most detailed image of space ever created. The image, seen in its entirety below, is a composite made of almost 7,500 individual images, according to a NASA statement.”

## NASA Puts SLS Europa Clipper Option In The Wind Tunnel

NASA Space Flight <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019050802nasa-26r-3Demail-2D62fd-26l-3D01d-2D3ce-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=BBsH3jTzE1KDIJ\\_TsbdiHwDSQgQaNxOvPbWOUxEFFP0&s=yrysa5LLjTb0NM6rm92QBqOvTydBn14rDWHvzvb\\_SE8&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019050802nasa-26r-3Demail-2D62fd-26l-3D01d-2D3ce-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=BBsH3jTzE1KDIJ_TsbdiHwDSQgQaNxOvPbWOUxEFFP0&s=yrysa5LLjTb0NM6rm92QBqOvTydBn14rDWHvzvb_SE8&e=>) (5/5) “NASA engineers at the Langley Research Center in Hampton, Virginia, recently completed one set of wind tunnel tests in a series on the aerodynamics of the newest Space Launch System (SLS) vehicle configuration. Data was collected during several hundred supersonic test runs in the Unitary Plan Wind Tunnel at Langley of a scale model of the Block 1 Cargo vehicle that is the currently mandated booster for the upcoming Europa Clipper mission.”

## NASA Reaches Out To Touch The Sun

ZDNet <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019050802nasa-26r-3Demail-2D62fd-26l-3D01e-2D4bc-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=BBsH3jTzE1KDIJ\\_TsbdiHwDSQgQaNxOvPbWOUxEFFP0&s=eFIDQKHYYh9F30Pml\\_u62z\\_IGNsNflvomoRZvzVmYg&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019050802nasa-26r-3Demail-2D62fd-26l-3D01e-2D4bc-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=BBsH3jTzE1KDIJ_TsbdiHwDSQgQaNxOvPbWOUxEFFP0&s=eFIDQKHYYh9F30Pml_u62z_IGNsNflvomoRZvzVmYg&e=>) (5/7) “NASA reaches out to touch the Sun. I'm Tonya Hall, and joining me is Dr. Nikki Fox, Director of the Heliophysics Division, Science Mission Directorate at NASA. Welcome Nikki. ... The last time we spoke you were still at Johns Hopkins Applied Physics Lab, working on the Parker Solar Probe.”

## Blue Supergiant Stars Open Doors To Concert In Space

Space Daily <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019050802nasa-26r-3Demail-2D62fd-26l-3D01f-2D9bd-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=BBsH3jTzE1KDIJ\\_TsbdiHwDSQgQaNxOvPbWOUxEFFP0&s=UbfR2OyUDid961zBnJqZUvJEdaBkEcvMfdVSuZJmQYI&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019050802nasa-26r-3Demail-2D62fd-26l-3D01f-2D9bd-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=BBsH3jTzE1KDIJ_TsbdiHwDSQgQaNxOvPbWOUxEFFP0&s=UbfR2OyUDid961zBnJqZUvJEdaBkEcvMfdVSuZJmQYI&e=>)> (5/7) “Blue supergiants are rock-and-roll: they live fast and die young. This makes them rare and difficult to study. Before space telescopes were invented, few blue supergiants had been observed, so our knowledge of these stars was limited. Using recent NASA space telescope data, an international team led by KU Leuven studied the sounds originating inside these stars and discovered that almost all blue supergiants shimmer in brightness because of waves on their surface.”

## Habitability Of Planets Will Depend On Their Interiors

Universe Today <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019050802nasa-26r-3Demail-2D62fd-26l-3D020-2Da3b-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=BBsH3jTzE1KDIJ\\_TsbdiHwDSQgQaNxOvPbWOUxEFFP0&s=LsCvwPfur8idscDMGoE3XP9j5fFd0BCtlUJEJfKExFk&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019050802nasa-26r-3Demail-2D62fd-26l-3D020-2Da3b-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=BBsH3jTzE1KDIJ_TsbdiHwDSQgQaNxOvPbWOUxEFFP0&s=LsCvwPfur8idscDMGoE3XP9j5fFd0BCtlUJEJfKExFk&e=>)> (5/7) “A lot of the headlines and discussion around the habitability of exoplanets is focused on their proximity to their star and on the presence of water. It makes sense, because those are severely limiting factors. But those planetary characteristics are really just a starting point for the habitable/not habitable discussion. What happens in a planet’s interior is also important.”

## NASA Asteroid Tracker: LOOK OUT As Asteroid Bigger Than Pyramids Skims Earth On Thursday

Daily Express (UK) <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019050802nasa-26r-3Demail-2D62fd-26l-3D021-2Ddb4-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=BBsH3jTzE1KDIJ\\_TsbdiHwDSQgQaNxOvPbWOUxEFFP0&s=4htK5-UfQO6O4eGAlv0wGh01EssKC3boHGpSds4cad0&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019050802nasa-26r-3Demail-2D62fd-26l-3D021-2Ddb4-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=BBsH3jTzE1KDIJ_TsbdiHwDSQgQaNxOvPbWOUxEFFP0&s=4htK5-UfQO6O4eGAlv0wGh01EssKC3boHGpSds4cad0&e=>)> (5/7, Kettley) “The imposing asteroid, dubbed by NASA Asteroid 2008 HS3, is flying towards Earth on a so-called “Earth Close Approach”. NASA predicts HS3 will shoot past our home planet in the late hours of Thursday, May 9. The US space agency’s asteroid trackers further estimate HS3 will close in on Earth around 11.03pm BST. This piece of information is absolutely vital because the asteroid measures somewhere in the range of 393.7ft to 886ft (120m to 270m) in diameter.”

## Breathtaking Image Of Jupiter ‘Marble’ Shows Stormy Planet In All Its Glory

Daily Mirror (UK) <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019050802nasa-26r-3Demail-2D62fd-26l-3D022-2D029-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=BBsH3jTzE1KDIJ\\_TsbdiHwDSQgQaNxOvPbWOUxEFFP0&s=7iJa3ttXPX15AzER2fkFAE91apjUbKMeBMFs4PAVqq4&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019050802nasa-26r-3Demail-2D62fd-26l-3D022-2D029-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=BBsH3jTzE1KDIJ_TsbdiHwDSQgQaNxOvPbWOUxEFFP0&s=7iJa3ttXPX15AzER2fkFAE91apjUbKMeBMFs4PAVqq4&e=>)> (5/8, Curtis) “A close-up image of Jupiter captured by NASA’s robotic space probe Juno shows the stormy planet in stunning detail. Most images of Jupiter are taken from far away, either from Earth or from a great enough distance that nearly half the planet is visible. However, this shot is composed from several

images taken relatively close in, where less than half of the planet was visible. 'From here, Jupiter still appears spherical but perspective distortion makes it look more like a marble,' said NASA."

## Space Tech

### With SpaceX Scrub, NASA Again Demonstrates Commitment To Innovation

Ars Technica <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019050802nasa-26r-3Demail-2D62fd-26l-3D023-2D2bd-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=BBsH3jTzE1KDIJ\\_TsbdiHwDSQgQaNxOvPbWOUxEFFP0&s=vgUZzvaYR8dXwi8Ra9Ib\\_U PtfntqmhWAbhbQjIzHe-U&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019050802nasa-26r-3Demail-2D62fd-26l-3D023-2D2bd-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=BBsH3jTzE1KDIJ_TsbdiHwDSQgQaNxOvPbWOUxEFFP0&s=vgUZzvaYR8dXwi8Ra9Ib_U PtfntqmhWAbhbQjIzHe-U&e=>) (5/7) "During the wee hours of Friday morning, as the clock counted down toward the launch of a Falcon 9 rocket, SpaceX engineers worked frantically at their control stations. They tracked the health of the rocket, the status of fuel loading, the nearby weather, and more for the mission to deliver supplies to the International Space Station. 'There was a lot going on, and I've got to applaud them because everything that was hitting the screen they were dealing with,' the senior NASA figure at the launch, Kenny Todd, recalled later during a news conference."

### NASA Eyes Soft Robots For Dirty Jobs On The Moon And Mars

CNET News <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019050802nasa-26r-3Demail-2D62fd-26l-3D024-2Dd88-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=BBsH3jTzE1KDIJ\\_TsbdiHwDSQgQaNxOvPbWOUxEFFP0&s=gRj2I5\\_dED\\_0J8jB2HC2kSH HSYoYImPuPwaUI8MccHI&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019050802nasa-26r-3Demail-2D62fd-26l-3D024-2Dd88-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=BBsH3jTzE1KDIJ_TsbdiHwDSQgQaNxOvPbWOUxEFFP0&s=gRj2I5_dED_0J8jB2HC2kSH HSYoYImPuPwaUI8MccHI&e=>) (5/7, Kooser) "The future of robots in space might not look much like R2-D2, Wall-E and Robby. They may look more like giant squishy worms. NASA Langley Research Center interns Chuck Sullivan and Jack Fitzpatrick are developing soft robot designs that could one day handle 'dangerous, dirty or dull' tasks in space, on the moon and even on Mars."

### The Paraglider That NASA Could Have Used, But Didn't, To Bring Astronauts Back To Earth

Smithsonian <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019050802nasa-26r-3Demail-2D62fd-26l-3D025-2D715-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=BBsH3jTzE1KDIJ\\_TsbdiHwDSQgQaNxOvPbWOUxEFFP0&s=jaI6GQyo98B0nccyGYevP1yi6il1AcWNMiyHfKJDIk0&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019050802nasa-26r-3Demail-2D62fd-26l-3D025-2D715-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=BBsH3jTzE1KDIJ_TsbdiHwDSQgQaNxOvPbWOUxEFFP0&s=jaI6GQyo98B0nccyGYevP1yi6il1AcWNMiyHfKJDIk0&e=>) (5/7, Vaughn) "Holding it at arm's length above his head, Francis Rogallo's finger tips carefully gripped each wing of a silver, diamond-shaped glider. It was late spring in 1959, and the NASA aeronautical engineer was about to launch a small model of his parachute-like glider, just as he had done a thousand times before – limp wings held apart, a small payload suspended by a few lines in front of his head. The tinfoil texture of the newly developed mylar crackled slightly as the model took flight."

### Venus Missions? Interstellar Probes? Here Are 18 Wild Space Tech Ideas NASA Is Looking At

SPACE <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019050802nasa-26r-3Demail-2D62fd-26l-3D026-2D913-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=BBsH3jTzE1KDIJ\\_TsbdiHwDSQgQaNxOvPbWOUxEFFP0&s=vB3iPerGQ3866KRgJcg8J3J](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019050802nasa-26r-3Demail-2D62fd-26l-3D026-2D913-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=BBsH3jTzE1KDIJ_TsbdiHwDSQgQaNxOvPbWOUxEFFP0&s=vB3iPerGQ3866KRgJcg8J3J)

lv7gNRtOeN909JrkS64k&e=> (5/7) "Lunar ice mining, smart spacesuits, 'solar surfing' spacecraft and advanced exoplanet finders are a few of the early stage space technologies whose research NASA has chosen to help fund this year. Through the NASA Innovative Advanced Concepts (NIAC) program, the agency has offered funds to 18 project proposals. The projects are aimed to design and test technology concepts for potential future NASA missions."

#### Space Robotics Market Worth Over \$3.5bn By 2025

Space Daily <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019050802nasa-26r-3Demail-2D62fd-26l-3D027-2Dbab-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=BBsH3jTzE1KDIJ\\_TsbdiHwDSQgQaNxOvPbWOUxEFFP0&s=\\_ujulEKfKmgwVxCrYvdk-9QJfoG-Q5W-ARPr\\_XKPeE&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019050802nasa-26r-3Demail-2D62fd-26l-3D027-2Dbab-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=BBsH3jTzE1KDIJ_TsbdiHwDSQgQaNxOvPbWOUxEFFP0&s=_ujulEKfKmgwVxCrYvdk-9QJfoG-Q5W-ARPr_XKPeE&e=>)> (5/7) "According to a new research report by the market research and strategy consulting firm, Global Market Insights, Inc, the Space Robotics Market worth over \$3.5bn by 2025. The space robotics market is experiencing a rapid technical development owing to the integration of AI technologies into the systems developed for space exploration. Several companies are developing AI-based robots that provide enhanced mobility and manipulation benefits."

#### Various

Our Satellites Are Prime Targets For A Cyberattack. And Things Could Get Worse.

Washington Post <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019050802nasa-26r-3Demail-2D62fd-26l-3D028-2Ddc9-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=BBsH3jTzE1KDIJ\\_TsbdiHwDSQgQaNxOvPbWOUxEFFP0&s=9siL\\_c6sqyXdXDWnYg-AvdZ0FU1ZVILXJ-u3VIGN4oo&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019050802nasa-26r-3Demail-2D62fd-26l-3D028-2Ddc9-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=BBsH3jTzE1KDIJ_TsbdiHwDSQgQaNxOvPbWOUxEFFP0&s=9siL_c6sqyXdXDWnYg-AvdZ0FU1ZVILXJ-u3VIGN4oo&e=>)> (5/7, Falco) "Gregory Falco is a cyber research fellow at Harvard University's Belfer Center and a postdoctoral security researcher at the Massachusetts Institute of Technology's Computer Science and Artificial Intelligence Laboratory. He is the founder and chief executive of NeuroMesh, a tech security company. One minute. That's how long it took me last month to demonstrate to a major broadcasting company and production team how to access and restart a leading satellite Internet provider's control system. Five minutes is how long it took me to demonstrate how to gain full control of it."

#### White House Plan Called For NASA To Simulate Asteroid Collision With US

The Hill <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019050802nasa-26r-3Demail-2D62fd-26l-3D029-2D22a-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=BBsH3jTzE1KDIJ\\_TsbdiHwDSQgQaNxOvPbWOUxEFFP0&s=y-wNPUz9LdNnFJ6vByj3Rfdz0nLJ-hwW6DlfmV-fABS&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019050802nasa-26r-3Demail-2D62fd-26l-3D029-2D22a-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=BBsH3jTzE1KDIJ_TsbdiHwDSQgQaNxOvPbWOUxEFFP0&s=y-wNPUz9LdNnFJ6vByj3Rfdz0nLJ-hwW6DlfmV-fABS&e=>)> (5/7, Frazin) "The White House asked NASA to simulate what would happen if an asteroid hit Earth in 2027 as part of the White House's National Near-Earth Object Preparedness Strategy and Action Plan, and the simulation took place last week, according to USA Today. In the College Park, Md., demonstration, an asteroid became a threat and was expected to hit Denver. The simulation team fired spacecrafts to try to divert the 140- to 260-meter space rock, but part of it chipped off and headed for New York City. By the end, researchers decided in the fictional scenario to evacuate the city."

#### New York City Has Been Obliterated In A New Asteroid-Impact Simulation

SPACE <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019050802nasa-26r-3Demail-2D62fd-26l-3D02a-2D2ee-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=BBsH3jTzE1KDIJ\\_TsbdiHwDSQgQaNxOvPbWOUxEFFP0&s=y-wNPUz9LdNnFJ6vByj3Rfdz0nLJ-hwW6DlfmV-fABS&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019050802nasa-26r-3Demail-2D62fd-26l-3D02a-2D2ee-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROYus&m=BBsH3jTzE1KDIJ_TsbdiHwDSQgQaNxOvPbWOUxEFFP0&s=y-wNPUz9LdNnFJ6vByj3Rfdz0nLJ-hwW6DlfmV-fABS&e=>)>



8-mHkTTiYCEf5ROyus&m=BBsH3jTzE1KDIJ\_TsbdiHwDSQgQaNxOvPbWOUxEFFP0&s=C3oF6Lkc8N7h5pITC\_-xvkZp0CC9PXGtITRJE8IBPwg&e=> (5/7) "New York City, home to 8.6 million people and one hot duck, has perished in an apocalyptic meteor strike ... in a simulation. Over the past week, some 200 space experts from NASA, the European Space Agency (ESA) and other organizations have been melding their minds in order to face the crisis of a hypothetical asteroid barreling through space toward North America. The gathering, called the International Academy of Astronautics Planetary Defense Conference, convenes every year with the not-so-simple task of figuring out how to save Earth from a head-on asteroid impact – sort of like war games, but on a planetary scale."

NASA Simulated The Terrifying Scenario Of A 260-meter-wide Asteroid Hurling Toward Earth, Exploring What Would Happen If A Fragment Broke Off And Hit New York

Business Insider <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019050802nasa-26r-3Demail-2D62fd-26l-3D02b-2D6b6-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=BBsH3jTzE1KDIJ\\_TsbdiHwDSQgQaNxOvPbWOUxEFFP0&s=wpbQxv8quhWW0betMQVUjKbmJ0bmBQtCNIDUzo1n990&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019050802nasa-26r-3Demail-2D62fd-26l-3D02b-2D6b6-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=BBsH3jTzE1KDIJ_TsbdiHwDSQgQaNxOvPbWOUxEFFP0&s=wpbQxv8quhWW0betMQVUjKbmJ0bmBQtCNIDUzo1n990&e=>)> (5/7, Baker) "NASA simulated the terrifying scenario of attempting to stop an asteroid from hitting earth but in the process breaking off a fragment that hurtles toward New York and forces an evacuation of the entire city. In an exercise at April's Planetary Defense Conference, participants from NASA, the Federal Emergency Management Agency, and other federal agencies were given eight years to try and stop an asteroid from hitting the earth. But when NASA and space agencies around the world came together to deflect the asteroid, they caused a chunk to split off."

Nasa Tested To See If It Could Protect New York From A Giant Meteor. It Failed

Independent (UK) <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019050802nasa-26r-3Demail-2D62fd-26l-3D02c-2D2ea-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=BBsH3jTzE1KDIJ\\_TsbdiHwDSQgQaNxOvPbWOUxEFFP0&s=PALdlYbdRqzhU8k9rHeYicmq1o4edPqsjeE-gbC-Joo&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019050802nasa-26r-3Demail-2D62fd-26l-3D02c-2D2ea-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=BBsH3jTzE1KDIJ_TsbdiHwDSQgQaNxOvPbWOUxEFFP0&s=PALdlYbdRqzhU8k9rHeYicmq1o4edPqsjeE-gbC-Joo&e=>)> (5/7) "Nasa scientists and other world experts have failed to protect New York from a virtual asteroid that was part of a simulation of how the world would respond to such a disaster. Over the last week, experts from across governmental organisations were busy role-playing a huge asteroid heading towards Earth, with the power to destroy large parts of civilisation."

Why NASA Just Destroyed A Simulated New York City With A Huge Fake Asteroid

NBC News <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019050802nasa-26r-3Demail-2D62fd-26l-3D02d-2D06c-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=BBsH3jTzE1KDIJ\\_TsbdiHwDSQgQaNxOvPbWOUxEFFP0&s=07WQvyQLmMGfhGUReEJrOX4327Auy\\_otHPkUPBH9Lkl&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019050802nasa-26r-3Demail-2D62fd-26l-3D02d-2D06c-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=BBsH3jTzE1KDIJ_TsbdiHwDSQgQaNxOvPbWOUxEFFP0&s=07WQvyQLmMGfhGUReEJrOX4327Auy_otHPkUPBH9Lkl&e=>)> (5/7) "Don't panic – it was just a test. A make-believe asteroid 200 feet wide just plowed into a simulated New York City, sent there by NASA as part of an exercise to study what might happen if astronomers found a giant space rock heading toward Earth."

Pence Reaffirms Trump Administration's Support For Space

SPACE <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-)

3D2019050802nasa-26r-3Demail-2D62fd-26l-3D02e-2Da63-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=BBsH3jTzE1KDIJ\_TsbdiHwDSQgQaNxOvPbWOUxEFFP0&s=QGnlqtxaFgQBL70xjHfBzQB8iillRo\_4hz0YwiULBOaY&e=> (5/7) "Vice President Mike Pence used a speech at a major space industry conference Monday (May 6) to restate the Trump administration's space policy efforts without making any major new announcements. In a 20-minute luncheon keynote at the Satellite 2019 conference here, Pence outlined the various efforts the administration had taken in the last two years on space issues, from proposals to establish a Space Force to regulatory reform to his recent call of landing humans on the moon in the next five years."

Sen. Kevin Cramer: We Need A Space Force To Protect Our National Security

Fox News <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019050802nasa-26r-3Demail-2D62fd-26l-3D02f-2D1e2-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=BBsH3jTzE1KDIJ\\_TsbdiHwDSQgQaNxOvPbWOUxEFFP0&s=vwPu3cx8T7e7eBKQfsMT-rO-caahlhgDclCaNTvd8XE&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019050802nasa-26r-3Demail-2D62fd-26l-3D02f-2D1e2-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=BBsH3jTzE1KDIJ_TsbdiHwDSQgQaNxOvPbWOUxEFFP0&s=vwPu3cx8T7e7eBKQfsMT-rO-caahlhgDclCaNTvd8XE&e=>)> (5/7, Cramer) "America needs a Space Force and we need to develop it now. The Senate Armed Services Committee recently held a hearing on President Trump's proposal to establish the Space Force, and at the hearing our nation's military leadership agreed unanimously that this new branch of the military should be created. For years, Washington has debated the idea of a Space Force – both how it would work and whether it was necessary. It is clear now that we must move forward on turning the Space Force from an idea into a reality."

NASA Scientist Says Some UFO Sightings Can't Be Explained, And Aliens May Have Visited Us Already

Medium <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019050802nasa-26r-3Demail-2D62fd-26l-3D030-2D1b0-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=BBsH3jTzE1KDIJ\\_TsbdiHwDSQgQaNxOvPbWOUxEFFP0&s=rhBd6kG4KQBgADJ5VHTB3BDaYwNL6mRbQSR3gPyP0y4&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019050802nasa-26r-3Demail-2D62fd-26l-3D030-2D1b0-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=BBsH3jTzE1KDIJ_TsbdiHwDSQgQaNxOvPbWOUxEFFP0&s=rhBd6kG4KQBgADJ5VHTB3BDaYwNL6mRbQSR3gPyP0y4&e=>)> (5/6) "UFO sightings have become an ever-popular subject. Nearly all around the world, and on a daily basis, people report seeing mysterious lights, flashes, and objects in the sky. While some of these events can easily be explained as weather phenomena or aircraft, there are some sightings that simply put, can't be explained, and remain unidentified. Now, a NASA scientist has called out fellow experts because they are 'ignoring the relevance' of UFOs in a recently published paper which tells us that we can't possibly try to explain or deny every sighting of UFOs."

NASA Awards ATLAS Space Operations Space Operations Partnership

Space Daily <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019050802nasa-26r-3Demail-2D62fd-26l-3D031-2D98a-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=BBsH3jTzE1KDIJ\\_TsbdiHwDSQgQaNxOvPbWOUxEFFP0&s=hTsg0jjHeqtBLf\\_nyydZmf85tfLQvbBq\\_gnRcOrjmHk&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019050802nasa-26r-3Demail-2D62fd-26l-3D031-2D98a-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=BBsH3jTzE1KDIJ_TsbdiHwDSQgQaNxOvPbWOUxEFFP0&s=hTsg0jjHeqtBLf_nyydZmf85tfLQvbBq_gnRcOrjmHk&e=>)> (5/7) "ATLAS Space Operations, Inc., a leading innovator in communications for the space industry, today announced NASA has awarded it a contract for the Space Communications and Navigation (SCaN) Program's Space Relay Partnership and Services Study. Prime contractor ATLAS partnered in its proposal with Laser Light Communications, Inc, a leader in advanced optical communications and data distribution via its proprietary HALO Global Network."

Robert Zubrin Makes 'The Case For Space'

USA Today <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019050802nasa-26r-3Demail-2D62fd-26l-3D032-2D7ac-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=BBsH3jTzE1KDIJ\\_TsbdiHwDSQgQaNxOvPbWOUxEFFP0&s=Jr-lcvgiesDJs7w\\_xq2lwYtVe8v--CJb\\_Y7hdytLZyc&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019050802nasa-26r-3Demail-2D62fd-26l-3D032-2D7ac-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=BBsH3jTzE1KDIJ_TsbdiHwDSQgQaNxOvPbWOUxEFFP0&s=Jr-lcvgiesDJs7w_xq2lwYtVe8v--CJb_Y7hdytLZyc&e=>)> (5/7, Reynolds) “When future generations look back on our time, it’s unlikely that they’ll think much about Special Counsel Robert Mueller and Attorney General Bill Barr or most of the 22 candidates currently vying for the Democratic presidential nomination. After all, when we think about the Age of Exploration, we think about, well, the exploration: Mariners like Christopher Columbus, Ferdinand Magellan, Vasco da Gama, or John Cabot who boldly went where no European had gone before, knitting the entire globe into one network of commerce.”

#### Meet ‘Climate Elvis’: NASA Scientist By Day, Comedian By Night

Arizona Republic <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019050802nasa-26r-3Demail-2D62fd-26l-3D033-2Dd25-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=BBsH3jTzE1KDIJ\\_TsbdiHwDSQgQaNxOvPbWOUxEFFP0&s=zBuV4KPwfnTEdgmBhvDqFLLYj1GLo0Tp5wx1blAwVok&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019050802nasa-26r-3Demail-2D62fd-26l-3D033-2Dd25-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=BBsH3jTzE1KDIJ_TsbdiHwDSQgQaNxOvPbWOUxEFFP0&s=zBuV4KPwfnTEdgmBhvDqFLLYj1GLo0Tp5wx1blAwVok&e=>)> (5/7) “What do Josh Willis’ NASA colleagues and his fellow comedians have in common? They both quickly wore out the joke, ‘Don’t quit your day job.’ But Willis doesn’t mind – his day job is pretty sweet. Willis works at the Jet Propulsion Laboratory in Pasadena, California, studying how ocean temperatures affect Greenland’s massive glaciers – a project he’s dubbed Oceans Melting Greenland, or OMG.”

#### Neil Armstrong’s Son Recalls His ‘First Man’ Dad As Apollo 11 Items Go Up For Auction

SPACE <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019050802nasa-26r-3Demail-2D62fd-26l-3D034-2D70a-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=BBsH3jTzE1KDIJ\\_TsbdiHwDSQgQaNxOvPbWOUxEFFP0&s=Cx8Xa96sUPiGoFaRdt2QPuwa0PmwaTGesucTand\\_nwU&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019050802nasa-26r-3Demail-2D62fd-26l-3D034-2D70a-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=BBsH3jTzE1KDIJ_TsbdiHwDSQgQaNxOvPbWOUxEFFP0&s=Cx8Xa96sUPiGoFaRdt2QPuwa0PmwaTGesucTand_nwU&e=>)> (5/7) “When Neil Armstrong was the first astronaut to walk on the moon 50 years ago this summer, he became an overnight hero to the world. To his children, though, he remained their dad. Both sides of the famous astronaut show clearly in a new set of items for sale at Heritage Auctions from May 9 to 11, including American and state flags tucked away in the spacecraft during the flight, a leather jacket that the moonwalker enjoyed wearing constantly, and more. These items were carefully curated by the Armstrong family and required a lot of sorting before they were put up for sale.”

#### Other

#### Consortium To Develop “Space Sustainability” Rating System

Space News <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019050802nasa-26r-3Demail-2D62fd-26l-3D035-2Dd07-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=BBsH3jTzE1KDIJ\\_TsbdiHwDSQgQaNxOvPbWOUxEFFP0&s=K5j-LUx667Eu2aE3NAJMIKA8Upk7DZd4b7WYdSnrGYU&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019050802nasa-26r-3Demail-2D62fd-26l-3D035-2Dd07-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=BBsH3jTzE1KDIJ_TsbdiHwDSQgQaNxOvPbWOUxEFFP0&s=K5j-LUx667Eu2aE3NAJMIKA8Upk7DZd4b7WYdSnrGYU&e=>)> (5/7) “The World Economic Forum (WEF) has selected a consortium of companies, universities and agencies to develop a system to rate the sustainability of space systems, one that its backers hope will encourage good behavior in space. WEF announced May 6 that a team from the European Space Agency, together with one led by the Massachusetts Institute of Technology (MIT) Media Lab, will

work on development of a Space Sustainability Rating, a metric that will define how well an individual satellite, or satellite system, follows guidelines to ensure the long-term sustainability of space.”

#### A New Grading System Could Deter Satellite Operators From Junking Up Space

The Verge <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019050802nasa-26r-3Demail-2D62fd-26l-3D036-2D649-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=BBsH3jTzE1KDIJ\\_TsbdiHwDSQgQaNxOvPbWOUxEFFP0&s=l2QIEQPEBefcZukADBBVUOaro-jyvR0HA3qBoT66HJk&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019050802nasa-26r-3Demail-2D62fd-26l-3D036-2D649-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=BBsH3jTzE1KDIJ_TsbdiHwDSQgQaNxOvPbWOUxEFFP0&s=l2QIEQPEBefcZukADBBVUOaro-jyvR0HA3qBoT66HJk&e=>) (5/7) “As aerospace companies vow to fill Earth’s orbit with thousands of new satellites over the next decade, industry experts say it’s time to grade these operators on their efforts to keep space a safe and sustainable place. A rating system could keep companies honest, and ensure that Earth orbit remains open for business and doesn’t become bogged down with excess satellites and debris.”

#### Space Sustainability Rating Aims To Address Growing Amount Of Space Debris Orbiting Earth

Phys (UK) <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019050802nasa-26r-3Demail-2D62fd-26l-3D037-2D78c-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=BBsH3jTzE1KDIJ\\_TsbdiHwDSQgQaNxOvPbWOUxEFFP0&s=39rfmrMq1--iN9wRmiZt-eeFyE\\_Dn-eCHLGuJWaoAg&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019050802nasa-26r-3Demail-2D62fd-26l-3D037-2D78c-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=BBsH3jTzE1KDIJ_TsbdiHwDSQgQaNxOvPbWOUxEFFP0&s=39rfmrMq1--iN9wRmiZt-eeFyE_Dn-eCHLGuJWaoAg&e=>) (5/7) “The World Economic Forum has announced the introduction of a Space Sustainability Rating (SSR) system to help tackle the problem of space traffic and congestion in the Earth’s orbit. The announcement of the SSR and the participating collaborators was made today at the Satellite 2019 conference in Washington, D.C.”

#### India To Launch Lunar Mission That Would Be First To Explore Moon’s South Pole Region

NBC News <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019050802nasa-26r-3Demail-2D62fd-26l-3D038-2Db35-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=BBsH3jTzE1KDIJ\\_TsbdiHwDSQgQaNxOvPbWOUxEFFP0&s=PLn2H5wT4UwOnGCcM5hq qDkcoCT2L2Z5RhVU1WSZjy8&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019050802nasa-26r-3Demail-2D62fd-26l-3D038-2Db35-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=BBsH3jTzE1KDIJ_TsbdiHwDSQgQaNxOvPbWOUxEFFP0&s=PLn2H5wT4UwOnGCcM5hq qDkcoCT2L2Z5RhVU1WSZjy8&e=>) (5/7) “India is planning to send a spacecraft to the moon this summer, with a robotic lander and rover scheduled to touch down on the lunar surface in early September. If it’s successful, the Chandrayaan-2 mission will make India the fourth nation to land a craft on the moon. So far, only the United States, the former Soviet Union and China have pulled off the feat.”

#### India Sets July Launch Date For Moon Landing Attempt

Houston Chronicle <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019050802nasa-26r-3Demail-2D62fd-26l-3D039-2Dd88-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=BBsH3jTzE1KDIJ\\_TsbdiHwDSQgQaNxOvPbWOUxEFFP0&s=tMaJV7h8z9Expt\\_D7VHLDo wwn\\_hgONxvUG5nhYHFFuE&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019050802nasa-26r-3Demail-2D62fd-26l-3D039-2Dd88-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=BBsH3jTzE1KDIJ_TsbdiHwDSQgQaNxOvPbWOUxEFFP0&s=tMaJV7h8z9Expt_D7VHLDo wwn_hgONxvUG5nhYHFFuE&e=>) (5/7, Stuckey) “Officials in India have announced that their mission to land on the surface of the moon now is scheduled for mid-July, according to news reports. The Chandrayaan-2 mission consists of an orbiter, lander and rover that will explore the moon’s south pole. It is now set to launch from Sriharikota – a barrier island off the Bay of Bengal --between July 9 and July 16. It would land on the moon Sept. 6, according to The Times of India, an English-language daily newspaper based in Mumbai.”

## Telescopes In Space For Even Sharper Images Of Black Holes

Space Daily <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019050802nasa-26r-3Demail-2D62fd-26l-3D03a-2D1c2-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=BBsH3jTzE1KDIJ\\_TsbdiHwDSQgQaNxOvPbWOUxEFFP0&s=eKUA1vY1Mx\\_0pfqp9zOB5mCgwLk5d-gce6KeQw8q6LQ&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019050802nasa-26r-3Demail-2D62fd-26l-3D03a-2D1c2-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=BBsH3jTzE1KDIJ_TsbdiHwDSQgQaNxOvPbWOUxEFFP0&s=eKUA1vY1Mx_0pfqp9zOB5mCgwLk5d-gce6KeQw8q6LQ&e=>) (5/7) “Astronomers have just managed to take the first image of a black hole, and now the next challenge facing them is how to take even sharper images, so that Einstein’s Theory of General Relativity can be tested. Radboud University astronomers, along with the European Space Agency (ESA) and others, are putting forward a concept for achieving this by launching radio telescopes into space. They publish their plans in the scientific journal Astronomy and Astrophysics.”

## See A Comet Cat And Other Amazing Rosetta Views In This 70,000-Photo Archive

SPACE <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019050802nasa-26r-3Demail-2D62fd-26l-3D03b-2D96f-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=BBsH3jTzE1KDIJ\\_TsbdiHwDSQgQaNxOvPbWOUxEFFP0&s=7yG\\_wyeanNs9tZtvjZL7G1A07p6bBSdDswWJ4sUB47A&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019050802nasa-26r-3Demail-2D62fd-26l-3D03b-2D96f-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=BBsH3jTzE1KDIJ_TsbdiHwDSQgQaNxOvPbWOUxEFFP0&s=7yG_wyeanNs9tZtvjZL7G1A07p6bBSdDswWJ4sUB47A&e=>) (5/7) “Can you spot a cat in this cosmic image? This photo – just one of 70,000 available in a new Rosetta spacecraft image archive – has a cometary view that looks like a cat’s face from side-on. The two ‘ears’ visible near the top of the image are actually twin peaks on each side of the C. Alexander Gate, a feature named after Claudia Alexander, a Rosetta project scientist who died in July 2015. Rosetta was less than 12.5 miles (20 kilometers) from the comet’s surface when it got this image, back in 2014.”

## Watch Japan’s 1st Private Rocket Launch Into Space (Video)

SPACE <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019050802nasa-26r-3Demail-2D62fd-26l-3D03c-2D69c-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=BBsH3jTzE1KDIJ\\_TsbdiHwDSQgQaNxOvPbWOUxEFFP0&s=vIRjtKvbnTzKYIVpqdYrPL-HP18uVUNfzTvne\\_b0xzl&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019050802nasa-26r-3Demail-2D62fd-26l-3D03c-2D69c-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=BBsH3jTzE1KDIJ_TsbdiHwDSQgQaNxOvPbWOUxEFFP0&s=vIRjtKvbnTzKYIVpqdYrPL-HP18uVUNfzTvne_b0xzl&e=>) (5/7) “The Japanese space startup Interstellar Technologies Inc. just became the country’s first private company to successfully launch a rocket into space. In the company’s third attempt to launch its experimental sounding rocket, named ‘Momo,’ Interstellar Technologies managed to get the rocket off the ground and into space. The Momo-F3 rocket lifted off from a test site near the town of Taiki on Japan’s northern island of Hokkaido on May 4 at 5:45 a.m. local time (2045 GMT on May 3), company officials said in a statement.”

## Airbus To Build Multimission Satellite For MEASAT

Space Daily <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019050802nasa-26r-3Demail-2D62fd-26l-3D03d-2D20d-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=BBsH3jTzE1KDIJ\\_TsbdiHwDSQgQaNxOvPbWOUxEFFP0&s=rkh-QW1PYhR7HDIAY6ATHpdX49G\\_ixwEVlpszSVRUP50&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019050802nasa-26r-3Demail-2D62fd-26l-3D03d-2D20d-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=BBsH3jTzE1KDIJ_TsbdiHwDSQgQaNxOvPbWOUxEFFP0&s=rkh-QW1PYhR7HDIAY6ATHpdX49G_ixwEVlpszSVRUP50&e=>) (5/7) “Airbus has been selected by MEASAT Global Berhad (“MEASAT”), the leading Malaysian operator, to build MEASAT-3d, a new multimission telecommunications satellite to replace capacity and augment its core business in Malaysia, Asia, Middle East and Africa. Positioned at 91.5E collocated with MEASAT-3b, also built by Airbus, MEASAT-3d will deliver improved performances to progressively replace MEASAT-3 and MEASAT-3a, supporting Asia’s premium DTH (direct to home) video distribution.”

## Ariane 6 Series Production Begins With First Batch Of 14 Launchers

Space Daily <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019050802nasa-26r-3Demail-2D62fd-26l-3D03e-2D9ca-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=BBsH3jTzE1KDIJ\\_TsbdiHwDSQgQaNxOvPbWOUxEFFP0&s=PdC\\_L6ZjFG7eybaZnSXTTMPOEejw8CrdTUWp6Uwgj-Y&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019050802nasa-26r-3Demail-2D62fd-26l-3D03e-2D9ca-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=BBsH3jTzE1KDIJ_TsbdiHwDSQgQaNxOvPbWOUxEFFP0&s=PdC_L6ZjFG7eybaZnSXTTMPOEejw8CrdTUWp6Uwgj-Y&e=>) (5/7) "Following the initial institutional and commercial launch orders for Ariane 6 obtained by Arianespace since the autumn of 2017, and the resolution of the ESA Council on April 17, 2019, related to the rocket's exploitation framework, ArianeGroup is starting to build the first series-production batch of 14 Ariane 6 launchers. These 14 launchers, scheduled to fly between 2021 and 2023, will be built in ArianeGroup plants in France and Germany, as well as in those of its European industrial partners in the 13 countries taking part in the Ariane 6 program."

## ESA's Gaia Spacecraft Accidentally Discovers 3 Asteroids While Gazing At Stars

Tech Times <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019050802nasa-26r-3Demail-2D62fd-26l-3D03f-2D47e-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=BBsH3jTzE1KDIJ\\_TsbdiHwDSQgQaNxOvPbWOUxEFFP0&s=T-f7FN5OMLh-Ve-Z0KllquCMGvZDAir70nXTGmD6QP4&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019050802nasa-26r-3Demail-2D62fd-26l-3D03f-2D47e-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=BBsH3jTzE1KDIJ_TsbdiHwDSQgQaNxOvPbWOUxEFFP0&s=T-f7FN5OMLh-Ve-Z0KllquCMGvZDAir70nXTGmD6QP4&e=>) (5/7, Carlos) "European Space Agency's Gaia satellite, originally meant to chart the stars, is also capable of sensing the presence and positions of multitudes of asteroids in the sky. In Gaia's second data release in 2018, astronomers not only mapped out nearly 1.7 billion of stars in the Milky Way galaxy, but also catalogued the positions and orbits of more than 14,000 asteroids in the solar system."

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## NASA Morning Briefing for Wednesday, May 29, 2019

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### Editor's Note

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## Former U.S. Sen. Bill Nelson Named To NASA Advisory Committee

Orlando (FL) Sentinel <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019052902nasa-26r-3Demail-2Db38a-26l-3D003-2D8e9-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=A-6ALeqW7vivvoaO0MycEKj\\_TghEk3e4YxwGyr9ecKU&s=Haak8kNm7hbUdfaHKBHpNaYmuyCsavXp-VSQ2MAs2I&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019052902nasa-26r-3Demail-2Db38a-26l-3D003-2D8e9-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=A-6ALeqW7vivvoaO0MycEKj_TghEk3e4YxwGyr9ecKU&s=Haak8kNm7hbUdfaHKBHpNaYmuyCsavXp-VSQ2MAs2I&e=>) (5/28, Lemongello, Herrera) "NASA's Advisory Council has seven committees including Human Exploration and Operations, Science and Aeronautics. Nelson will be a member-at-large of the council, where he will advise on 'all major program and policy issues before the agency, not just the Moon to Mars mission,' said Matthew Rydin, Bridenstine's press secretary."

## NASA Just Released A Hype Video For A Moon Mission That Probably Won't Happen

BGR <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019052902nasa-26r-3Demail-2Db38a-26l-3D004-2D9a5-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=A-6ALeqW7vivvoaO0MycEKj\\_TghEk3e4YxwGyr9ecKU&s=SOlmemMmlIouh4LcCBlopGBJhVZQMDa0PyKNs0qnD7A&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019052902nasa-26r-3Demail-2Db38a-26l-3D004-2D9a5-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=A-6ALeqW7vivvoaO0MycEKj_TghEk3e4YxwGyr9ecKU&s=SOlmemMmlIouh4LcCBlopGBJhVZQMDa0PyKNs0qnD7A&e=>) (5/28, Wehner) "NASA has planned on returning to the Moon for some time now, hashing out plans for its Lunar Gateway which will eventually serve as a jumping-off point for travelers headed to the Moon's surface. Then, back in March, the current presidential administration decided it wanted NASA to complete a return to the Moon as soon as possible, offering a mere five years to complete the task. The request was, to put it bluntly, absurd. NASA doesn't have the funding to pull it off, and even if it did it would require a truly monumental effort to meet the arbitrary deadline. Despite this, Trump-appointed NASA administrator Jim Bridenstine eagerly accepted the "challenge," and while everyone waits to see whether lawmakers will provide enough cash for a Moon 2024 mission to be possible, NASA just launched a hype video of sorts to assure everyone that a 2024 Moon mission is definitely, totally happening."

## NASA Gives Climate Change Skeptics The Melting Ice Data To Crunch Themselves

SlashGear <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019052902nasa-26r-3Demail-2Db38a-26l-3D005-2D913-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=A-6ALeqW7vivvoaO0MycEKj\\_TghEk3e4YxwGyr9ecKU&s=NO09RIFz4mPYNzPGEG\\_97NNf8jaf5zCfldtz\\_b2YvFA&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019052902nasa-26r-3Demail-2Db38a-26l-3D005-2D913-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=A-6ALeqW7vivvoaO0MycEKj_TghEk3e4YxwGyr9ecKU&s=NO09RIFz4mPYNzPGEG_97NNf8jaf5zCfldtz_b2YvFA&e=>) (5/28) "NASA has announced the availability of ICESat-2 global data containing height measurements for regions around the globe, including measurements of the sea ice around Antarctica and glaciers in Greenland. The Ice, Cloud, and land Elevation Satellite-2 (ICESat-2) was launched in September 2018; it uses 10,000 laser pulses per second to take height measurements in what NASA calls 'unprecedented detail.'"

Flight

No content.

Earth

## NASA Gives Climate Change Skeptics The Melting Ice Data To Crunch Themselves

SlashGear <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019052902nasa-26r-3Demail-2Db38a-26l-3D006-2D16c-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=A-6ALeqW7vivvoaO0MycEKj\\_TghEk3e4YxwGyr9ecKU&s=NO09RIFz4mPYNzPGEG\\_97NNf8jaf5zCfldtz\\_b2YvFA&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019052902nasa-26r-3Demail-2Db38a-26l-3D006-2D16c-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=A-6ALeqW7vivvoaO0MycEKj_TghEk3e4YxwGyr9ecKU&s=NO09RIFz4mPYNzPGEG_97NNf8jaf5zCfldtz_b2YvFA&e=>)

3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=A-6ALeqW7vivvoaO0MycEKj\_TghEk3e4YxwGyr9ecKU&s=jByb-902D2x5FomypMlosvxoRaldr8HY31RkUyqzTiU&e=> (5/28) "NASA has announced the availability of ICESat-2 global data containing height measurements for regions around the globe, including measurements of the sea ice around Antarctica and glaciers in Greenland. The Ice, Cloud, and land Elevation Satellite-2 (ICESat-2) was launched in September 2018; it uses 10,000 laser pulses per second to take height measurements in what NASA calls 'unprecedented detail.'"

#### First ICESat-2 Global Data Released: Ice, Forests And More

SpaceRef <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019052902nasa-26r-3Demail-2Db38a-26l-3D007-2D63f-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=A-6ALeqW7vivvoaO0MycEKj\\_TghEk3e4YxwGyr9ecKU&s=IUw9jwmoOjt1auAYJkRn6Q8Td0JLeHaHyhqTruV5bzM&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019052902nasa-26r-3Demail-2Db38a-26l-3D007-2D63f-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=A-6ALeqW7vivvoaO0MycEKj_TghEk3e4YxwGyr9ecKU&s=IUw9jwmoOjt1auAYJkRn6Q8Td0JLeHaHyhqTruV5bzM&e=>)> (5/28) "More than a trillion new measurements of Earth's height – blanketing everything from glaciers in Greenland, to mangrove forests in Florida, to sea ice surrounding Antarctica – are now available to the public. With millions more observations added each day, data from NASA's Ice, Cloud and land Elevation Satellite-2 is providing a precise global portrait of elevation and will allow scientists to track even the slightest changes in the planet's polar regions."

#### Scientists Observe Mysterious Fluorescent 'Glow' In Forests That Signals Coming Of Spring

Tech Times <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019052902nasa-26r-3Demail-2Db38a-26l-3D008-2D844-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=A-6ALeqW7vivvoaO0MycEKj\\_TghEk3e4YxwGyr9ecKU&s=n9ZDBHqGVNLgDp3yfkfuL7DkVKdMNC5Oyw-HT4ZNwSE&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019052902nasa-26r-3Demail-2Db38a-26l-3D008-2D844-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=A-6ALeqW7vivvoaO0MycEKj_TghEk3e4YxwGyr9ecKU&s=n9ZDBHqGVNLgDp3yfkfuL7DkVKdMNC5Oyw-HT4ZNwSE&e=>)> (5/28, Samson) "Forests store large amounts of carbon dioxide, a greenhouse gas that traps heat into the atmosphere and causes an increase in global temperature. To help combat climate change, a team of researchers has figured out a way to use satellites to monitor the Gross Primary Production or GPP, the amount of chemical energy produced through photosynthesis, in evergreen forests. By monitoring photosynthesis and GPP, scientists can more accurately track levels of global CO2."

#### Falling Meteor Breaks Up Over Australian Bay Releasing As Much Energy As 1.6 Kiloton Nuke

Tech Times <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019052902nasa-26r-3Demail-2Db38a-26l-3D009-2D6de-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=A-6ALeqW7vivvoaO0MycEKj\\_TghEk3e4YxwGyr9ecKU&s=wh-P2yZ\\_\\_zLC0RpITUUMg\\_dSsJmepIBEPp6fH14T39s&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019052902nasa-26r-3Demail-2Db38a-26l-3D009-2D6de-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=A-6ALeqW7vivvoaO0MycEKj_TghEk3e4YxwGyr9ecKU&s=wh-P2yZ__zLC0RpITUUMg_dSsJmepIBEPp6fH14T39s&e=>)> (5/28, Samson) "The meteor that lit up the sky in Australia last week had the calculated impact energy of 1.6 kilotons of explosive power. The Center for Near-Earth Object Studies in California recently released new data about the massive fireball that passed over the south coast of Australia on May 21. The NASA research center records the impact time, location, and amount of energy generated by the meteors that enter the Earth's atmosphere."

#### Humans in Space

#### Ed | ISS Doesn't Have To Be An FFRDC; It Has To Be Done Right

Space News <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019052902nasa-26r-3Demail-2Db38a-26l-3D00a-2D0cb-26t-](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019052902nasa-26r-3Demail-2Db38a-26l-3D00a-2D0cb-26t-)>

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(5/28) “Few terms in space policy – save maybe ‘commercial’ and ‘innovation’ – are used with quite so much zest and abandon as the term ‘FFRDC,’ or Federally Funded Research and Development Center. An FFRDC is a specific kind of independent research entity formed as public-private partnership with the federal government. There are currently 43 FFRDCs in operation and they are governed by Part 35.017 of the Federal Acquisitions Regulations.”

#### Investigation Into Crew Dragon Incident Continues

Space News <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019052902nasa-26r-3Demail-2Db38a-26l-3D00b-2Dcac-26t-](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019052902nasa-26r-3Demail-2Db38a-26l-3D00b-2Dcac-26t-)

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(5/28) “More than a month after a Crew Dragon spacecraft was destroyed in a test of its propulsion system, NASA and SpaceX investigators are still working to determine the cause of the accident and its implications for upcoming test flights. In a May 28 presentation to the NASA Advisory Council’s human exploration and operations committee, Kathy Lueders, manager of the commercial crew program at NASA, offered few updates on the progress of the investigation into the April 20 incident at a SpaceX pad at Cape Canaveral Air Force Station in Florida.”

#### SpaceX, NASA Finish Cleaning Up Site Of Crew Dragon Spacecraft Explosion

SPACE <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019052902nasa-26r-3Demail-2Db38a-26l-3D00c-2Dc57-26t-](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019052902nasa-26r-3Demail-2Db38a-26l-3D00c-2Dc57-26t-)

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8-mHkTTiYCEf5ROyus&m=A-

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(5/28) “The investigation into the destruction of SpaceX’s astronaut taxi last month is proceeding apace. On April 20, a Crew Dragon capsule exploded during a routine “static fire” test of the craft’s emergency-escape thrusters at Cape Canaveral Air Force Station in Florida. Nobody was hurt, but the spacecraft – which in March successfully flew an uncrewed test mission to the International Space Station (ISS) called Demo-1 – was lost.”

#### NASA Says SpaceX Readying Crew Dragon Capsule For Possible Piloted Test Flight By End Of Year

Spaceflight Now <[https://urldefense.proofpoint.com/v2/url?u=http-](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019052902nasa-26r-3Demail-2Db38a-26l-3D00d-2Daa9-26t-)

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3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD  
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(5/28) “In parallel with an on-going failure investigation, SpaceX is readying downstream Crew Dragon spacecraft for flight in hopes that corrective actions can be implemented in time to launch two astronauts to the International Space Station before the end of the year, a senior NASA manager said Tuesday. SpaceX successfully launched an uncrewed Crew Dragon to the station in March on a mission known as Demo 1 and was gearing up to launch that same vehicle on another uncrewed mission in June to test its emergency abort system. That test was intended to clear the way for an initial test flight – Demo 2 – with astronauts on board later this summer.”

#### NASA Says SpaceX Readying Crew Ship For Possible Flight By End Of Year

CBS News <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019052902nasa-26r-3Demail-2Db38a-26l-3D00e-2Daa9-26t-)

3Fm-3D2019052902nasa-26r-3Demail-2Db38a-26l-3D00e-2Dea0-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=A-6ALeqW7vivvoaO0MycEKj\_TghEk3e4YxwGyr9ecKU&s=uE4EWexCC2JGppChR2jJzTqGgKb6vJo\_i4QMOGdnU3Q&e=> (5/28, Harwood) "NASA says there's a chance SpaceX can launch two astronauts aboard the company's Crew Dragon capsule by the end of the year. But that assumes changes needed in the wake of a catastrophic test failure can be implemented in time. SpaceX successfully launched an unpiloted Crew Dragon to the station in March on a mission known as Demo 1 and was gearing up to launch that same vehicle on another unpiloted mission in June to test its emergency abort system. That test was intended to clear the way for an initial test flight – Demo 2 – with astronauts on board later this summer."

## Moon to Mars

### NASA Just Released A Hype Video For A Moon Mission That Probably Won't Happen

BGR <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019052902nasa-26r-3Demail-2Db38a-26l-3D00f-2D4d5-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=A-6ALeqW7vivvoaO0MycEKj\\_TghEk3e4YxwGyr9ecKU&s=WiTKrEXQDdKdtpyUmWhDHIJ\\_zsN6itGxulKVcGxdrBc&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019052902nasa-26r-3Demail-2Db38a-26l-3D00f-2D4d5-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=A-6ALeqW7vivvoaO0MycEKj_TghEk3e4YxwGyr9ecKU&s=WiTKrEXQDdKdtpyUmWhDHIJ_zsN6itGxulKVcGxdrBc&e=>)> (5/28, Wehner) "NASA has planned on returning to the Moon for some time now, hashing out plans for its Lunar Gateway which will eventually serve as a jumping-off point for travelers headed to the Moon's surface. Then, back in March, the current presidential administration decided it wanted NASA to complete a return to the Moon as soon as possible, offering a mere five years to complete the task. The request was, to put it bluntly, absurd. NASA doesn't have the funding to pull it off, and even if it did it would require a truly monumental effort to meet the arbitrary deadline. Despite this, Trump-appointed NASA administrator Jim Bridenstine eagerly accepted the "challenge," and while everyone waits to see whether lawmakers will provide enough cash for a Moon 2024 mission to be possible, NASA just launched a hype video of sorts to assure everyone that a 2024 Moon mission is definitely, totally happening."

### President Trump, Don't Rob Pell Grants To Fund NASA's Moon(shine) Program

USA Today <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019052902nasa-26r-3Demail-2Db38a-26l-3D010-2Df3d-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=A-6ALeqW7vivvoaO0MycEKj\\_TghEk3e4YxwGyr9ecKU&s=M52hwUUwsMtqda\\_kY2Z4FEMcaX38d8NSsxc4dlitJY&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019052902nasa-26r-3Demail-2Db38a-26l-3D010-2Df3d-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=A-6ALeqW7vivvoaO0MycEKj_TghEk3e4YxwGyr9ecKU&s=M52hwUUwsMtqda_kY2Z4FEMcaX38d8NSsxc4dlitJY&e=>)> (5/28) "Despite constrained budgets, these are remarkably good times for NASA. It has not had a fatality or a robotic mission failure in some time. And what it has had is a string of successes, including a Mars rover that roved the Red Planet for nearly 15 years and a Pluto flyby. It is looking forward to the 2021 launch of the James Webb Space Telescope, a huge upgrade over the Hubble Space Telescope, now three decades old. In fact, there's only one area where NASA looks suspect. On the human space flight front, its latest quest is to – redo what it did six times between 47 and 50 years ago by landing people on the moon. President Donald Trump is so keen on this mission that he wants \$1.6 billion diverted from Pell Grants to bring it to fruition by 2024."

### NASA: Sustained Presence On The Moon Will Be A Good Investment

Arizona Republic <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019052902nasa-26r-3Demail-2Db38a-26l-3D011-2D5f5-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=A-](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019052902nasa-26r-3Demail-2Db38a-26l-3D011-2D5f5-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=A-)>

6ALeqW7vivvoaO0MycEKj\_TghEk3e4YxwGyr9ecKU&s=QOf8wkLBES2YAt0uUWUSDNqLmYbn8kMvVgb0IYyfqgA&e=> (5/28) “America has a historic opportunity to put the first woman and next man on the moon’s surface by 2024. This time, to stay. NASA’s Artemis program focuses on new technologies that create jobs and secure U.S. leadership in exploration. The proposed budget amendment gives us the boost we need. Apollo spurred a technological revolution from which we still benefit – everything from satellites and computers to a threefold increase in students pursuing advanced degrees in science, technology, engineering and math. Yet when the last person walked the moon in 1972, there was no opportunity for a woman to participate.”

#### NASA Seeks A Rapid Launch Of A Lunar Lander

Space News <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019052902nasa-26r-3Demail-2Db38a-26l-3D012-2Dd92-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=A-6ALeqW7vivvoaO0MycEKj\\_TghEk3e4YxwGyr9ecKU&s=kZn1TJ9fidH\\_yYKclafbT40ETH51bhfoT5RJWtZ\\_jwl&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019052902nasa-26r-3Demail-2Db38a-26l-3D012-2Dd92-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=A-6ALeqW7vivvoaO0MycEKj_TghEk3e4YxwGyr9ecKU&s=kZn1TJ9fidH_yYKclafbT40ETH51bhfoT5RJWtZ_jwl&e=>) (5/28) “Although NASA’s new goal of landing humans on the moon in five years may sound aggressive, most of the hardware needed to carry out that mission is already, or soon will be, under development. The Space Launch System and Orion have been in the works for years and, despite delays, should be ready to transport astronauts to the moon by 2024. NASA is currently evaluating proposals for the first element of a now-minimized Gateway, the Power and Propulsion Element, and plans to award a contract by the summer. The only other element of that initial Gateway, a modest habitat and docking node, will likely be based on habitation module concepts several companies are currently developing.”

#### Astronauts Are Heading Under The Sea To Test Moon Mission Tech

SPACE <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019052902nasa-26r-3Demail-2Db38a-26l-3D013-2Dacd-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=A-6ALeqW7vivvoaO0MycEKj\\_TghEk3e4YxwGyr9ecKU&s=C2EqhcXsbwrZGkcJ3nCxwnnPMLHzEApZbw0D20tpais&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019052902nasa-26r-3Demail-2Db38a-26l-3D013-2Dacd-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=A-6ALeqW7vivvoaO0MycEKj_TghEk3e4YxwGyr9ecKU&s=C2EqhcXsbwrZGkcJ3nCxwnnPMLHzEApZbw0D20tpais&e=>) (5/28) “An astronaut-led crew will go underwater to get ready for human moon missions. The 10-day NASA Extreme Environment Mission Operations (NEEMO) 23 expedition is scheduled to begin June 10 and will test technologies NASA will use for lunar missions that could come as soon as 2024. Among the crew goals is testing science instruments and tools for work on the moon, including items that will help get ‘core samples’ – a cylindrical cross-section of the moon’s geology just below the surface – NASA officials said in a statement. Apollo astronauts who did lunar missions (between 1969 and 1972) obtained several core samples using a special device called the Apollo Lunar Surface Drill.”

#### Men, Women ... And Mars: How Gender Diversity Is Key For Success On The Red Planet

SPACE <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019052902nasa-26r-3Demail-2Db38a-26l-3D014-2D613-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=A-6ALeqW7vivvoaO0MycEKj\\_TghEk3e4YxwGyr9ecKU&s=StgGmdqQEpoofnqciCWa3cmXs2gxfoDARqPkV6uYrM&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019052902nasa-26r-3Demail-2Db38a-26l-3D014-2D613-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=A-6ALeqW7vivvoaO0MycEKj_TghEk3e4YxwGyr9ecKU&s=StgGmdqQEpoofnqciCWa3cmXs2gxfoDARqPkV6uYrM&e=>) (5/28) “Men and women have been working together in space for decades, but a growing body of research shows that there are important sex-based differences in how people react to spaceflight’s physical and psychological stressors. Crew composition, including factors such as gender and nationality, will be an essential consideration as NASA moves into more-remote space destinations, which is already happening. President Donald Trump’s administration recently tasked the agency to return astronauts to the moon in 2024. And the agency plans to go to Mars after that. To build the best Mars crew possible, more research is needed into how gender identity affects the way astronauts will work with

each other, researchers say. Putting people together in a team can introduce social interactions and issues that crews must resolve together.”

#### NASA Has A Full Plate Of Lunar Missions Before Astronauts Can Return To Moon

Fox News <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019052902nasa-26r-3Demail-2Db38a-26l-3D015-2D3c0-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=A-6ALeqW7vivvoaO0MycEKj\\_TghEk3e4YxwGyr9ecKU&s=U3T9H1V3SWOb-3tBmi9RjgpVH\\_ILMGD2iltuKoCOttA&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019052902nasa-26r-3Demail-2Db38a-26l-3D015-2D3c0-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=A-6ALeqW7vivvoaO0MycEKj_TghEk3e4YxwGyr9ecKU&s=U3T9H1V3SWOb-3tBmi9RjgpVH_ILMGD2iltuKoCOttA&e=>) (5/23, Weitering) “What will it take for NASA to put humans back on the moon? Aside from a still-undetermined sum of cash, the agency will need to launch about 37 moon missions between now and 2028, according to a launch manifest presented at a meeting of the NASA Advisory Council on Tuesday (May 21). The preliminary timeline, which was presented with an infographic labeled as ‘pre-decisional,’ is not yet set in stone. But it represents what some agency officials see as the best path to return astronauts to the moon in 2024 and build a sustainable presence on the moon via the Lunar Orbital Platform-Gateway by 2028.”

#### NASA Photo Showcases Landing Site For Mars 2020

UPI <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019052902nasa-26r-3Demail-2Db38a-26l-3D016-2D1d0-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=A-6ALeqW7vivvoaO0MycEKj\\_TghEk3e4YxwGyr9ecKU&s=caHTIkVAsnultjeE-ZZ16b104KjxSOJO1f11qA178&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019052902nasa-26r-3Demail-2Db38a-26l-3D016-2D1d0-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=A-6ALeqW7vivvoaO0MycEKj_TghEk3e4YxwGyr9ecKU&s=caHTIkVAsnultjeE-ZZ16b104KjxSOJO1f11qA178&e=>) (5/28, Hays) “A new photo captured by NASA’s Mars Reconnaissance Orbiter and shared online this week features the landing site for the space agency’s Mars 2020 mission. The Mars 2020 rover, scheduled to launch next year, is expected to land in the Jezero Crater, located in a region of Mars known as the Syrtis Major quadrangle. The crater is thought to have once been filled with water, and its watery history is visible in the sedimentary formations that texture its interior surface, as well as its outer contours. The new MRO image showcases the remnants of an ancient delta where in-flowing rivers once entered, bringing water and sediment.”

#### The Sand Dunes Of Mars Move In A Weird Way

SPACE <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019052902nasa-26r-3Demail-2Db38a-26l-3D017-2Db34-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=A-6ALeqW7vivvoaO0MycEKj\\_TghEk3e4YxwGyr9ecKU&s=\\_msDbFI3BgnPaKJTjUxuJy1fkMLdPhbSj-1aLZyu-cU&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019052902nasa-26r-3Demail-2Db38a-26l-3D017-2Db34-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=A-6ALeqW7vivvoaO0MycEKj_TghEk3e4YxwGyr9ecKU&s=_msDbFI3BgnPaKJTjUxuJy1fkMLdPhbSj-1aLZyu-cU&e=>) (5/28) “Martian sand dunes are blowing in the wind — but slowly, and based on factors that don’t affect sand movement here on Earth. Scientists tracked the movement of nearly 500 individual dunes, all using data gathered by NASA’s Mars Reconnaissance Orbiter. By studying the movement of all that sand, the researchers were able to compare the interaction between wind and sand on the Red Planet with the same interaction on Earth.”

#### Planetary Scientists Find Ancient Ice Caps Beneath Martian North Pole

Sci-News <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019052902nasa-26r-3Demail-2Db38a-26l-3D018-2D59e-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=A-6ALeqW7vivvoaO0MycEKj\\_TghEk3e4YxwGyr9ecKU&s=htr-laf35VHqP7g-U8M84I3y1-bfUf8tEOJXf\\_OesNk&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019052902nasa-26r-3Demail-2Db38a-26l-3D018-2D59e-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=A-6ALeqW7vivvoaO0MycEKj_TghEk3e4YxwGyr9ecKU&s=htr-laf35VHqP7g-U8M84I3y1-bfUf8tEOJXf_OesNk&e=>) (5/28) “Planetary researchers using data from the Shallow Radar (SHARAD) instrument on NASA’s Mars Reconnaissance Orbiter have discovered rich deposits of water ice and sand hundreds of million years old beneath the current ice cap in the north polar region of the Red Planet. Published journal Geophysical Research Letters, the findings are important because the layers of ice are a record of past Martian climate in much the same way

that tree rings are a record of past climate on Earth.”

### Boeing, Which Helped Put The First Men On The Moon, Works Toward A Return Trip

Houston Chronicle <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019052902nasa-26r-3Demail-2Db38a-26l-3D019-2D5ac-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=A-6ALeqW7vivvoaO0MycEKj\\_TghEk3e4YxwGyr9ecKU&s=\\_V8jhSfyLWc4fsOpJFqo9uhL1YlrtaknXkFBsH0BQSM&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019052902nasa-26r-3Demail-2Db38a-26l-3D019-2D5ac-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=A-6ALeqW7vivvoaO0MycEKj_TghEk3e4YxwGyr9ecKU&s=_V8jhSfyLWc4fsOpJFqo9uhL1YlrtaknXkFBsH0BQSM&e=>)> (5/29) “At a massive plant in New Orleans, encompassing 43 acres of manufacturing space, some 600 Boeing workers assemble rocket components for NASA’s Space Launch System — a vehicle destined for the moon and then Mars. It’s the same building where Boeing built the Saturn V rocket’s first-stage booster that put men on the moon 50 years ago. Boeing is often associated with commercial aviation, but the company has also been a longtime government contractor building and managing complex projects for NASA. Now, the Chicago aerospace company is entering the emerging sector of commercial space travel where NASA, and hopefully others, will be a customer.”

### Solar System and Beyond

#### Titanic Galactic Collision Left One Galaxy Twisted And Warped, Hubble Reveals

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#### Chandra Finds Stellar Duos Banished From Galaxies

Phys (UK) <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019052902nasa-26r-3Demail-2Db38a-26l-3D01b-2D073-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=A-6ALeqW7vivvoaO0MycEKj\\_TghEk3e4YxwGyr9ecKU&s=qsW40gFHzyq2gvGeGR9\\_U0Wxa6eyaVXRfPnWUlagwZM&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019052902nasa-26r-3Demail-2Db38a-26l-3D01b-2D073-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=A-6ALeqW7vivvoaO0MycEKj_TghEk3e4YxwGyr9ecKU&s=qsW40gFHzyq2gvGeGR9_U0Wxa6eyaVXRfPnWUlagwZM&e=>)> (5/28) “Scientists have found evidence that pairs of stars have been kicked out of their host galaxies. This discovery, made using data from NASA’s Chandra X-ray Observatory, is one of the clearest examples of stellar pairs being expelled from their galactic base. Astronomers use the term ‘binary’ system to refer to pairs of stars orbiting around each other. These stellar pairs can consist of combinations of stars like our Sun, or more exotic and denser varieties such as neutron stars or even black holes.”

#### Jupiter’s Great Red Spot Is Lashing Out As It Dies

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6ALeqW7vivvoaO0MycEKj\_TghEk3e4YxwGyr9ecKU&s=yjjS4CeJA9bt0AZ7vMlaYn50dkN\_s7AhwCEuWzE5a4s&e=> (5/28, Wehner) “Jupiter’s Great Red Spot is one of the most iconic features of any planet in our Solar System. The colossal, swirling storm has dominated Jupiter for years, and it’s one of the things we always expect to see when new images of Jupiter are published. Unfortunately, the spot is dying a slow and agonizing death, and it’s possible that it could be entirely gone within our lifetimes. The storm is running out of steam, and while astronomers are always striving to learn more about the mechanics of how Jupiter’s massive storms form and sustain themselves, it’s clear that the Great Red Spot’s days are numbered. Now, observations by veteran Jupiter observer Anthony Wesley seem to reveal the storm lashing out as it rotates in Jupiter’s atmosphere.”

#### Astronomers Discover 18 New Small Exoplanets In Kepler Data

Sci-News <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019052902nasa-26r-3Demail-2Db38a-26l-3D01d-2D1c3-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=A-6ALeqW7vivvoaO0MycEKj\\_TghEk3e4YxwGyr9ecKU&s=Ik4tnsw423XSvIKSscZk-4N9glM1457coyq8nrmOeUA&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019052902nasa-26r-3Demail-2Db38a-26l-3D01d-2D1c3-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=A-6ALeqW7vivvoaO0MycEKj_TghEk3e4YxwGyr9ecKU&s=Ik4tnsw423XSvIKSscZk-4N9glM1457coyq8nrmOeUA&e=>) (5/28) “A team of astronomers from the Max Planck Institute for Solar System Research, the Georg August University of Göttingen and Sonneberg Observatory has developed a new sensitive algorithm to search for transiting planets in data from NASA’s Kepler Space Telescope. In the first test of their new algorithm, the researchers reanalyzed the archival data from the extended Kepler mission, K2, for 490 planet-hosting stars and discovered 18 new sub- to super-Earth-sized planets.”

#### Astronomers Catch Distant Star Producing Massive Flare And Plasma Blob

SPACE <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019052902nasa-26r-3Demail-2Db38a-26l-3D01e-2D6e4-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=A-6ALeqW7vivvoaO0MycEKj\\_TghEk3e4YxwGyr9ecKU&s=cpTp57TQ-iZWmwcSYf8w3-Zykaww5-Tu5gv\\_ktPCvow&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019052902nasa-26r-3Demail-2Db38a-26l-3D01e-2D6e4-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=A-6ALeqW7vivvoaO0MycEKj_TghEk3e4YxwGyr9ecKU&s=cpTp57TQ-iZWmwcSYf8w3-Zykaww5-Tu5gv_ktPCvow&e=>) (5/28) “Astronomers may have spotted a distant star spitting out a giant flare that packed 100,000 times more energy than any seen from Earth’s sun, a new study finds. The researchers also said they’ve made the first clear detection of a remote star emitting a kind of eruption known as a coronal mass ejection that were until now only seen from our sun. Such explosions may wreak havoc on any surrounding worlds, lead author Costanza Argiroffi, an astrophysicist at the University of Palermo in Italy, told Space.com.”

#### Two Asteroids Just Shot Past Earth, Coming As Close As Nine Times The Distance To The Moon

Inquisitr <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019052902nasa-26r-3Demail-2Db38a-26l-3D01f-2D6ee-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=A-6ALeqW7vivvoaO0MycEKj\\_TghEk3e4YxwGyr9ecKU&s=HkBbV8ZwiR4SjwQjhMz97CUf-mtOPrBO\\_5-2lh8NMjQ&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019052902nasa-26r-3Demail-2Db38a-26l-3D01f-2D6ee-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=A-6ALeqW7vivvoaO0MycEKj_TghEk3e4YxwGyr9ecKU&s=HkBbV8ZwiR4SjwQjhMz97CUf-mtOPrBO_5-2lh8NMjQ&e=>) (5/28) “A pair of asteroids swooped past our planet today on what astronomers refer to as a “close Earth approach.” Classified as near-Earth objects (NEOs), the space rocks each performed a safe flyby of our planet, flying past Earth’s surface at several times the distance to the moon. According to NASA’s Center For Near-Earth Object Studies (CNEOS), the asteroids are both under 200 feet in diameter. Dubbed 2003 LH and 2019 JH8, the space rocks ventured through our corner of space at different times of the day and only managed to creep in within a few million miles of our home world.”

#### Space Companies Propose Ways To Fill Low Earth Orbit With Commercial Habitats

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(5/28) “The private space industry is giving NASA some ideas on how to turn low Earth orbit – where the International Space Station circulates above our planet – into an area filled with commercial habitats and platforms for future space travelers. Potentially, these “destinations” could be used as locations for in-space research and manufacturing to turn a profit. But such a commercial utopia in orbit won’t be easy until the cost of launching to space comes down, says NASA.”

Space Tech

Take A Look Inside The 3D Printed Habitat That Could Be Home For Astronauts Living On Mars

Mashable <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019052902nasa-26r-3Demail-2Db38a-26l-3D021-2Ddfb-26t-](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019052902nasa-26r-3Demail-2Db38a-26l-3D021-2Ddfb-26t-)

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\_A9jIbyg\_\_NQmsAbw9lel-Q&e=> (5/28, Humphreys) “Space Exploration Architecture (SEArch+) develops ‘human-centered’ living spaces for space exploration. Co-founder Melodie Yashar talks about winning NASA’s Centennial Challenge for 3D printed habitats, the importance of designing for human needs, and what it takes to safely house an astronaut on Mars.”

Momentum Grows For Nuclear Thermal Space Propulsion

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(5/28) “With congressional funding and industry support, nuclear thermal propulsion technology is making progress for potential use on future NASA deep space missions, although how it fits into the agency’s exploration architectures remains uncertain. The House Appropriations Committee approved May 22 a commerce, justice and science (CJS) appropriations bill that offers \$22.3 billion for NASA. That funding includes \$125 million for nuclear thermal propulsion development within the agency’s space technology program, compared to an administration request for no funding.”

Various

Former U.S. Sen. Bill Nelson Named To NASA Advisory Committee

Orlando (FL) Sentinel <[https://urldefense.proofpoint.com/v2/url?u=http-](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019052902nasa-26r-3Demail-2Db38a-26l-3D023-2D1b2-26t-)

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e=> (5/28, Lemongello, Herrera) “NASA’s Advisory Council has seven committees including Human Exploration and Operations, Science and Aeronautics. Nelson will be a member-at-large of the council, where he will advise on ‘all major program and policy issues before the agency, not just the Moon to Mars mission,’ said Matthew Rydin, Bridenstine’s press secretary.”

Other

## Lights In The Sky From Elon Musk's New Satellite Network Have Stargazers Worried

Phys (UK) <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019052902nasa-26r-3Demail-2Db38a-26l-3D024-2Da89-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=A-6ALeqW7vivvoaO0MycEKj\\_TghEk3e4YxwGyr9ecKU&s=VBAFpjiP7Z\\_wjrXdib8obBuhztnqBUBf6NaWHA7VAaM&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019052902nasa-26r-3Demail-2Db38a-26l-3D024-2Da89-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=A-6ALeqW7vivvoaO0MycEKj_TghEk3e4YxwGyr9ecKU&s=VBAFpjiP7Z_wjrXdib8obBuhztnqBUBf6NaWHA7VAaM&e=>)> (5/28) "The launch of 60 Starlink satellites by Elon Musk's SpaceX has grabbed the attention of people around the globe. The satellites are part of a fleet that is intended to provide fast internet across the world. Improved internet services sound great, and Musk is reported to be planning for up to 12,000 satellites in low Earth orbit. But this fleet of satellites could forever change our view of the heavens."

## SpaceX Satellites Pose New Headache For Astronomers

Breitbart <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019052902nasa-26r-3Demail-2Db38a-26l-3D025-2D122-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=A-6ALeqW7vivvoaO0MycEKj\\_TghEk3e4YxwGyr9ecKU&s=Sy5bAsyfaeZ\\_8cgUFYxPa115hJYFunQ3idLr-pb6YFg&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019052902nasa-26r-3Demail-2Db38a-26l-3D025-2D122-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=A-6ALeqW7vivvoaO0MycEKj_TghEk3e4YxwGyr9ecKU&s=Sy5bAsyfaeZ_8cgUFYxPa115hJYFunQ3idLr-pb6YFg&e=>)> (5/28) "It looked like a scene from a sci-fi blockbuster: an astronomer in the Netherlands captured footage of a train of brightly-lit SpaceX satellites ascending through the night sky this weekend, stunning space enthusiasts across the globe. But the sight has also provoked an outcry among astronomers who say the constellation, which so far consists of 60 broadband-beaming satellites but could one day grow to as many as 12,000, may threaten our view of the cosmos and deal a blow to scientific discovery."

## UFO 'Sightings' Explode As SpaceX Starlink 'Train' Appears

Fox News <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019052902nasa-26r-3Demail-2Db38a-26l-3D026-2Dc5f-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=A-6ALeqW7vivvoaO0MycEKj\\_TghEk3e4YxwGyr9ecKU&s=D9dpK4p58wRpQnUKm1xAplIYW2mDcHo1wzZergkphys&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019052902nasa-26r-3Demail-2Db38a-26l-3D026-2Dc5f-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=A-6ALeqW7vivvoaO0MycEKj_TghEk3e4YxwGyr9ecKU&s=D9dpK4p58wRpQnUKm1xAplIYW2mDcHo1wzZergkphys&e=>)> (5/28, Ciaccia) "Despite the hysteria, that wasn't a UFO that was seen over the Netherlands sky Saturday night. It's just the latest innovation from Elon Musk. Astronomer and author Marco Langbroek managed to capture an incredible image of Musk's SpaceX Starlink satellites after they were shortly deployed, showcasing them in a 'train-like' formation."

## Watch Dozens Of SpaceX's Starlink Satellites Speeding Through The Night Sky

BGR <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019052902nasa-26r-3Demail-2Db38a-26l-3D027-2Df43-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=A-6ALeqW7vivvoaO0MycEKj\\_TghEk3e4YxwGyr9ecKU&s=EyL9lu13I6oTJWBGXUz73xvp-WXcPgDJ6iKkDmj9vOQ&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019052902nasa-26r-3Demail-2Db38a-26l-3D027-2Df43-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=A-6ALeqW7vivvoaO0MycEKj_TghEk3e4YxwGyr9ecKU&s=EyL9lu13I6oTJWBGXUz73xvp-WXcPgDJ6iKkDmj9vOQ&e=>)> (5/28, Wehner) "Last week, SpaceX successfully launched its very first satellite-packed Starlink mission, with dozens of the tiny communications devices traveling to Earth orbit on top of a Falcon 9 rocket. It's the first of many such missions the company has planned, and eventually the pint-sized spacecraft will work in tandem to create a communications network that could provide high-speed internet to remote areas where no other options are available."

## Are Elon Musk And SpaceX About To Ruin Our View Of The Night Sky?

San Jose (CA) Mercury News <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019052902nasa-26r-3Demail-2Db38a-26l-3D028-2Dc1d-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=A-6ALeqW7vivvoaO0MycEKj\\_TghEk3e4YxwGyr9ecKU&s=WCLGmu3pPVlTcK1RIKIM3g1jvPaQXBxYxLKjXfAILzo&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019052902nasa-26r-3Demail-2Db38a-26l-3D028-2Dc1d-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=A-6ALeqW7vivvoaO0MycEKj_TghEk3e4YxwGyr9ecKU&s=WCLGmu3pPVlTcK1RIKIM3g1jvPaQXBxYxLKjXfAILzo&e=>)> (5/28) “Already, the first 60 of SpaceX’s planned 12,000 internet-delivery satellites have appeared as a decidedly unnatural string of lights in the night sky. Scientists worry the company’s plan to ring Earth with orbiting ‘Starlink’ devices will wreck our view of the cosmos. ‘It changes how the night sky looks,’ astronomer Ronald Drimmel from the Turin Astrophysical Observatory in Italy said in a new report by Forbes. ‘Starlink ... would ruin the sky for everyone on the planet.’”

## Elon Musk’s 12,000 Satellite Starlink ‘Train’ Looks Amazing, But Astronomers Are Concerned It Could Create A Dangerous Amount Of Debris

Business Insider <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019052902nasa-26r-3Demail-2Db38a-26l-3D029-2D900-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=A-6ALeqW7vivvoaO0MycEKj\\_TghEk3e4YxwGyr9ecKU&s=GUZlhm2G4Q9KbCZGwdkuSm2HidYZRzW5Qdx7Ns1fKNQ&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019052902nasa-26r-3Demail-2Db38a-26l-3D029-2D900-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=A-6ALeqW7vivvoaO0MycEKj_TghEk3e4YxwGyr9ecKU&s=GUZlhm2G4Q9KbCZGwdkuSm2HidYZRzW5Qdx7Ns1fKNQ&e=>)> (5/28) “Last week SpaceX launched 60 Starlink telecommunication satellites – the first major launch of its ambitious fleet of up to 12,000 satellites, with the goal to eventually create ultra-fast internet services around the world. The launch of the 227 kg (500 pound) satellites went off without a hitch, but a spectacular video of the ‘train’ of satellites above the Netherlands – taken by archaeologist and amateur astronomer Marco Langbroek – has sparked a discussion about the potential problems this Starlink fleet could cause in the night sky.”

## SpaceX Starlink Satellites Dazzle But May Cause Headaches For Astronomers

CNET News <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019052902nasa-26r-3Demail-2Db38a-26l-3D02a-2Dc57-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=A-6ALeqW7vivvoaO0MycEKj\\_TghEk3e4YxwGyr9ecKU&s=TWtF-O1XqIxx\\_V16HFGutEmpHA5BBev1vsDMoMk7z\\_Q&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019052902nasa-26r-3Demail-2Db38a-26l-3D02a-2Dc57-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=A-6ALeqW7vivvoaO0MycEKj_TghEk3e4YxwGyr9ecKU&s=TWtF-O1XqIxx_V16HFGutEmpHA5BBev1vsDMoMk7z_Q&e=>)> (5/28, Ryan) “Those aren’t an intelligent extraterrestrial army moving in to take over planet Earth – they’re just SpaceX’s Starlink satellites, designed to provide broadband services across the globe. The first batch of satellites were launched from Cape Canaveral, Florida, and deployed to orbit by a Falcon 9 rocket on May 23. Each contains a single solar array, which both captures and bounces sunlight off the satellites and, as a result, can sometimes be seen from Earth. On May 25, as the drifting luminescent army of satellites zoomed overhead, Dutch satellite tracker Marco Langbroek captured their marching, posting a stunning video to Vimeo.”

## SpaceX Ramps Up Operations In South Texas As Hopper Tests Loom

NASA Space Flight <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019052902nasa-26r-3Demail-2Db38a-26l-3D02b-2D944-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=A-6ALeqW7vivvoaO0MycEKj\\_TghEk3e4YxwGyr9ecKU&s=E2tiNO-agDpNkmySxIJPZd2wxCJRuq\\_e45qnlMu77fs&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019052902nasa-26r-3Demail-2Db38a-26l-3D02b-2D944-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=A-6ALeqW7vivvoaO0MycEKj_TghEk3e4YxwGyr9ecKU&s=E2tiNO-agDpNkmySxIJPZd2wxCJRuq_e45qnlMu77fs&e=>)> (5/27) “SpaceX is working a dual test flow for its new Super Heavy

and Starship systems, with construction ongoing in Florida while Starhopper prepares to restart test operations in Texas. Two orbital Starship prototypes are now in staggered stages of production while the first Super Heavy booster is set to begin construction in the next three months. However, the focus will soon return to Starhopper, as it prepares for an incremental series of untethered test hops.”

#### Russian Spacecraft Struck By Lightning Moments After Takeoff

New York Post <[#### See Lightning Zap A Russian Soyuz Rocket During Launch](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019052902nasa-26r-3Demail-2Db38a-26l-3D02c-2Ddaf-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=A-6ALeqW7vivvoaO0MycEKj_TghEk3e4YxwGyr9ecKU&s=ygEo5dCg3GMJmjrK8xPiJjy1CBSFNJ5g7oQtvY5Xgw&e=>(5/28, Brown) “Electrifying footage shows a Russian space rocket the moment it’s struck by lightning on takeoff. The Soyuz-2.1b rocket was zapped after launching Monday, officials said. The huge bolt appears to go right through the spacecraft, which carried a Glonass-M navigation satellite, as it continues its ascent.”</p></div><div data-bbox=)

CNET News <[#### Russian Rocket Gets Hit By Lightning, Continues Hurling Toward Space Like Nothing Happened](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019052902nasa-26r-3Demail-2Db38a-26l-3D02d-2D044-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=A-6ALeqW7vivvoaO0MycEKj_TghEk3e4YxwGyr9ecKU&s=rrC09kWKy12e5rrXcw_cUVxUh4jmupIHRThT9fmC884&e=>(5/28, Kooser) “It’s common for rocket launches to get scrubbed due to even slightly funky weather, but Russian space agency Roscosmos went ahead with a Soyuz rocket launch on Monday that attracted some serious fireworks. Roscosmos head Dmitry Rogozin posted video of the launch to his Twitter account and praised the teams behind the project. The footage shows a dramatic bolt of lightning striking the vehicle as it soars through the air.”</p></div><div data-bbox=)

Gizmodo <[#### Lightning Strikes Russian Soyuz Rocket During Satellite Launch](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019052902nasa-26r-3Demail-2Db38a-26l-3D02e-2D1ef-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=A-6ALeqW7vivvoaO0MycEKj_TghEk3e4YxwGyr9ecKU&s=7U-ao1kfomkmHv3BzlocR4ldUODXyQf9eZxBgQM3Um8&e=>(5/28, Dvorsky) “A Russian Soyuz-2-1b rocket was struck by lightning yesterday, just seconds after liftoff. Remarkably, the uncrewed rocket continued on its mission as if nothing had happened. The Soyuz-2-1b rocket – a modernized version of the tried-and-true Russian launch vehicle – took off from the Plesetsk Cosmodrome at 9:23 a.m. local time on Monday May 27, according to a translated statement issued by the Russian Ministry of Defence. The booster, equipped with a Fregat upper stage, delivered a replacement satellite for the GLONASS navigation system to orbit a few hours later.”</p></div><div data-bbox=)

Tech Times <[NASA Morning Briefing for  
Wednesday, May 29, 2019](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019052902nasa-26r-3Demail-2Db38a-26l-3D02f-2D5a3-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=A-6ALeqW7vivvoaO0MycEKj_TghEk3e4YxwGyr9ecKU&s=KgysCLiHCRrDt6ZTuFyDA1XOShXsBdoKbGy8OLSbcXU&e=>(5/28, Hermitanio) “Russia’s Soyuz rocket has successfully launched a navigation satellite GLONASS-M despite being hit by lightning. It was the 58th mission to maintain the GLONASS orbital navigation network. On May 27 at 9:23 a.m. Moscow time, the Soyuz-2-1b rocket lifted off from launching Pad 4, Site 43 into rainy skies over the Plesetsk</p></div><div data-bbox=)

Cosmodrome spaceport in northern Russia.”

## Russian Space Sector Plagued By Astronomical Corruption

Breitbart <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019052902nasa-26r-3Demail-2Db38a-26l-3D030-2D822-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=A-6ALeqW7vivvoaO0MycEKj\\_TghEk3e4YxwGyr9ecKU&s=R1p1Xx8Fuen6R2l6fc1CcaT1X-S817FSrJmvUgJNRnl&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019052902nasa-26r-3Demail-2Db38a-26l-3D030-2D822-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=A-6ALeqW7vivvoaO0MycEKj_TghEk3e4YxwGyr9ecKU&s=R1p1Xx8Fuen6R2l6fc1CcaT1X-S817FSrJmvUgJNRnl&e=>)> (5/27) “With millions of dollars missing and officials in prison or fleeing the country, Russia’s space sector is at the heart of a staggering embezzlement scheme that has dampened ambitions of recovering its Soviet-era greatness. For years, Moscow has tried to fix the industry that was a source of immense pride in the USSR. While it has bounced back from its post-Soviet collapse and once again become a major world player, the Russian space sector has recently suffered a series of humiliating failures.”

## How Russia (yes, Russia) Plans To Land Cosmonauts On The Moon By 2030

Ars Technica <[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_\\_mailview.bulletinintelligence.com\\_mailview.aspx-3Fm-3D2019052902nasa-26r-3Demail-2Db38a-26l-3D031-2Dc9e-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=A-6ALeqW7vivvoaO0MycEKj\\_TghEk3e4YxwGyr9ecKU&s=zuXsLDcD59kv4OgHcuDTqvEOlykP0nZm8NdS\\_wwQFmM&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A__mailview.bulletinintelligence.com_mailview.aspx-3Fm-3D2019052902nasa-26r-3Demail-2Db38a-26l-3D031-2Dc9e-26t-3Dc&d=DwMGaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=3DyH8PYCXgnwi3HZwsVD9OkpD8-mHkTTiYCEf5ROyus&m=A-6ALeqW7vivvoaO0MycEKj_TghEk3e4YxwGyr9ecKU&s=zuXsLDcD59kv4OgHcuDTqvEOlykP0nZm8NdS_wwQFmM&e=>)> (5/28) “Rockets for the Moon: developmental new vehicles (payload capacity to LEO in metric tons), including various Angara rockets, the Soyuz 5 booster, and Super Thrust Block 1 and Super Thrust Block 2. More details about the progression of rockets: 2022 – Soyuz 5, 17 metric tons to LEO; 2028 – Super Thrust Block 1, 27 metric tons to Lunar polar orbit and 103 tons to LEO; After 2030 – Super Thrust Block 2, greater than 27 tons to Lunar polar orbit and 140-180 tonnes to LEO.”

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## OIIR Weekly Update

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From: Gold, Michael N. (HQ-AA000) <michael.n.gold@nasa.gov>  
To: Bridenstine, James F. (HQ-AA000) <james.f.bridenstine@nasa.gov>  
Cc: Morhard, James W. (HQ-AB000) <james.w.morhard@nasa.gov>, Sherman, Gabriel J. (HQ-AH000) <gabriel.j.sherman@nasa.gov>, Jurczyk, Stephen G. (HQ-AI000) <stephen.g.jurczyk@nasa.gov>, Saunders, Melanie (HQ-AA000) <melanie.saunders-1@nasa.gov>, Cremins, Tom (HQ-AH000) <tom.cremins-1@nasa.gov>, Cruz, Randy C. (HQ-AA000)[Affiliate] <randy.c.cruz@nasa.gov>, Gillen, Suzanne M. (HQ-VA000) <suzanne.m.gillen@nasa.gov>, Flaherty, Christopher J. (HQ-VA030) <christopher.j.flaherty@nasa.gov>, Kerwin, Mary D. (HQ-IA000) <mary.d.kerwin@nasa.gov>, Inclan, Bettina (HQ-NA000) <bettina.inclan@nasa.gov>, Jacobs, Bob (HQ-NA000) <bob.jacobs@nasa.gov>, Zurbuchen, Thomas H. (HQ-DA000) <thomas.h.zurbuchen@nasa.gov>, Bowersox, Kenneth D. (HQ-CA000) <kenneth.d.bowersox@nasa.gov>, Feldstein, Karen C. (HQ-TA000) <karen.c.feldstein@nasa.gov>, Thomas, Camden D. (HQ-AA000) <camden.d.thomas@nasa.gov>, Mangum, Cathy H. (LARC-A) <cathy.h.mangum@nasa.gov>, Yunaska, Kyle R. (HQ-AH000) <kyle.r.yunaska@nasa.gov>, Lueders, Kathryn L. (KSC-CA000) <kathryn.l.lueders@nasa.gov>, Kieffer, Margaret (HQ-TH000) <margaret.kieffer@nasa.gov>  
Sent: September 13, 2020 1:02:25 PM EDT  
Received: September 13, 2020 1:02:27 PM EDT  
Attachments: Draft Strengthening Implementation of China Restrictions Clean 9.13.20.docx

Jim, good afternoon to you and the rest of the crew. Below is the top-level weekly OIIR update. As always, I'll provide additional context and information at our various gaggles over the course of the coming week.

Best,

- Mike

International

Telecon with the United Nations Office for Outer Space Affairs (UNOOSA): On Wednesday, September 16, I will speak with the Director of UNOOSA, Simonetta Di Pippo, to discuss the draft Memorandum of Understanding between NASA and UNOOSA for cooperation in a variety of areas including UNOOSA's "Access to Space for All" initiative.

Bolstering the Implementation of China Restrictions: (b) (5)

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

UAE Training Agreement Public Announcement Postponed: At the request of the Mohamad bin Rashid Space Center, the public announcement regarding the reimbursable agreement to train Emirati astronauts at JSC has been postponed until next week to avoid conflicting with the signing of the Abraham Accord on September 15th.

Marshall Association Artemis Accords Briefing: On Thursday, September 17, I'm speaking at a meeting of the Marshall Association (a professional, employee service organization at NASA's Marshall Space Flight Center) to discuss the importance of the Artemis Accords and international relations.

HEOMD AA Meeting with European Space Agency (ESA): On Tuesday, September 15, HEOMD AA Lueders will hold a telecon with Dr. David Parker, ESA Director of Human Spaceflight and Robotic Exploration, to discuss the International Space Station, Gateway, and potential future exploration cooperation.

## Interagency

Sub-Interagency Working Group (IWG) Forward Harmful Biological Contamination: On Tuesday, September 15, NASA (OSMA and SMD) will lead a Sub-IWG virtual meeting on forward harmful contamination that will consider gaps and suggest inputs to the OSTP and NSpC-led IWG on planetary protection. OIIR will participate.

NASA-Department of Energy (DOE) Teleconference: On Wednesday, September 16, AA for Strategy and Plans Cremins and Deputy Chief of Staff Yunaska will participate in a weekly teleconference with DOE senior policy advisors regarding potential future activities. OIIR will participate.

Briefing on Activities of the Unidentified Aerial Phenomena Task Force (UAPTF): At the request of the UAPTF, Joel Montalbano, Margaret Kiefer, Suzanne Gillen, and I will receive a briefing on activities of the Task Force via secure VTC. Per a public announcement, on August 4, 2020, Deputy Secretary of Defense David L. Norquist approved the establishment the UAPTF. The Department of the Navy, under the cognizance of the Office of the Under Secretary of Defense for Intelligence and Security, leads the UAPTF. Additional information can be provided on the appropriate system.

Mike Gold

Acting Associate Administrator

Office of International and Interagency Relations

NASA Headquarters

(Desk) – 202-358-3808

(Cell) – (b) (6)

Michael.N.Gold@nasa.gov



## Attachment

### 1. Draft Strengthening Implementation of China Restrictions Clean 9.13.20.docx

Type: application/vnd.openxmlformats-officedocument.wordprocessingml.document  
Size: 33 KB (33,798 bytes)

**Attachment #1**

**Draft Strengthening Implementation of China Restrictions Clean 9.13.20.docx**

**Original view**

4 pages (displayed on pages 5 to 8)

September 2020

## Recommendations for Strengthening Implementation of China Restrictions

(SBU/FOUO) (b) (5)

(b) (5)

Issue Response Type	Current Actions	Proposed Additional Actions
Identify	<ul style="list-style-type: none"> <li>• (b) (5)</li> <li>•</li> </ul>	<ul style="list-style-type: none"> <li>• (b) (5)</li> <li>•</li> <li>•</li> <li>•</li> </ul>
Inform	<ul style="list-style-type: none"> <li>• (b) (5)</li> <li>•</li> </ul>	<ul style="list-style-type: none"> <li>• (b) (5)</li> <li>•</li> </ul>

	<ul style="list-style-type: none"><li>• (b) (5)</li><li>•</li><li>•</li></ul>	<ul style="list-style-type: none"><li>• (b) (5)</li><li>•</li><li>•</li></ul>
Prevent	<ul style="list-style-type: none"><li>• (b) (5)</li><li>•</li><li>•</li></ul>	<ul style="list-style-type: none"><li>• (b) (5)</li><li>•</li></ul>

	(b) (5)	
Enforce	<ul style="list-style-type: none"><li>• (b) (5)</li><li>•</li><li>•</li></ul>	<ul style="list-style-type: none"><li>• (b) (5)</li><li>•</li></ul>

RE: [EXTERNAL] Contact Information - UAP

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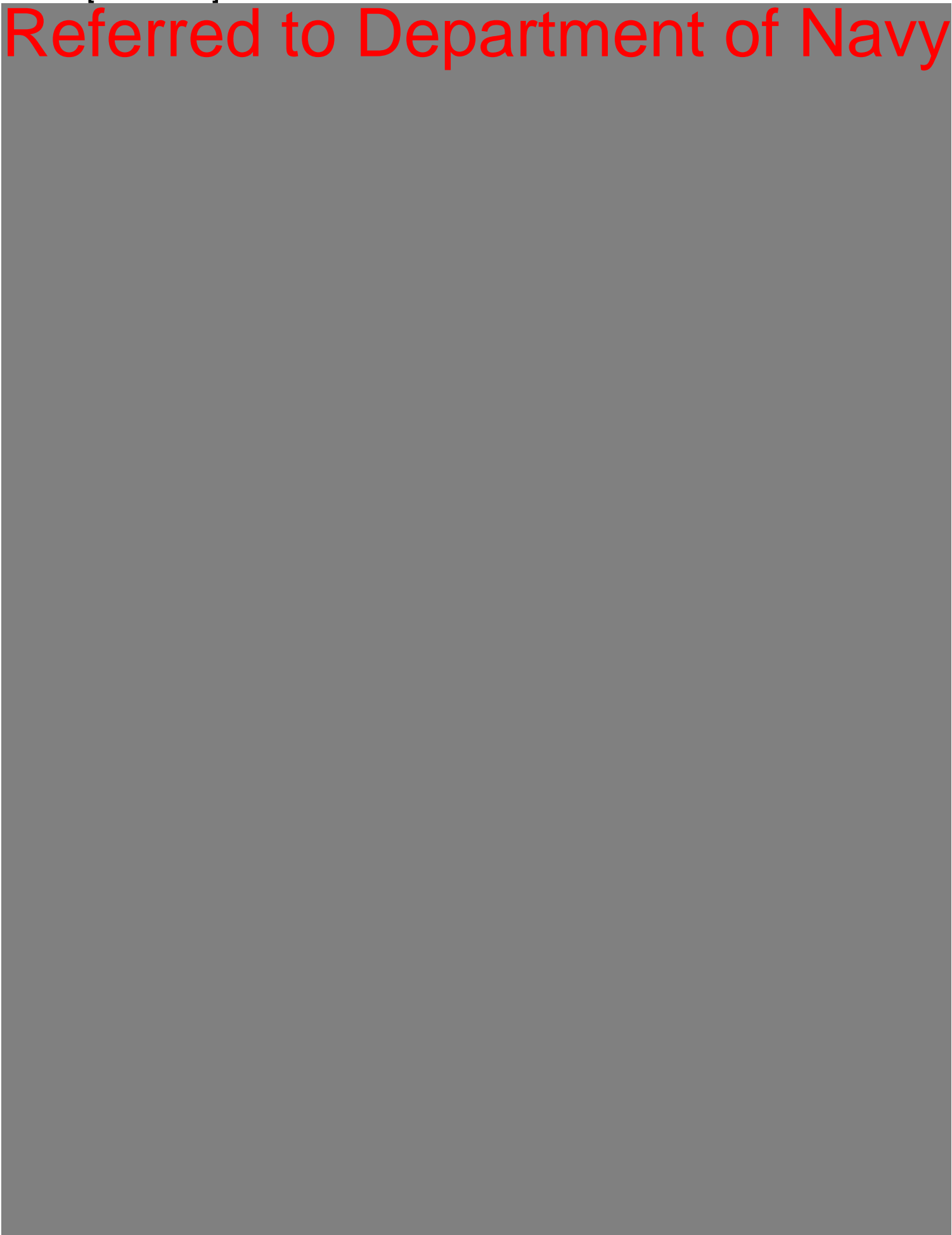
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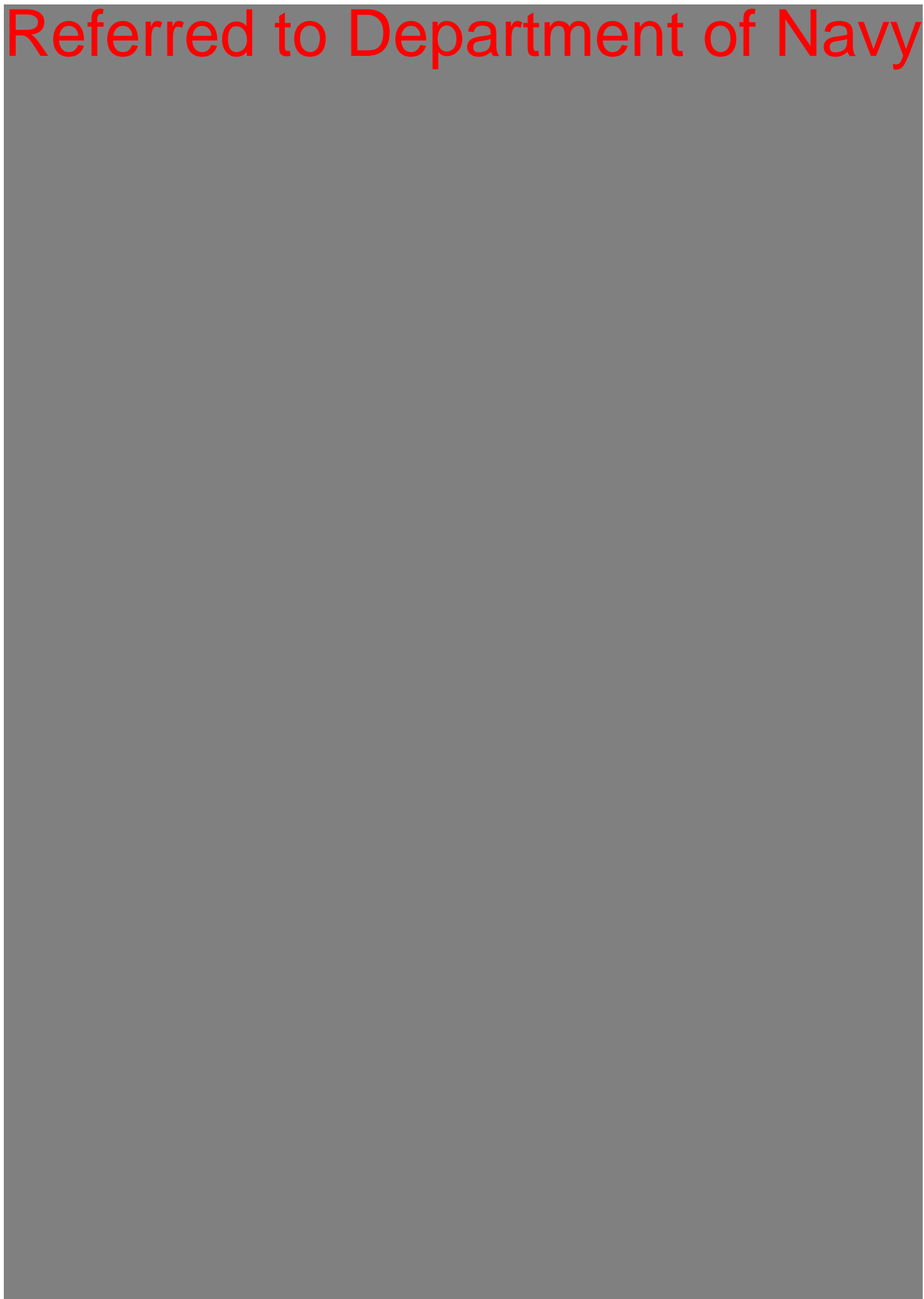
NASA Headquarters

Office: (202) 358-1445

Cell: (b) (6)

Referred to Department of Navy

Referred to Department of Navy



# Referred to Department of Navy

From: Cruz, Randy C. (HQ-AA000)[Affiliate] <randy.c.cruz@nasa.gov>

Sent: Tuesday, December 1, 2020 11:23 AM

To: Baron, Jonathan Louis (Red) CAPT USN COMNAVAIRSYSCOM PAX (USA) <(b) (6)>

Cc: Castelein, Carey F CAPT USN ASSTSECNAV RDA DC (USA) <(b) (6)> Byers, Gregory D  
CAPT USN COMNAVAIRSYSCOM PAX (USA) <(b) (6)>

Subject: [Non-DoD Source] RE: [EXTERNAL] Contact Information - UAP

Red,

I mostly telework, but I do go into the office from time to time, especially for the classified work. While teleworking and (b) (6) I can be reached on:

Personal cell: (b) (6)

Work cell: (b) (6)

While the list is dwindled down, should I be selected, I respectfully request a coordinated conversation with VADM Moran/Peters (whoever is selecting) and my current boss, Jim Bridenstine (NASA Administrator). I think it is fair to manage expectations as Administrator Bridenstine has an approved request for my current extension at the NASA HQ through Aug 2021. He can be reached at (202) 384-5000.

What kind of timeline are we looking at? And are we looking at PCS or TDY tasking?

V/r,

Randy

Randy Cruz

CAPT USN

Senior Advisor to the Administrator

NASA Headquarters

Office: (202) 358-1445

Cell: (b) (6)

# Referred to Department of Navy

Referred to Department of Navy



Referred to Department of Navy



Referred to Department of Navy



Referred to Department of Navy



Referred to Department of Navy



RE: [EXTERNAL] FW: [Non-DoD Source] UAP taskforce NASA partners

Referred to Department of Navy

From: Cruz, Randy C. (HQ-AA000)[Affiliate] <randy.c.cruz@nasa.gov>  
Sent: Thursday, June 10, 2021 10:32 AM  
To: Kohn, Abigail A CIV (USA) <(b) (6)>  
Subject: RE: [EXTERNAL] FW: [Non-DoD Source] UAP taskforce NASA partners

Thanks Abby! I'll run down and check it out. I'm comforted in knowing that you are talking to Jolene. I'll also chat with her.

V/r,

Randy

Referred to Department of Navy

# Referred to Department of Navy

From: Cruz, Randy C. (HQ-AA000)[Affiliate] <randy.c.cruz@nasa.gov>

Date: Tuesday, Jun 08, 2021, 12:20 PM

To: Stratton, John F (Jay) SES USN ONI WASHINGTON DC (USA) <(b) (6)>

Subject: [Non-DoD Source] UAP taskforce NASA partners

Hello Sir,

I came across a classified UAP TF brief that had your name on it, dated August 2020. NASA is named as a partner, but we're having difficulty identifying who exactly from NASA was working on this with your team. Any help you can provide is much appreciated; it will allow the NASA Administrator to have a better informed idea of who and how much contribution NASA has provided in this effort.

I can be reached on JWICS: (b) (7)(C), (b) (6) or if you like we can schedule a call and I can call you on TS VOIP.

We don't have many terminals, so if you send me any emails, I kindly request a NIPR heads up.

V/r,

Randy

Randy Cruz

Senior Advisor to the Administrator

NASA Headquarters

Office: (202) 358-1445

Cell: (b) (6)

Referred to Department of Navy



Referred to Department of Navy



Referred to Department of Navy

Referred to Department of Navy



Referred to Department of Navy

Referred to Department of Navy

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## Re: Background info in the SCIF

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From: Cruz, Randy C. (HQ-AA000)[Affiliate] </O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=FE606AD0FF7A47E09D3C9543390219 F5-CRUZ, RANDY>  
To: Kieffer, Margaret (HQ-TH000) <margaret.kieffer@nasa.gov>, Feldstein, Karen C. (HQ-TA000) <karen.c.feldstein@nasa.gov>, Meidinger, Jolene A. (HQ-TH000) <jolene.meidinger@nasa.gov>  
Sent: June 28, 2021 7:37:26 AM EDT  
Received: June 28, 2021 7:37:28 AM EDT

I can do it and will keep you all informed until Jolene comes back.

Randy Cruz

Senior Advisor to the Administrator

NASA Headquarters

randy.c.cruz@nasa.gov

Office: (202) 358-1445

Cell: (b) (6)

On: 28 June 2021 05:14, "Kieffer, Margaret (HQ-TH000)" <margaret.kieffer@nasa.gov> wrote:

Randy:

Were you going to reach out to ODNI about the post-report release UAP briefing BN requested on Friday (Jolene is on leave this week), or should I do so?

M

From: Cruz, Randy C. (HQ-AA000)[Affiliate] <randy.c.cruz@nasa.gov>  
Sent: Friday, June 25, 2021 12:27 PM  
To: Feldstein, Karen C. (HQ-TA000) <karen.c.feldstein@nasa.gov>; Kieffer, Margaret (HQ-TH000) <margaret.kieffer@nasa.gov>; Meidinger, Jolene A. (HQ-TH000) <jolene.meidinger@nasa.gov>  
Subject: RE: Background info in the SCIF

Karen,

He's got questions that go beyond the talking points and is looking for background that may be easier to discuss in the SCIF.

V/r,

Randy



From: Feldstein, Karen C. (HQ-TA000) <karen.c.feldstein@nasa.gov>  
Sent: Friday, June 25, 2021 12:23 PM  
To: Cruz, Randy C. (HQ-AA000)[Affiliate] <randy.c.cruz@nasa.gov>; Kieffer, Margaret (HQ-TH000) <margaret.kieffer@nasa.gov>; Meidinger, Jolene A. (HQ-TH000) <jolene.meidinger@nasa.gov>  
Subject: Re: Background info in the SCIF

Randy, can this meeting be handled unclass? The report that's coming out is the unclass version and it's a very simple story of how uninvolved NASA was...

From: "Cruz, Randy C. (HQ-AA000)[Affiliate]" <randy.c.cruz@nasa.gov>  
Date: Friday, June 25, 2021 at 12:20 PM  
To: Karen Feldstein <karen.c.feldstein@nasa.gov>, Margaret Kieffer <margaret.kieffer@nasa.gov>, "Meidinger, Jolene A. (HQ-TH000)" <jolene.meidinger@nasa.gov>  
Subject: RE: Background info in the SCIF

Margaret,

You should have seen a meeting maker for 4:15 on the 6th Floor Scif. Lorenzo is already there and is standing by. He'll be arriving back from Goddard around that time.

V/r,

Randy

From: Feldstein, Karen C. (HQ-TA000) <karen.c.feldstein@nasa.gov>  
Sent: Friday, June 25, 2021 11:22 AM  
To: Kieffer, Margaret (HQ-TH000) <margaret.kieffer@nasa.gov>; Cruz, Randy C. (HQ-AA000)[Affiliate] <randy.c.cruz@nasa.gov>; Meidinger, Jolene A. (HQ-TH000) <jolene.meidinger@nasa.gov>  
Subject: Re: Background info in the SCIF

Sounds good thank you.

On: 25 June 2021 11:02, "Kieffer, Margaret (HQ-TH000)" <margaret.kieffer@nasa.gov> wrote:

Karen:

Either Jolene or I are happy to support, as considered helpful.

M

From: Cruz, Randy C. (HQ-AA000)[Affiliate] <randy.c.cruz@nasa.gov>  
Sent: Friday, June 25, 2021 10:45 AM  
To: Feldstein, Karen C. (HQ-TA000) <karen.c.feldstein@nasa.gov>; Kieffer, Margaret (HQ-TH000) <margaret.kieffer@nasa.gov>; Meidinger, Jolene A. (HQ-TH000) <jolene.meidinger@nasa.gov>  
Subject: Background info in the SCIF

Karen,

Marc Etkind and Jackie McGuinness have expressed the Senator's desire to understand any details that may exist and

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Randy

Randy Cruz

Senior Advisor to the Administrator

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Sent: June 28, 2021 5:14:51 AM EDT  
Received: June 28, 2021 5:14:52 AM EDT

Randy:

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Sent: Friday, June 25, 2021 12:27 PM  
To: Feldstein, Karen C. (HQ-TA000) <karen.c.feldstein@nasa.gov>; Kieffer, Margaret (HQ-TH000) <margaret.kieffer@nasa.gov>; Meidinger, Jolene A. (HQ-TH000) <jolene.meidinger@nasa.gov>  
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To: Kieffer, Margaret (HQ-TH000) <margaret.kieffer@nasa.gov>; Cruz, Randy C. (HQ-AA000)[Affiliate] <randy.c.cruz@nasa.gov>; Meidinger, Jolene A. (HQ-TH000) <jolene.meidinger@nasa.gov>  
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Sent: Friday, June 25, 2021 10:45 AM  
To: Feldstein, Karen C. (HQ-TA000) <karen.c.feldstein@nasa.gov>; Kieffer, Margaret (HQ-TH000) <margaret.kieffer@nasa.gov>; Meidinger, Jolene A. (HQ-TH000) <jolene.meidinger@nasa.gov>  
Subject: Background info in the SCIF

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V/r,

Randy

Randy Cruz

Senior Advisor to the Administrator

NASA Headquarters

Office: (202) 358-1445

Cell: (b) (6)

## RE: DoD tagup discussion item

---

From: Cruz, Randy C. (HQ-AA000)[Affiliate] </O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=FE606AD0FF7A47E09D3C9543390219 F5-CRUZ, RANDY>  
To: Plumb, Thomas J. (HQ-TA000) <thomas.j.plumb@nasa.gov>, Drew, Benjamin A. (HQ-TH000) <b.a.drew@nasa.gov>  
Sent: December 9, 2020 12:43:46 PM EST  
Received: December 9, 2020 12:43:00 PM EST

"just in" your news box, huh? They're out there....and they're listening, apparently. I knew I shouldn't have said anything to you guys. =).

V/r,

Randy

From: Plumb, Thomas J. (HQ-TA000) <thomas.j.plumb@nasa.gov>  
Sent: Wednesday, December 9, 2020 12:27 PM  
To: Cruz, Randy C. (HQ-AA000)[Affiliate] <randy.c.cruz@nasa.gov>; Drew, Benjamin A. (HQ-TH000) <b.a.drew@nasa.gov>  
Subject: RE: DoD tagup discussion item

Just in my news in-box:

<https://www.popularmechanics.com/military/research/a34908126/leaked-ufo-photo-motionless-cube-shaped-object/>  
<<https://gcc02.safelinks.protection.outlook.com/?url=https://www.popularmechanics.com/military/research/a34908126/leaked-ufo-photo-motionless-cube-shaped-object/&data=04|01|randy.c.cruz@nasa.gov|a91c523490244ffe5e6308d89c6798cb|7005d45845be48ae8140d43da96dd17b|0|637431316049641427|Unknown|TWfPbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiv2luMzliLCJBTil6lk1haWwiLCJXVCi6Mn0=|1000&sdata=8FhzeJneQpDlBkAD/5xc84lhyY77Phla+pdc1/Nlzxw=&reserved=0>>

Must be a sign.

Tom

From: Plumb, Thomas J. (HQ-TA000) <thomas.j.plumb@nasa.gov>  
Sent: Tuesday, December 8, 2020 10:53 AM  
To: Kieffer, Margaret (HQ-TH000) <margaret.kieffer@nasa.gov>; Flynn, David T. (HQ-TH000) <david.flynn@nasa.gov>; Drew, Benjamin A. (HQ-TH000) <b.a.drew@nasa.gov>  
Cc: Cruz, Randy C. (HQ-AA000)[Affiliate] <randy.c.cruz@nasa.gov>; Plumb, Thomas J. (HQ-TA000) <thomas.j.plumb@nasa.gov>  
Subject: DoD tagup topics, 8 December 2020, 1300EST/1100MST

DoD tagup topics, 8 December 2020, 1300EST/1100MST

AF-NASA-NRO Summit (AFNNS), 1 Oct 2020

- Summit was originally planned for 1 October, in order to be before the November 2020 36th Space Symposium (now August 2021). Postponed by the Principals to develop topics

- Planned topics:
- Protect & Defend Strategy (OPR: DAF/USSF, NRO)
- Cislunar Plans and Opportunities (OPR: NASA lead) (DAF OCR Capt Buehler NRO OCR Dr. Knight)
- Norms and Behavior (OPR: DAF/USSF)
- Plus One only telecons 24 November, 4 December. Discussing if principles available for a Summit in December or January. If no AFNNS, would CSO Gen Raymond and the Administrator want to try to meet?

USSPACECOM - USSF ST - NASA monthly S&T / Cislunar tagup, Friday, 4 December, 1300MST

- Regular monthly group: USSC J8 Jeff Todd, USSF Chief Scientist Office ST Michele Gaudreault, NASA OIIR
- This month focus was reviewing the AFNNS Cislunar BBP
- Participants included AFRL Buehler, Frith, Finley, AF SP, NGA Yousef Butt, Randy Cruz
- Productive discussion on BBP and cislunar USG collaboration way forward
- Will continue meetings with the group

Space Rapid Capabilities Office (SpRCO) tagup, 8 December, PAFB

- Colonel Jeremy Raley in from Kirtland AFB

NGA Yousaf Butt reach out to OIIR for non-science NEO PD data

- Contacted M, indicated had touched base with Lindley Johnson
- Lindley had discussed topic with Yousaf and is waiting for his plans
- Tom touched base with Lindley and met with Yousaf

PAEP Ray Taylor retiring end of December

- Teams site with reference materials related to Enterprise Protection

Space Force Astronaut

- Mike Hopkins (USAF), Crew 1, planning to commission to Space Force on ISS around the 1 year USSF anniversary
- NASA looking at a live event on 18 December, NASA TV, visitors in NASA HQ SOC may include CSO Raymond and SECAF Barrett
- <https://spacenews.com/nasas-crew-1-commander-to-be-sworn-into-u-s-space-force-from-the-international-space-station/> <<https://gcc02.safelinks.protection.outlook.com/?url=https://spacenews.com/nasas-crew-1-commander-to-be-sworn-into-u-s-space-force-from-the-international-space-station/&data=04|01|randy.c.cruz@nasa.gov|a91c523490244ffe5e6308d89c6798cb|7005d45845be48ae8140d43da96dd17b|0|0|637431316049651425|Unknown|TWfPbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6Ik1ha>

WwiLCJXVCI6Mn0=|1000&sdata=urAc5nnlzBaBc5c0wLzwQJCeIEJaYdr3XqdJ7VjACYo=&reserved=0>

- <https://slate.com/technology/2020/11/iss-space-force-no-thank-you.html>  
<[USSPACECOM request for NASA AO-level POCs for strategic messaging](https://gcc02.safelinks.protection.outlook.com/?url=https://slate.com/technology/2020/11/iss-space-force-no-thank-you.html&data=04|01|randy.c.cruz@nasa.gov|a91c523490244ffe5e6308d89c6798cb|7005d45845be48ae8140d43da96dd17b|0|0|637431316049651425|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikk1haWwiLCJXVCI6Mn0=|1000&sdata=c0T+rJJkQ64Q7U1kNy7ffjwIta4GD3vOmNabTPMeiFA=&reserved=0></a></p></div><div data-bbox=)

- Reach out by Col Oakes, USSF, Chief Space Policy Division, JS J5-StS, Pentagon
- USSPACECOM DJ5, Deputy Director for Strategy, Plans and Policy, Brig Gen Rick Zellmann
- Developing strategic messaging

USSPACECOM HSFS OPT ARTEMIS PROGRAM

- USSC Operational Planning Team for Artemis program, Tuesdays, 1230MDT
- OPORD development. Nominal recovery astronauts, Orion, boosters, Contingency ops.
- NASA Artemis ground ops POCs linked up:
  - Melissa Jones, EGS, Landing and Recovery Director, Carla Rekucki, deputy; Jim Hamblin, Element Operations Manager
- Updating booster salvage plans (not initially), frequency of missions (1/year after Artemis II), Artemis 1 launch date (Aug 2021)

USSPACECOM HSFS "Working Group", Wednesday Telecons

- Crew 1 preparations, launch 15 November; recovery
- Discussion of support for Crew-1 planned capsule port change during mission / status of forces

NEO updates

- Memo to USSF S3/6 asking to authorize SNL to release GPS S3 data to NASA/SDL to assess potential future source of bolides

<https://www.imo.net/a-fireball-lit-up-japanese-skies-on-nov-28/>  
<[<https://www.cbsnews.com/news/meteor-sonic-boom-light-flash-multiple-states-ontario/>  
<<https://gcc02.safelinks.protection.outlook.com/?url=https://www.cbsnews.com/news/meteor-sonic-boom-light-flash-multiple-states-ontario/&data=04|01|randy.c.cruz@nasa.gov|a91c523490244ffe5e6308d89c6798cb|7005d45845be48ae8140d43da96>](https://gcc02.safelinks.protection.outlook.com/?url=https://www.imo.net/a-fireball-lit-up-japanese-skies-on-nov-28/&data=04|01|randy.c.cruz@nasa.gov|a91c523490244ffe5e6308d89c6798cb|7005d45845be48ae8140d43da96dd17b|0|0|637431316049661414|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikk1haWwiLCJXVCI6Mn0=|1000&sdata=n2g1/qaP8uZbfK/zB0AQdCAiycHmMrQVQ1iEsYsjlmY=&reserved=0></a></p></div><div data-bbox=)

dd17b|0|0|637431316049671411|Unknown|TWfPbGZsb3d8eyJWljoIMC4wLjAwMDAiLCJQljoIV2luMzliLCJBTiI6Ik1haWwiLCJXVCI6Mn0=|1000&sdata=5TD7n7D2wd6DiEV0CACQKsFnioSZdPKut+29tuozLME=&reserved=0>

- Chang'e booster return from lunar orbit

#### USSF / USSC Updates

- 1-year US Space Force Birthday events, 20 December
- BG Schiess enroute to Peterson AFB SpOC
- MG Burt arrived in Vandenberg AFB, USSPACECOM CFSCC/CC, SpOC West

#### NASA CERES observation program request to Space Force for GPS optical sensor data

- Thursday, 22 October, 1430MDT telecon discussion
- Sandia looking at science applications for DoD mission data
- GPS data can reflect earth albedo, has science potential
- Discussed with NASA CERES PI Norman Loab
- Sandia sent a report over SIPR to Space Force, with request to release at FOUO, would be passed to CERES
- Report will assist CERES understanding on value of the data

#### EPP Zero-Based Review (POC Dave Adams)

- FY21 Goal 6 "Identify driving protection considerations for Cislunar operations". Cognizant organizations: HEOMD\*, SMD, OCE.
- FY23 Goal 5 "Convey NASA protection dependencies for Cislunar operations with partner agencies". Cognizant organizations : OIIR\*, HEOMD, SMD, OCE.

#### Thor's Hammer 21 (June 2021)

- Initial Planning Conference, TS/VOIP, 12 November, 10-1300EDT. (POC NRO Steve Jones)
- Dave Adams participated for NASA
- Mid Planning Conf 4 Feb 2021, Final Planning Conf April 2021, TH21 June 2021 (5-8 day TBD, distributed virtual TS)

#### Schriever Wargame 2020 (SW20)

#### SW21

- Concept Development Conference (CDC) moved to classified virtual, 19-21 January

#### ARTICLES



## Trump Admin to Rename Two Bases for Space Force Over Military Objections

The Air Force had quietly agreed with Congress not to change anything until the NDAA settles a way forward on Confederate base names

DefenseOne.com (Exclusive), 7 Dec 20 | Marcus Weisgerber

The U.S. Air Force plans to change the names of two Florida military bases heavily involved in Space Force operations during a Wednesday ceremony with a guest list including Vice President Mike Pence, Defense One has learned.

The renaming ceremony has been ordered by top Trump administration officials as part of the Space Force's first birthday. But U.S. officials familiar with the matter said the changes violate a gentleman's agreement with congressional staffers who asked the military not to rename any bases until after President Donald Trump signs the fiscal 2021 National Defense Authorization Act. The officials spoke on the condition of anonymity to openly discuss the renaming, which has not been publicly announced.

Patrick Air Force Base will be renamed Patrick Space Force Base and Cape Canaveral Air Force Station will be renamed Cape Canaveral Space Force Station, the officials said. Both bases are involved with launching military rockets on the cape.

The bases will still be overseen by the Department of the Air Force, which also oversees the Space Force. New signs at the base entrances will cost taxpayers \$50,000, according to a person with knowledge of the plan.

Other high officials expected to attend the renaming ceremony include Deputy Defense Secretary David Norquist; Air Force Secretary Barbara Barrett; Gen. Jay Raymond, the chief of space operations; and Gen. C.Q. Brown, the Air Force chief of staff. Pence, is also scheduled to chair a Wednesday meeting of the National Space Council at nearby Kennedy Space Center.

The ceremony will be held amid a record spike in coronavirus cases and public health officials' pleas not to travel.

Earlier this year, Raymond said the Space Force would forgo base renaming and their attendant gatherings until the need for social distancing subsides. The issue came up again in the fall when Air Force officials discussed renaming the bases as part of the Space Force's first birthday on Dec. 20.

Instead, the Air Force forged an informal agreement with congressional staffers not to rename any military installations until after Trump signed the fiscal 2021 National Defense Authorization Act. The bill contains legislation that would create a commission to oversee renaming of bases named after Confederate soldiers.

An Air Force spokeswoman declined to comment on the renaming. She deferred questions about this week's National Space Council meeting to the White House. A National Space Council spokesman did not immediately respond to a request for comment.

The House and Senate could vote on the bill as soon as this week. Trump has threatened to veto the legislation if it includes language to rename Confederate bases, and unless it repeals a law that protects social media companies.

Patrick Air Force Base is named after Maj. Gen. Mason Patrick, the first chief of the Army Air Corps.

House and Senate Committees Agree on FY2021 NDAA

<[https://gcc02.safelinks.protection.outlook.com/?url=http://feedproxy.google.com/~r/Spacepolicyonline/~3/sz5KOh9zPcM/?utm\\_source=feedburner&utm\\_medium=email&data=04|01|randy.c.cruz@nasa.gov|a91c523490244ffe5e6308d89](https://gcc02.safelinks.protection.outlook.com/?url=http://feedproxy.google.com/~r/Spacepolicyonline/~3/sz5KOh9zPcM/?utm_source=feedburner&utm_medium=email&data=04|01|randy.c.cruz@nasa.gov|a91c523490244ffe5e6308d89)

c6798cb|7005d45845be48ae8140d43da96dd17b|0|0|637431316049671411|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ik1haWwiLCJXVCI6Mn0=|1000&sdata=vazgnImNQz8yAzURvtVU1gmsSzBZFoTVXpQoWZhCnlc=&reserved=0>

Posted: 03 Dec 2020 08:55 PM PST

While it seemed like a long shot, at best, just days ago, the House and Senate defense authorization committees finalized the FY2021 National Defense Authorization Act (NDAA) today, defying two veto threats from President Trump. Determined to make it 60 years in a row that an NDAA has been enacted, the two parties and the [...]

Biden Mulls Space Council's Future

Politico

4 December 2020

Members of Biden's transition team held a series of meetings this week with commercial space leaders from across the industry to get their take on the National Space Council, an industry official told POLITICO. The panel, which President Donald Trump revived in 2017, has been behind the administration's space policy directives on everything from human exploration to the U.S. Space Force and cutting burdensome regulations.

"The first question they asked was what did we think about the space council and do we think it's effective," said the industry official, who spoke on background to discuss the private meeting. "We all warmly endorsed it." The transition team has also asked NASA Administrator Jim Bridenstine about his views on how useful the panel is, the source said, adding that Bridenstine is also "a believer" in the committee's value.

"It made space a national priority and elevated it within the West Wing," the source said, describing what participants told the transition team. "We feel that the five space policy directives were very helpful and moved the ball forward."

Biden has yet to say whether he will keep the panel, which is historically led by the vice president. But space officials have widely praised the council for both elevating the national conversation about space and enlisting new parts of government on space goals, including the chairman of the Joint Chiefs and the secretaries of Commerce and Energy.

The National Space Council will meet on Wednesday at Kennedy Space Center in Florida, the eighth and possibly final time under Vice President Mike Pence.

Vandenberg's multinational CSpOC team supports NASA's multinational space missions

Vandenberg Public Affairs, Dec. 1 | Maj Michael Lang, Royal Canadian Air Force

I have had the privilege of working on two historic NASA missions over the past year, during which the United States launched astronauts into space from its own soil for the first time since 2011. Although these launches took place from a launch pad in Florida, my team's participation in both launches took place from the Combined Space Operations Center (CSpOC) at Vandenberg AFB, Calif. This team of space experts from Vandenberg not only had Americans and Canadians like me on it, but a whole host of multinational partners as well.

The first of the two crewed launches this year took place on May 30, 2020, and it was no surprise seeing the excitement around the operations floor leading up to the event. That day, the SpaceX Demonstration Mission #2 (DM-2) launched from the John F. Kennedy Space Center, and marked the first launch of U.S. astronauts from U.S. soil since the last launch of the space shuttle, Atlantis, occurred on July 8, 2011.

Our team here at the Combined Force Space Component Command's CSpOC worked with a variety of U.S. and international units to ensure this was a well-planned and executed mission. In the weeks prior to the launch, we used our existing relationships with Australia, Canada, France, Germany, New Zealand and the United Kingdom to identify where the allies could provide support to the mission. Once support had been formally requested, the CSpOC sensor plan was then integrated in to a wider U.S. Space Command sensor plan to ensure senior leaders had sufficient situational awareness for the duration of the mission. What we noticed from this launch was simple: human space flight is exciting to everyone, regardless of what country is launching astronauts into space.

From my perspective as a space operations officer and air traffic controller, the DM-2 mission pushed us even harder to find creative ways to disseminate real-time data to all partners and ensure all sensors were primed and ready to track the spacecraft on its way to the International Space Station (ISS). For instance, we initially discovered that no two countries "spoke the same language" when describing technical data, and we quickly realized we needed to collaborate and standardize the reporting of this important data for mission success. These lessons are applicable across a number of missions we conduct with our allied partners and, by incorporating them on a daily basis, will help make our operations more effective.

The second mission sending humans to space from the United States took place on Nov. 16, 2020, aboard the SpaceX Dragon Crew-1 'Resilience' capsule. Like the CSpOC team that supported the mission, the crew of three Americans and one Japanese astronaut was also multinational.

I had the honor of being the CSpOC lead for the Dragon Resilience mission. Many of the core functions of this CSpOC team were similar to the DM-2 mission, which included providing Space Domain Awareness to Dragon Resilience and the ISS to avoid any collisions with other space objects and, equally as important, to communicate that data between NASA Johnson Space Center and other partners on this mission. We also tracked Dragon Resilience's trajectories as it maneuvered to the ISS, actively disseminated this information to partner sites, and communicated with the 18th Space Control Squadron, also at Vandenberg AFB, for tracking real-time milestones such as maneuver times, docking, and status of the capsule.

I certainly think that our small team of about 15 people at Vandenberg made a big impact on the successful Dragon Resilience mission. We are also shaping the future of human space flight by redefining how we work together and execute those missions with the help of our allies and partners. With Australia, Canada, France, Germany, New Zealand, the United Kingdom, and others showing support to the program, I am hopeful that future missions only grow in terms of multinational presence and partnerships. It makes sense to have a multinational team supporting multinational space missions. We are certainly stronger together.

#### About the Author

Major Michael Lang is a Royal Canadian Air Force Officer assigned to the Combined Force Space Component Command's Combined Space Operations Center (CSpOC) at Vandenberg Air Force Base, Calif. He is the first allied partner there to hold the role of deputy chief, Human Space Flight Support, and has a background in Space Operations and Air Traffic Control. He was also the CSpOC lead for the recent SpaceX Dragon Crew-1 'Resilience' mission. He has worked Missile Warning and Space Domain Awareness at Beale AFB, Calif., and was deputy chief within Delta 2, formerly known as the 21st Operations Group, Standardization and Evaluation Division, at Peterson AFB, Colo.

Space Force planning a 'disruptive' acquisitions command

Gen. John Raymond said the Space Systems Command will include a mix of legacy and nontraditional procurement offices

SpaceNews Online, Dec. 2 | Sandra Erwin

WASHINGTON -- Gen. John "Jay" Raymond said the Space Force is close to finalizing the layout of its future acquisitions command, a large organization that will consolidate multiple agencies that currently operate independently.

"Our next big step is the Space Systems Command," Raymond said Dec. 2. "I just reviewed a design over the last couple of days, and I think next week hopefully they'll come to me with the final product."

Raymond spoke at the virtual West Coast Aerospace Conference hosted by the Air Force Association's Mitchell Institute. He was interviewed by Jamie Morin, vice president of the Aerospace Corp.

Morin asked Raymond to explain how the Space Force plans to bring more technological innovation and fresh thinking into the service's acquisition programs.

Raymond said the Space Systems Command will include a mix of legacy and nontraditional procurement offices. "I think you're going to see an organization that has disruptive innovators, prototypers and more traditional," he said. The goal is to have "unity of effort, reduced duplication, reduced cost and increased speed."

Raymond said he is pushing the service to become more creative, innovative and less fearful of taking risks with new technology.

To accelerate innovation and reduce costs "you have to change the business model," said Raymond. The military can't take risks using unproven technologies when it buys huge billion-dollar satellites that perform critical tasks, but can take more risks with systems that use cheaper mass-produced satellites that can be more easily replaced, said Raymond. "I think what you'll see is a hybrid approach. We'll have a diversified portfolio."

In his Space Force "Planning Guidance" document released last month, Raymond said he wants to see "productive disruption."

"I expect commanders and program managers to accept moderate risk associated with innovation and experimentation to build an agile force," Raymond wrote.

The future acquisitions command will be run by a three-star general. It will include the Space and Missile Systems Center at Los Angeles Air Force Base. Other organizations that will be merged into the command are the Commercial Satellite Communications Office — a group based in the Washington D.C. area that manages the procurement of commercial satcom for the Defense Department — and portions of the Air Force Research Laboratory's Space Vehicles Directorate, based at Kirtland Air Force Base, New Mexico.

The Space Force organizations that oversee space launches at Cape Canaveral Air Force Station, Florida, and Vandenberg Air Force Base, California, also will become part of Space Systems Command.

Still unclear is how the Pentagon's Space Development Agency and the Space Rapid Capabilities Office will be aligned with the new command.

A report released Dec. 2 by the Secure World Foundation criticizes the Space Force for not moving fast enough to consolidate acquisition offices.

"There is general agreement that the current process is too slow and rigid to respond to emerging threats, in part due to the lack of central authority," the report says. "A study done by the Government Accountability Office in 2017 found more than 60 agencies had some say in space acquisitions, and to date that number has only gone up with the creation of new agencies such as the Space Development Agency and the U.S. Space Force." The Space Force does

not include the space acquisitions of the intelligence community, which will remain separate.

STARCOM: Training Troops To Fight Space Wars, Boldly

Breaking Defense, Nov 30 | Theresa Hitchens

WASHINGTON: Space Force's new training and readiness unit, called STARCOM, is working from the ground up to figure out what doctrine, skills and tech space professionals will need for orbital warfare.

"What we are really bringing to the fight is focus. Focus on space," Col. Peter Flores, commander of the Space Training and Readiness (STAR) Delta Provisional at Space Operations Command, said in an interview today. (STAR Delta is the predecessor to a brand new training and readiness field command, that will be called STARCOM. It will be led by a two-star and is expected to be up and running sometime next year.)

"We've decided that the topic is important enough and unique enough that we need a group of people who understand it down to its most fundamental levels," Flores added.

Currently, Flores is overseeing 900 personnel, shifted over from a mishmash of former Air Force units. Those units include:

3d Space Experimentation Squadron, Schriever AFB

17th Test Squadron, Schriever AFB

25th Space Range Squadron, Schriever AFB

319th Combat Training Squadron, Peterson AFB

328th Weapons Squadron, Nellis AFB, Nevada

527th Space Aggressor Squadron, Schriever AFB

533d Training Squadron, Vandenberg AFB, California

USAF Warfare Center Detachment 1, Schriever AFB

705th Combat Training Squadron Operating Location Alpha, Schriever AFB

Air Force Operational Test & Evaluation Center Detachment 4, Peterson AFB

National Security Space Institute, Peterson AFB

Vosler Noncommissioned Officer Academy, Peterson AFB

As is obvious from the list, much of the past training for space operators within the Air Force was located in Colorado — so the location has required little by way of personnel or budget reshuffling. Indeed, Flores explained, each of those units came with their own funding and budgets intact.

But, because it will be a new command, a basing decision will be required to determine where STARCOM's HQ will stand. And, Flores said, he expects STARCOM will reorganize, and grow, as the Space Force turns its gaze from legacy missions to new ones.

"I hate to speculate on the size, but I think as the Space Force across the board right-sizes its field commands ... we'll see some transition billets here and there, and I think we'll grow a little bit over time," he said.

Flores says his team has four goals. The first is simply taking care of today's space professionals, especially during the COVID-19 pandemic. Second, it ensures that current training missions and endeavors are able to continue "unabated." Third is to bring together the disparate training and readiness units into a more cohesive structure to "make a better whole." And, fourth, preparing for the transition to STARCOM.

The primary difference between the training regime being developed by STARCOM from past practices is that it is focused on space as a domain of warfare.

They are preparing the Space Force "to prevail in a contested, degraded, and operationally-limited environment," a Space Force press release explains. That entails developing space warfighting doctrine and tactics, techniques, and procedures, as well as the testing and evaluation of Space Force capabilities.

This is a bigger task than it might seem at first glance, precisely because there isn't a well-established body of space warfighting doctrine available to build space-mission education and training regimes from.

Flores said Space Force will continue to look to legacy doctrine — such as Joint Doctrine 3-14 Space Operations — as well as warfighting doctrine from other domains, because there are still lessons to be learned from them. "The essential nature of war hasn't changed," he said.

On the other hand, Flores noted, there also is a need for new thinking that more closely reflects the differences (such as the effects of the laws of physics) between operating in space and operating in other domains. "Anybody who's been in the domain, so to speak, for a while, recognizes some of the limitations of trying to translate doctrine from other domains into what happens in space," he said. "Now, as we go through this process, we've got this amazing opportunity here to write our own book to decide what does really work for space."

The Spacepower Capstone Doctrine released by Chief of Space Operations Gen. Jay Raymond on Aug. 10 begins that process of creating more specific warfighting concepts for space and building "combat ready space forces."

The doctrine explains that Space Force personnel will be trained in a set of five core competencies that define how "spacepower" is employed, as well as one or more narrower "spacepower disciplines."

The core competencies are: Space Security; Combat Power Projection; Space Mobility & Logistics; Information Mobility; and Space Domain Awareness.

The seven specialized "disciplines" are:

Orbital Warfare

Space Electromagnetic Warfare

Space Battle Management

Space Access & Sustainment

Military Intelligence

Cyber Operations

## Engineering / Acquisition

The follow-on CSO Planning Guidance released early this month specifies that STARCOM “will develop the unique curricula required by the first four disciplines of Orbital Warfare, Space Electromagnetic Warfare, Space Battle Management, and Space Access and Sustainment. In addition, STARCOM will facilitate inclusion of space-unique content for Military Intelligence, Cyber Operations, and Engineering and Acquisition career fields for individuals intending to join or support Space Force units.”

Flores said that his team already is looking to establish training in the first three areas, but has yet to really figure out what should be in the broader category of Space Access and Sustainment. Further, he explained, the weapons school course that formerly concentrated on “space superiority” now has been split into the three more specific subjects of “orbital warfare, electronic warfare and space battle management.”

One thing is clear, Flores said, and that is that space professionals from will have to have a much higher-fidelity understanding of the technical aspects of how space systems operate from now on.

“I think Gen. Raymond has been pretty clear about that,” he said. “Everybody involved in the enterprise is going to expect that, as a ticket to get on the ride, you’re going to have to know a little bit more about the space domain than maybe you did in the past.”

The CSO Planning Guidance also puts a premium on empowering personnel, from the bottom up, to think “boldly,” to innovate, and be willing to take “prudent risks.”

“Empowerment is a key component of agility, innovation, and boldness. Leaders must continually develop and empower teams capable of seizing the initiative, pursuing innovation, and taking responsibility for their actions. Training, education, and mission-type orders are the foundation of empowerment; however, empowered teams are built through active practice,” the document says.

“How to inculcate boldness is a tricky question, right?” said Flores. “I think what you need to do is you need to celebrate those attempts, even when they don’t go great. Do we learn something from it? Was it was grand failure that we got something from? Or maybe we didn’t get something from, we just identified that ‘hey, that’s not the way to work,’ but that’s okay, learn from that and we can move on.”

Topics: Joint Doctrine 3-14 Space Operations, military training, Peterson AFB, space, Space Force, Space Operations Command, Space Training and Readiness Command (STARCOM), Training Series 2020

### Q&A: Staffing and Shaping the Space Force

Air Force Magazine, Dec 2020 | Rachel S. Cohen

Gen. John W. “Jay” Raymond is the first Chief of Space Operations of the new U.S. Space Force. He spoke with Air Force Magazine Senior Editor Rachel S. Cohen about the service’s future. This conversation has been edited for length and clarity.

Q: The Space Force turns 1 year old this winter. What are some of your goals over the next few months?

A: I really couldn’t be more excited for where we are and what we’ve already accomplished, and maybe even more excited about the opportunities that are ahead of us. The U.S. is leading in space globally. We’ve seen other countries follow suit as the U.S. has elevated space, ... with France, for example, the United Kingdom, and now Japan standing up a space unit, with more to follow. ... I’ve visited a few universities since we’ve been established and what I’m being

told by those universities is their applications for getting into space-related majors are up, and so I think there's a lot of good news for our nation.

On the people side, ... in December, we'll probably be around 2,500-ish. This [fiscal] year, we'll get to roughly 6,700 folks that are on Active duty, and we'll have civilians with us as well. ... We've got people coming in from all accession sources. We graduated the first [U.S. Air Force Academy] class that had direct commissions, with 86 cadets coming in. ... Our first two [Officer Training School] graduates got commissioned directly into the Space Force. ... Our first seven basic military trainees have now arrived at BMT, and will graduate in December. It will be the first direct accessions on the enlisted side into the force.

We've got the Space Systems Command that we've architected, and we'll stand that up in the spring ... of this coming year, along with what we're calling [Space Training and Readiness] Command.

We're still in the final stages of coordinating [the new acquisition strategy], but I think that's going to pay significant dividends for us. The acquisition organization that we designed will focus on pushing authority down to a lower level, bringing unity of effort across the department, and being able to get at speed the capabilities that we need. We're embracing digital engineering as our standard.

We also took the first step toward ... building a missile warning, missile defense partnership, taking an enterprise approach to that and getting those requirements approved by the [Joint Requirements Oversight Council].

When a service stands up—in my opinion—there's five things a service needs to do to deliver value. First, you need to develop your people. Second, you have to have your doctrine, which we've already completed. Third, you have to have your own budget. Again, we've already done that. Fourth, ... you have to design your force and your force structure. Then fifth, you have to present that force to combatant commands. In the next few months [as of Oct. 29], we'll release the [force design] planning guidance. And then in the months after that, we're going to build the force design, and in doing so, bring unity of effort across the department and reduce the bureaucracy that's involved as well, to get everybody rowing in the same direction, reduce duplication of effort, reduce costs, and get capabilities on orbit fast.

The first year is largely inventing the force. This next year is really integrating that force. This force design will help us integrate with the Department of Defense and the Joint Staff and our other services. ... With a small service, we have an opportunity to [collaborate with foreign countries, commercial companies, and NASA] even more fully.

Q: Where do you want to be one year from now?

A: Our staff structure is already built at the Pentagon. We'll get more people on board. Today we have roughly about 200 on the staff. We're going to grow to about 600 total. It will take us a couple years to do that. ... I would really like to have a top level of force design done and approved by the department.

Our commissioning sources and enlisted accessions will be further refined. We'll stand up professional military educational courses designed for space and continue to evolve those. ... On the 20th of December, I'll be an official member of the Joint Chiefs. Although I'm treated like one today, I go to all the meetings, ... officially one year out is when the law says I become an official member.

Q: What's the status of agreeing on which Army and Navy components to bring into the Space Force, and what are the opportunities and challenges there?

A: I am very pleased with the work that has gone on. We are at about ... 98 percent agreement. You won't see a wholesale taking space out of other organizations. We can't break the Navy, we can't break the Army. But you're going to see those things that make sense, from a mission of the Space Force, to take over, and we're in vast agreement.



There's a couple of minor issues that we're discussing, and I would expect we'll hammer those out over [November] or so. Then the Secretary of Defense will make a decision, and off we go. But we're really close.

Our S1 [personnel staff] is working with the Army A1 and the Navy N1 to get volunteers. Every person that comes over to the Space Force is a volunteer. We can't order somebody to come over. Luckily, we have way more volunteers to come over than we have positions for. We can be very selective. We put in place a process ... modeled after the nuclear Navy, and we're going to interview everybody that wants to come in.

I don't think there's any more significant challenges than what we've already worked over the last year with putting all the processes in place for Airmen to transfer over. ... We wanted to do it in a way that didn't hurt people's careers and provided them an opportunity to have a career path that would be professionally rewarding to them. ... The same thing will apply for other services.

For example ... we designed a way to assign those [Air Force Research Laboratory] folks in the Space Force, but leave them where they are, with an agreement that they could also benefit from the collaboration of all the other labs. Those are the types of issues that we're working, for example, with the Navy: How would you do that to make sure that you don't break the synergies of an organization?

Q: How has your thinking evolved about the right way to address incidents like the Russian "inspector" satellite that the U.S. says threaten National Reconnaissance Office satellites. How do you react to and plan for that as a service?

A: In every talk I give, I say, 'Space is a warfighting domain, just like air, land, and sea.' One of the things that we've found, I've learned, and I know we've learned, is the implications of that statement are significant. The other thing that I always say in every speech is that we want to deter conflict from beginning [in] or ascending into space. The thing that I have learned [is] the value of communicating what an adversary is doing in space. You have seen me in my former [U.S. Space Command boss] hat talk more broadly about what we're seeing, ... what Russia has been doing over the last several months. I think it's important to have a conversation on what [are] safe and professional behaviors in space.

The value of partnerships is really important. The work that we're doing with our partners, largely Five Eyes partners, plus France, Germany, and Japan, is something that the Space Force is really focusing on. ... We still have data-sharing arrangements with many different organizations in many countries, to keep the domain safe for all. We're progressing onto not just data-sharing, but training together, operating together, exercising together, war-gaming together, building capabilities together. When we stood up U.S. Space Command ... I designed an organization called the Combined Force Space Component Command. That was purposely done to make that a combined organization ... with our partners. It's the first time we've ever had that.

A big, ripe area for the Space Force that we're working hard on is overclassification. If you want to deter, you have to be able to help shape an adversary's calculus, and that requires being able to communicate. Right now, we're overly classified. I think we're making some really good work on the strategy on what you would reveal and what you would conceal, which then drives the security architecture that will be beneficial for our efforts to deter.

(Raymond declined to answer how the military responded to Russian satellite activity.)

Q: What are you planning to work on with Capitol Hill in the next year?

A: We've done a lot of design work [on] ... how do you integrate the Reserve forces into the Space Force? Today we operate very closely with the Air National Guard and the Air Force Reserve. We think there is [a way to include Reservists differently], and we've done the work to be able to do that. ... I would expect that that plan will be approved here, probably before [December]. ... But it's really innovative. That will require some legislative proposals to make that happen.

The alternate acquisition system that we've designed, once we get finally coordinated, will require some legislative changes. We'll work very closely with the Hill to be able to do that as well.

Q: Where do you stand on adopting naval ranks like the House proposes?

A: I really appreciate the strong bipartisan support that Congress has given us. We're working very closely to develop the rank structures that we think are important for our force going forward. ... Some of these culture pieces are things that we want to get right. We want to give an opportunity for the folks that are in our service to have a voice. We've just brought in the first 2,100 folks in the service. We've been very deliberate in our efforts to make sure that these things that we do, either the seals or the flags or the naming convention, mean something to the Space Professionals.

We have been in conversations with the staffers, and I've had a couple conversations with members on our ideas on rank.

Q: How have you seen the understanding of military space capabilities change across DOD in recent months?

A: Earlier in my career, you really had to fight to get a seat at the table. It was hard to get people to understand the importance of space. We were just beginning, back when I was a young captain, to integrate space into the fight. Desert Storm was what some call the first space war, the first where we integrated capabilities. That has continued to mature over the years.

You don't have to have that conversation anymore. They understand it. ... On the warfighting side, they understand the value of a U.S. Space Command. They already see the benefits of that command standing up, and same thing holds true on the organize, train, and equip side. I have not felt at all like anything other than, 'Hey, we're glad you're here, and keep moving. This is really important to us.'

Both on the U.S. Space Command side and on the Space Force, I have a stronger voice in requirements. When you elevate from a component of a service to an independent service, there's a big difference between being an Air Force major command commander and being a service chief. That elevation of voice in really critical settings, in budget requirements, and in The Tank, is important.

## Space Force Training Takes Shape

Air Force Magazine, Dec 2020 | Rachel S. Cohen

USSF will take USAF training protocols and fine-tune them to suit the fledgling force.

When the Space Force's top general talks about the future of training, he offers a metaphor for the militarization of the cosmos: airline Capt. Chesley "Sully" Sullenberger versus a fighter pilot.

Sully—the now-retired US Airways pilot who heroically landed his Airbus A-320 in the Hudson River after a bird strike damaged his engines on takeoff—represents the quality of Space Professionals up to now.

The fighter pilot—who must fly at least as well as Sully while also evading and fighting off attack—represents skills space personnel will need in the future.

"We have grown up building Sullys," says Chief of Space Operations Gen. John W. "Jay" Raymond. "We have the world's best space operators. ... We're world-class trained at that. ... But "we now have to shift that to a fighter pilot mentality, have a better understanding of the threats, having a better understanding of how to operate your capabilities through those threats, having a better understanding of potential adversaries. It's a different way of doing business."

As the Pentagon prepares for a second space age, rife with challenges such as signal jamming, anti-satellite missiles, and a growing obstacle course of space debris, simply flying satellites well won't cut it, Raymond says.

Since President Donald J. Trump signed legislation birthing the U.S. Space Force a year ago, the Space Force is building that next generation of service members.

The first seven Space Force enlisted hopefuls shipped out to the inaugural, seven-and-a-half-week Basic Military Training (BMT) at Joint Base San Antonio, Texas, on Oct. 20. Piggybacking on the Air Force's long-standing Basic Military Training process, the first cohort includes five men and two women ranging in age from 18 to 31. Five are White and two are Black. Those who graduate will become the first Space Force members to have been recruited and trained as Space Professionals, rather than transferring in from another branch of service.

The Space Force aims to bring in 312 enlisted recruits in 2021, and 300 to 500 per year after that, as the service looks to maintain or possibly grow its size. It also wants about 250 new officers a year. That's a fraction of the approximately 30,000 new Airmen the Air Force brings in annually.

Chief Master Sgt. Shane Pilgrim, the Space Force's chief of enlisted force development, said the service eventually plans to consolidate its space, intelligence, and cyber recruits into single cohorts at BMT. That would bring the average size of a Space Force basic training group up to 30 or 40 instead—from the initial 10 or fewer.

Indeed, there may not ever be a standard or ideal number, according to Senior Enlisted Adviser Chief Master Sgt. Roger A. Towberman.

"Why do we have to choose? Maybe we do six at a time, and then ... one time next spring, we'll do a class of 30 and we see how that works," Towberman said. "It really is an ecosystem and everything's connected to everything else. I can change something so that basic training works better, and it may make technical training work worse, or it may put the recruiters in a position where they've got to make compromises in order to meet the numbers that they need to keep us on track."

The Space Force will seek recruits and officers in places USAF may not have looked in the past. It aims to strengthen ties to historically Black colleges and universities and hopes to attract more women interested in science and technology.

"We are also targeting demographic areas in the country that are traditionally not fertile grounds for recruits," Pilgrim said.

In contrast to a conventional focus on standardized testing, the Space Force intends to leverage its more intimate size by focusing instead on interviews and a personal assessment process. Those chosen to join the service will receive a tablet with courseware and helpful videos about two months before BMT, and will be paired with mentors to help them prepare.

"Because of our size and scale, we can do things on a more personal level," Pilgrim said.

Once at basic training, recruits will join Air Force BMT recruits, separated by gender, for most training, breaking into Space Force flights only for space-specific training, similar to the way new special warfare Airmen are trained.

For now, just three Space Force training instructors (TI) are assigned to Lackland Air Force Base, Texas, and they will lead Space Force BMT flights. "So that's how we're building in these space experiences—having the flight led by a space TI, having specific courseware to space—but they are still going through Air Force BMT for all intents and purposes."

The Air Force has gradually built more space knowledge into its education regime for all Airmen, teaching the importance of satellites and radars to the rest of the combat force. More specialized Space Force training will go even deeper.

Towberman charged personnel experts to create a unique recruit experience focused on teamwork, warfighter ethos, professionalism, and comprehensive fitness. The service wants its training to feel different from the other armed forces, while still infusing necessary military discipline and the unique space operations culture.

In addition to standard training on personal conduct, physical fitness, and military fundamentals, space recruits will learn “law, policy, orbital mechanics, electromagnetic waves and signals, space environment, space systems, command authorities, and joint space warfighting,” according to a Space Force release.

“We looked at adding a course on our space organization, ... [and] some stuff about our doctrine and our defense space strategy” to explain why the Space Force was created, Pilgrim said. The planning team wanted to create opportunities to discuss space dominance and orbital threats in an unclassified forum, and to cover the past several decades of military space history.

Recruits should likewise learn about the Space Force’s workforce, which employs a greater percentage of officers and civilians than the Air Force, Pilgrim said.

“We also assessed whether some of the courses there, such as the combat arms training, were relevant in the current format to what we’re doing in our mission in the Space Force, and the expeditionary training as well, because our mission is different,” he added.

Space operations are less physical than other military specialties and require fewer deployments, Pilgrim said. “Our training should relate to what we do for our national defense mission.”

#### Digital Natives

As the first branch of the armed forces launched in the computer age, the Space Force pledges to break away from manual processes, starting with the way it educates and trains its workforce.

“We are going to incorporate some video-enhanced courseware, some stuff where we can actually leverage technology to bring the experience of current Space Professionals into BMT,” Pilgrim said. Instead of PowerPoint slides, he’s hoping to bring in guest speakers via livestream or prerecording.

Pilgrim believes a tech-savvy approach is not only valid now, in the midst of the COVID-19 pandemic, but will endure beyond.

“Our tablet initiative allows us to stay connected without being physically connected as much to the recruits, prior to them coming to basic,” he said. “Once they get into that pipeline, they have established controls that are tried-and-true at BMT that will be implemented and will keep them safe.”

Over time, Space Force basic training could grow large enough to warrant its own squadrons and a fuller space curriculum. Everyone should have a basic understanding of space operations, whether they’re a satellite operator or an intelligence analyst, Pilgrim said.

“Gradually, we can build and morph into that. We need to run where we can and crawl where we need to,” he said. “As we get through a couple iterations of this, I think we will learn rapidly, and it’ll be a constant double loop where we go back and reassess.”

Space Force BMT graduates' next stops will be one of three bases: Space operators will go to Vandenberg Air Force Base, Calif.; cyber specialists will go to Keesler Air Force Base, Miss., and intelligence specialists will go to Goodfellow Air Force Base, Texas. Officer Training School (OTS) graduates appear to be following the same path.

For new officers, the Space Force is leveraging the Air Force's OTS; its first two graduates, both women, completed the seven-and-a-half week course in October. A service spokeswoman declined to provide more details, but their next stops will match those of enlisted members.

### Building STARCOM

The Space Training and Readiness (STAR) Delta is responsible for Space Force technical and advanced training. The command is provisional and will evolve over the next year to become the future Space Training and Readiness Command (STARCOM). Currently located at Peterson Air Force Base, Colo., STAR Delta encompasses the 3rd Space Experimentation Squadron, 17th Test Squadron, 25th Space Range Squadron, 527th Space Aggressor Squadron, 705th Combat Training Squadron Operating Location Alpha, and Air Force Warfare Center Det. 1 at Schriever Air Force Base, Colo.; the 319th Combat Training Squadron, Air Force Operational Test and Evaluation Center Det. 4, and National Security Space Institute at Peterson; the 328th Weapons Squadron at Nellis Air Force Base, Nev.; and the 533rd Training Squadron at Vandenberg.

Once established as STARCOM, it will oversee training and readiness for each specific skill set within the Space Force, including missile warning at Buckley Air Force Base, Colo.; command and control at Vandenberg; and navigational warfare and satellite communications at Schriever.

The Air Force started beefing up its space education even before STAR Delta came to be, and will now continue to evolve as the Space Force raises awareness of the threats facing assets on orbit and on the ground, and offers a more holistic view of how those tools fit into the larger warfighting picture. For example, the 533rd Training Squadron is adding rigor to its courses, along with more classified content for both undergraduate officer and enlisted training, said STAR Delta Commander Col. Peter J. Flores.

"Those courses are much more complex now than they were in years past," he said. "They are broader in their perspective, in terms of what are the threats? We're asking people to think about how to prevail in that contested, degraded, operationally limited environment."

Incorporating content marked "Top-Secret/Sensitive Compartmented Information" is important in a line of work that is shrouded in secrecy. Adding that content to the curriculum gives students a more complete understanding of what they might be up against as countries compete for dominance in orbit.

"Some of the concepts can seem pretty abstract," said Maj. Gen. DeAnna M. Burt, then the director of operations and communications at Space Force headquarters, in April. "But when students see it applied to a real-world scenario, suddenly it sticks."

Last year, Burt noted that instead of simply learning what the different orbital layers around the Earth are called and how high they sit, undergrads will also learn why the military uses each layer, how space operations differ from air ops, how to determine when systems are being jammed, and more.

"If I have to move satellites and keep them in mission, if I have to move and stop doing mission in order to save that vehicle, what does that look like?" she said. "Why would I do that? What are all those agencies doing to each other, and how are they talking and integrating in a fight?"

Introducing those concepts in school means students will have less to learn when they get to their duty stations—and

be better primed to learn more quickly on the job. To accommodate the additional coursework, undergraduate space training has also expanded from 76 days to either 87 days for enlisted students or 110 days for officers.

There's more work to do to find the sweet spot for how many people should move through space operations training each year. Pandemic precautions have limited class sizes, "strangling" the education pipeline, Flores said. Bringing in new members from the Army, Navy, and Marine Corps, as well as Air Force personnel who transfer into space operations, will affect that in the future.

Courseware and staffing may change over time as class sizes fluctuate and stabilize.

"Does everybody need to show up on Day One for undergraduate space training for a multi-month operation?" Flores asked, posing one of many questions he's trying to answer now. "Or if you're coming from some other discipline that preps you for that, can we turn some of that into ... online courses that then limits the amount of time you have to spend on the ground?"

#### Technical Schools

For technical training, the Space Force now offers 15-day courses in space warfighting disciplines such as orbital warfare, electronic warfare, and space battle management. About 120 students have graduated from those classes so far, Chief of Space Operations Gen. John W. "Jay" Raymond said in September.

Building that curriculum to meet the needs of Space Force doctrine is the biggest challenge for the 319th Combat Training Squadron, Flores said. Indeed, officials are mulling whether the Space Force could use the same instructors for both initial and technical training.

"Do we have to do basic training separately from anything?" Towberman mused. "Could we do basic training as part of tech school and it's just called training and you just show up and you do it all together in one location?"

Burt has compared weapon system training to how the Air Force matches Airmen with planes: the service first teaches them to fly, then splits them to learn about different categories of aircraft, then assigns them a particular airframe. Space personnel will learn their systems "down to every knob and bolt and screw" like Airmen would the F-35 Joint Strike Fighter, she said.

#### Building on History

Wherever possible, the Space Force is leveraging existing Air Force institutions to deliver its education and training needs. As it is with Air Force BMT and OTS, the Space Force is relying on Air University, its Senior Noncommissioned Officer Academy (SNCO), and the U.S. Air Force Academy (USAFA) to help educate its future leaders.

Last April, USAFA graduated 86 cadets who commissioned into the Space Force as second lieutenants. They were among the very first officers to enter the service.

Air University is adding space warfighting to its core curriculum at Airman Leadership School, doubling its Schriever Space Scholars program to include about two dozen participants, and launching the West Space Seminar through the Air War College. Soldiers, Sailors, Marines, and foreign military personnel are all playing an increasingly large role in professional space education, as well.

"All Space Professional students will be enrolled in the 'Space Grey Rhinos' space concentration, where they will study space as an instrument of power and policy," Air University announced in an August release. "Students will participate in the Air University Advanced Research capstone project, researching space topics and presenting ideas to the U.S. Space Force in a final outbrief."

Air University graduated its first Space Force members from the SNCO Academy in September. Reserve Officer Training Corps participants will also get a heavier dose of orbital issues in their collegiate program.

Over time, adding “space flavor” may transcend orbital studies to include cultural elements central to USSF in future professional military education (PME), Towberman says.

“If we decide that we want to work more on interpersonal communication skills, we might change interpersonal communication in PME,” he said. “That wouldn’t be a space thing, right? It would be a Space Force thing.”

Diversity and inclusion training will be part of Space Force BMT, for example, and members will practice broaching sensitive topics with a computer avatar so they feel more comfortable discussing those issues in real life.

Another bedrock competency for the Space Force will be digital literacy. Space Force members will take 6,000 spots in the Department of the Air Force’s Digital University, an online course catalog of IT and cybersecurity training and computer science language coursework, Raymond said in September. The objective is to apply those skills across the enterprise. For Space Flag, the Department of the Air Force’s premier large-scale space training exercise, STAR Delta wants to improve its modeling and simulation capabilities so more people can participate more often.

Over two weeks last August, STAR Delta held its first major exercise—the ninth edition of Space Flag—at the Boeing Virtual Warfare Center in Colorado Springs, Colo. The event split 34 participants into red, white, and blue cells. Blue players practiced moving space assets on orbit to respond to threats; white players provided command and control; and the red players worked to disrupt the blue team’s operations.

It’s often hard to practice orbital offense and defense without actually being there. Flores said building more advanced simulators can help show how things might play out in an electronic or physical war. Those artificial environments need to be as realistic as possible and include the National Reconnaissance Office, other countries, private contractors, and anyone else the Space Force would need to work with in a fight.

“When crew members come in—whether they’re cyber, space, intel—they can come in and it will feel, it will taste, and it will smell like the environment they’re expected to operate in, with all the inputs,”

Flores said. “As they make decisions through that fight, the system can react to that and can give them feedback on how things went.”

Space Flag is organized by STAR Delta Operating Location Alpha (OL-A), which transferred to the Space Force this year after being part of Air Combat Command for the prior seven years. The organization provides some of the glue connecting air and space assets in combat.

“[We’re able to] project electronic intelligence data into HH-60 cockpits to help the aircrews locate downed Airmen anywhere on the globe,” OL-A director Kevin Rhoades said in a press release earlier this year. “We generally do this over [continental U.S.] ranges, but recently supported an expeditionary rescue squadron downrange in the [United States Central Command area of responsibility].”

The service is also looking to Red Flag, on which Space Flag is based, and other ventures at Nellis for best practices in training.

“I think everyone understands that warfighting is warfighting,” Burt said. “The kinematics and the domain may be different, but how we fight, and the doctrine, and the way we get offense and defense ... are no different from one domain to the other.”

Schriever Wargame, an annual futures event that brings together hundreds of military and civilian participants from across the globe, may eventually fall under STARCOM, as well. The game is now under Pentagon oversight.

The important thing to remember, Towberman says, is that the Space Force is still new, still ironing out the many details necessary to establish the training and culture it needs to be successful in the future.

The service is embarking on what Towberman calls “small-batch solutions” as a means to float trial balloons on everything from workout uniforms to training in focus groups.

“We don’t have to come up with a final answer that’s going to apply to the full force for what we think is the next 10 years,” he said. “We can say, ‘Hey, let’s do something that applies to a small group.’ And try it out and see what it looks like. Then if we like it, we’ll scale it.”

Thomas Plumb

NASA Liaison - Peterson AFB, CO

USSF USSPACECOM NORAD/USNORTHCOM

O 719.554.4900 C (b) (6) Thomas.j.plumb@nasa.gov



## RE: DoD tagup discussion item

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From: Plumb, Thomas J. (HQ-TA000) <thomas.j.plumb@nasa.gov>  
To: Cruz, Randy C. (HQ-AA000)[Affiliate] <randy.c.cruz@nasa.gov>, Drew, Benjamin A. (HQ-TH000) <b.a.drew@nasa.gov>  
Sent: December 9, 2020 12:26:43 PM EST  
Received: December 9, 2020 12:26:44 PM EST

Just in my news in-box:

<https://www.popularmechanics.com/military/research/a34908126/leaked-ufo-photo-motionless-cube-shaped-object/>  
<<https://gcc02.safelinks.protection.outlook.com/?url=https://www.popularmechanics.com/military/research/a34908126/leaked-ufo-photo-motionless-cube-shaped-object/&data=04|01|randy.c.cruz@nasa.gov|a91c523490244ffe5e6308d89c6798cb|7005d45845be48ae8140d43da96dd17b|0|0|637431316049641427|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTil6Ik1haWwiLCJXVCi6Mn0=|1000&sdata=8FhzeJneQpDlBkAD/5xc84IhyY77Phla+pdcl/Nlzxw=&reserved=0>>

Must be a sign.

Tom

From: Plumb, Thomas J. (HQ-TA000) <thomas.j.plumb@nasa.gov>  
Sent: Tuesday, December 8, 2020 10:53 AM  
To: Kieffer, Margaret (HQ-TH000) <margaret.kieffer@nasa.gov>; Flynn, David T. (HQ-TH000) <david.flynn@nasa.gov>; Drew, Benjamin A. (HQ-TH000) <b.a.drew@nasa.gov>  
Cc: Cruz, Randy C. (HQ-AA000)[Affiliate] <randy.c.cruz@nasa.gov>; Plumb, Thomas J. (HQ-TA000) <thomas.j.plumb@nasa.gov>  
Subject: DoD tagup topics, 8 December 2020, 1300EST/1100MST

DoD tagup topics, 8 December 2020, 1300EST/1100MST

AF-NASA-NRO Summit (AFNNS), 1 Oct 2020

- Summit was originally planned for 1 October, in order to be before the November 2020 36th Space Symposium (now August 2021). Postponed by the Principals to develop topics

- Planned topics:

- Protect & Defend Strategy (OPR: DAF/USSF, NRO)

- Cislunar Plans and Opportunities (OPR: NASA lead) (DAF OCR Capt Buehler NRO OCR Dr. Knight)

- Norms and Behavior (OPR: DAF/USSF)

- Plus One only telecons 24 November, 4 December. Discussing if principles available for a Summit in December or January. If no AFNNS, would CSO Gen Raymond and the Administrator want to try to meet?

USSPACECOM - USSF ST - NASA monthly S&T / Cislunar tagup, Friday, 4 December, 1300MST

- Regular monthly group: USSC J8 Jeff Todd, USSF Chief Scientist Office ST Michele Gaudreault, NASA OIIR

- This month focus was reviewing the AFNNS Cislunar BBP
- Participants included AFRL Buehler, Frith, Finley, AF SP, NGA Yousef Butt, Randy Cruz
- Productive discussion on BBP and cislunar USG collaboration way forward
- Will continue meetings with the group

Space Rapid Capabilities Office (SpRCO) tagup, 8 December, PAFB

- Colonel Jeremy Raley in from Kirtland AFB

NGA Yousaf Butt reach out to OIIR for non-science NEO PD data

- Contacted M, indicated had touched base with Lindley Johnson
- Lindley had discussed topic with Yousaf and is waiting for his plans
- Tom touched base with Lindley and met with Yousaf

PAEP Ray Taylor retiring end of December

- Teams site with reference materials related to Enterprise Protection

Space Force Astronaut

- Mike Hopkins (USAF), Crew 1, planning to commission to Space Force on ISS around the 1 year USSF anniversary
- NASA looking at a live event on 18 December, NASA TV, visitors in NASA HQ SOC may include CSO Raymond and SECAF Barrett

- <https://spacenews.com/nasas-crew-1-commander-to-be-sworn-into-u-s-space-force-from-the-international-space-station/> <<https://gcc02.safelinks.protection.outlook.com/?url=https://spacenews.com/nasas-crew-1-commander-to-be-sworn-into-u-s-space-force-from-the-international-space-station/&data=04|01|randy.c.cruz@nasa.gov|a91c523490244ffe5e6308d89c6798cb|7005d45845be48ae8140d43da96dd17b|0|0|637431316049651425|Unknown|TWfPbGZsb3d8eyJWljoimc4wLjAwMDAiLCJQljoiv2luMzliLCJBTiI6lk1haWwiLCJXVCI6Mn0=|1000&sdata=urAc5nnlzBaBc5c0wLzwQJCeIEJaYdr3XqdJ7VjACYo=&reserved=0>>

- <https://slate.com/technology/2020/11/iss-space-force-no-thank-you.html> <<https://gcc02.safelinks.protection.outlook.com/?url=https://slate.com/technology/2020/11/iss-space-force-no-thank-you.html&data=04|01|randy.c.cruz@nasa.gov|a91c523490244ffe5e6308d89c6798cb|7005d45845be48ae8140d43da96dd17b|0|0|637431316049651425|Unknown|TWfPbGZsb3d8eyJWljoimc4wLjAwMDAiLCJQljoiv2luMzliLCJBTiI6lk1haWwiLCJXVCI6Mn0=|1000&sdata=c0T+rJJkQ64Q7U1kNy7ffjwltA4GD3vOmNabTPMeiFA=&reserved=0>>

USSPACECOM request for NASA AO-level POCs for strategic messaging

- Reach out by Col Oakes, USSF, Chief Space Policy Division, JS J5-StS, Pentagon
- USSPACECOM DJ5, Deputy Director for Strategy, Plans and Policy, Brig Gen Rick Zellmann
- Developing strategic messaging

## USSPACECOM HSFS OPT ARTEMIS PROGRAM

- USSC Operational Planning Team for Artemis program, Tuesdays, 1230MDT
- OPORD development. Nominal recovery astronauts, Orion, boosters, Contingency ops.
- NASA Artemis ground ops POCs linked up:
- Melissa Jones, EGS, Landing and Recovery Director, Carla Rekucki, deputy; Jim Hamblin, Element Operations Manager
- Updating booster salvage plans (not initially), frequency of missions (1/year after Artemis II), Artemis 1 launch date (Aug 2021)

## USSPACECOM HSFS "Working Group", Wednesday Telecons

- Crew 1 preparations, launch 15 November; recovery
- Discussion of support for Crew-1 planned capsule port change during mission / status of forces

## NEO updates

- Memo to USSF S3/6 asking to authorize SNL to release GPS S3 data to NASA/SDL to assess potential future source of bolides

<https://www.imo.net/a-fireball-lit-up-japanese-skies-on-nov-28/>

<<https://gcc02.safelinks.protection.outlook.com/?url=https://www.imo.net/a-fireball-lit-up-japanese-skies-on-nov-28/&data=04|01|randy.c.cruz@nasa.gov|a91c523490244ffe5e6308d89c6798cb|7005d45845be48ae8140d43da96dd17b|0|0|637431316049661414|Unknown|TWFPbGZsb3d8eyJWljoimc4wLjAwMDAiLCJQljoiv2luMzliLCJBTiI6lk1haWwiLCJXVCI6Mn0=|1000&sdata=n2g1/qaP8uZbfK/zB0AQdCAiycHmnrQVQ1iEsYsjmY=&reserved=0>>

<https://www.cbsnews.com/news/meteor-sonic-boom-light-flash-multiple-states-ontario/>

<<https://gcc02.safelinks.protection.outlook.com/?url=https://www.cbsnews.com/news/meteor-sonic-boom-light-flash-multiple-states-ontario/&data=04|01|randy.c.cruz@nasa.gov|a91c523490244ffe5e6308d89c6798cb|7005d45845be48ae8140d43da96dd17b|0|0|637431316049671411|Unknown|TWFPbGZsb3d8eyJWljoimc4wLjAwMDAiLCJQljoiv2luMzliLCJBTiI6lk1haWwiLCJXVCI6Mn0=|1000&sdata=5TD7n7D2wd6DiEV0CACQKsFnioSZdPKut+29tuozLME=&reserved=0>>

- Chang'e booster return from lunar orbit

## USSF / USSC Updates

- 1-year US Space Force Birthday events, 20 December
- BG Schiess enroute to Peterson AFB SpOC
- MG Burt arrived in Vandenberg AFB, USSPACECOM CFSCC/CC, SpOC West

NASA CERES observation program request to Space Force for GPS optical sensor data

- Thursday, 22 October, 1430MDT telecon discussion
- Sandia looking at science applications for DoD mission data
- GPS data can reflect earth albedo, has science potential
- Discussed with NASA CERES PI Norman Loab
- Sandia sent a report over SIPR to Space Force, with request to release at FOUO, would be passed to CERES
- Report will assist CERES understanding on value of the data

#### EPP Zero-Based Review (POC Dave Adams)

- FY21 Goal 6 "Identify driving protection considerations for Cislunar operations". Cognizant organizations: HEOMD\*, SMD, OCE.
- FY23 Goal 5 "Convey NASA protection dependencies for Cislunar operations with partner agencies". Cognizant organizations : OIR\*, HEOMD, SMD, OCE.

#### Thor's Hammer 21 (June 2021)

- Initial Planning Conference, TS/VOIP, 12 November, 10-1300EDT. (POC NRO Steve Jones)
- Dave Adams participated for NASA
- Mid Planning Conf 4 Feb 2021, Final Planning Conf April 2021, TH21 June 2021 (5-8 day TBD, distributed virtual TS)

#### Schriever Wargame 2020 (SW20)

#### SW21

- Concept Development Conference (CDC) moved to classified virtual, 19-21 January

#### ARTICLES

##### Trump Admin to Rename Two Bases for Space Force Over Military Objections

The Air Force had quietly agreed with Congress not to change anything until the NDAA settles a way forward on Confederate base names

DefenseOne.com (Exclusive), 7 Dec 20 | Marcus Weisgerber

The U.S. Air Force plans to change the names of two Florida military bases heavily involved in Space Force operations during a Wednesday ceremony with a guest list including Vice President Mike Pence, Defense One has learned.

The renaming ceremony has been ordered by top Trump administration officials as part of the Space Force's first birthday. But U.S. officials familiar with the matter said the changes violate a gentleman's agreement with congressional staffers who asked the military not to rename any bases until after President Donald Trump signs the fiscal 2021 National Defense Authorization Act. The officials spoke on the condition of anonymity to openly discuss the

renaming, which has not been publicly announced.

Patrick Air Force Base will be renamed Patrick Space Force Base and Cape Canaveral Air Force Station will be renamed Cape Canaveral Space Force Station, the officials said. Both bases are involved with launching military rockets on the cape.

The bases will still be overseen by the Department of the Air Force, which also oversees the Space Force. New signs at the base entrances will cost taxpayers \$50,000, according to a person with knowledge of the plan.

Other high officials expected to attend the renaming ceremony include Deputy Defense Secretary David Norquist; Air Force Secretary Barbara Barrett; Gen. Jay Raymond, the chief of space operations; and Gen. C.Q. Brown, the Air Force chief of staff. Pence, is also scheduled to chair a Wednesday meeting of the National Space Council at nearby Kennedy Space Center.

The ceremony will be held amid a record spike in coronavirus cases and public health officials' pleas not to travel.

Earlier this year, Raymond said the Space Force would forgo base renaming and their attendant gatherings until the need for social distancing subsides. The issue came up again in the fall when Air Force officials discussed renaming the bases as part of the Space Force's first birthday on Dec. 20.

Instead, the Air Force forged an informal agreement with congressional staffers not to rename any military installations until after Trump signed the fiscal 2021 National Defense Authorization Act. The bill contains legislation that would create a commission to oversee renaming of bases named after Confederate soldiers.

An Air Force spokeswoman declined to comment on the renaming. She deferred questions about this week's National Space Council meeting to the White House. A National Space Council spokesman did not immediately respond to a request for comment.

The House and Senate could vote on the bill as soon as this week. Trump has threatened to veto the legislation if it includes language to rename Confederate bases, and unless it repeals a law that protects social media companies.

Patrick Air Force Base is named after Maj. Gen. Mason Patrick, the first chief of the Army Air Corps.

House and Senate Committees Agree on FY2021 NDAA

<[https://gcc02.safelinks.protection.outlook.com/?url=http://feedproxy.google.com/~r/Spacepolicyonline/~3/sz5KOh9zPcM/?utm\\_source=feedburner&utm\\_medium=email&data=04|01|randy.c.cruz@nasa.gov|a91c523490244ffe5e6308d89c6798cb|7005d45845be48ae8140d43da96dd17b|0|0|637431316049671411|Unknown|TWFpbGZsb3d8eyJWljoimc4wLjAwMDAiLCJQIjoiV2luMzliLCJBTil6Ik1haWwiLCJXVCi6Mn0=|1000&sdata=vazgnImNQz8yAzURvtVU1gmsSzBZFoTVXpQoWZhCnIc=&reserved=0](https://gcc02.safelinks.protection.outlook.com/?url=http://feedproxy.google.com/~r/Spacepolicyonline/~3/sz5KOh9zPcM/?utm_source=feedburner&utm_medium=email&data=04|01|randy.c.cruz@nasa.gov|a91c523490244ffe5e6308d89c6798cb|7005d45845be48ae8140d43da96dd17b|0|0|637431316049671411|Unknown|TWFpbGZsb3d8eyJWljoimc4wLjAwMDAiLCJQIjoiV2luMzliLCJBTil6Ik1haWwiLCJXVCi6Mn0=|1000&sdata=vazgnImNQz8yAzURvtVU1gmsSzBZFoTVXpQoWZhCnIc=&reserved=0)>

Posted: 03 Dec 2020 08:55 PM PST

While it seemed like a long shot, at best, just days ago, the House and Senate defense authorization committees finalized the FY2021 National Defense Authorization Act (NDAA) today, defying two veto threats from President Trump. Determined to make it 60 years in a row that an NDAA has been enacted, the two parties and the [...]

Biden Mulls Space Council's Future

Politico

4 December 2020

Members of Biden's transition team held a series of meetings this week with commercial space leaders from across the industry to get their take on the National Space Council, an industry official told POLITICO. The panel, which President Donald Trump revived in 2017, has been behind the administration's space policy directives on everything from human exploration to the U.S. Space Force and cutting burdensome regulations.

"The first question they asked was what did we think about the space council and do we think it's effective," said the industry official, who spoke on background to discuss the private meeting. "We all warmly endorsed it." The transition team has also asked NASA Administrator Jim Bridenstine about his views on how useful the panel is, the source said, adding that Bridenstine is also "a believer" in the committee's value.

"It made space a national priority and elevated it within the West Wing," the source said, describing what participants told the transition team. "We feel that the five space policy directives were very helpful and moved the ball forward."

Biden has yet to say whether he will keep the panel, which is historically led by the vice president. But space officials have widely praised the council for both elevating the national conversation about space and enlisting new parts of government on space goals, including the chairman of the Joint Chiefs and the secretaries of Commerce and Energy.

The National Space Council will meet on Wednesday at Kennedy Space Center in Florida, the eighth and possibly final time under Vice President Mike Pence.

Vandenberg's multinational CSpOC team supports NASA's multinational space missions

Vandenberg Public Affairs, Dec. 1 | Maj Michael Lang, Royal Canadian Air Force

I have had the privilege of working on two historic NASA missions over the past year, during which the United States launched astronauts into space from its own soil for the first time since 2011. Although these launches took place from a launch pad in Florida, my team's participation in both launches took place from the Combined Space Operations Center (CSpOC) at Vandenberg AFB, Calif. This team of space experts from Vandenberg not only had Americans and Canadians like me on it, but a whole host of multinational partners as well.

The first of the two crewed launches this year took place on May 30, 2020, and it was no surprise seeing the excitement around the operations floor leading up to the event. That day, the SpaceX Demonstration Mission #2 (DM-2) launched from the John F. Kennedy Space Center, and marked the first launch of U.S. astronauts from U.S. soil since the last launch of the space shuttle, Atlantis, occurred on July 8, 2011.

Our team here at the Combined Force Space Component Command's CSpOC worked with a variety of U.S. and international units to ensure this was a well-planned and executed mission. In the weeks prior to the launch, we used our existing relationships with Australia, Canada, France, Germany, New Zealand and the United Kingdom to identify where the allies could provide support to the mission. Once support had been formally requested, the CSpOC sensor plan was then integrated in to a wider U.S. Space Command sensor plan to ensure senior leaders had sufficient situational awareness for the duration of the mission. What we noticed from this launch was simple: human space flight is exciting to everyone, regardless of what country is launching astronauts into space.

From my perspective as a space operations officer and air traffic controller, the DM-2 mission pushed us even harder to find creative ways to disseminate real-time data to all partners and ensure all sensors were primed and ready to track the spacecraft on its way to the International Space Station (ISS). For instance, we initially discovered that no two countries "spoke the same language" when describing technical data, and we quickly realized we needed to collaborate and standardize the reporting of this important data for mission success. These lessons are applicable across a number of missions we conduct with our allied partners and, by incorporating them on a daily basis, will help make our operations more effective.

The second mission sending humans to space from the United States took place on Nov. 16, 2020, aboard the SpaceX Dragon Crew-1 'Resilience' capsule. Like the CSpOC team that supported the mission, the crew of three Americans and one Japanese astronaut was also multinational.

I had the honor of being the CSpOC lead for the Dragon Resilience mission. Many of the core functions of this CSpOC team were similar to the DM-2 mission, which included providing Space Domain Awareness to Dragon Resilience and the ISS to avoid any collisions with other space objects and, equally as important, to communicate that data between NASA Johnson Space Center and other partners on this mission. We also tracked Dragon Resilience's trajectories as it maneuvered to the ISS, actively disseminated this information to partner sites, and communicated with the 18th Space Control Squadron, also at Vandenberg AFB, for tracking real-time milestones such as maneuver times, docking, and status of the capsule.

I certainly think that our small team of about 15 people at Vandenberg made a big impact on the successful Dragon Resilience mission. We are also shaping the future of human space flight by redefining how we work together and execute those missions with the help of our allies and partners. With Australia, Canada, France, Germany, New Zealand, the United Kingdom, and others showing support to the program, I am hopeful that future missions only grow in terms of multinational presence and partnerships. It makes sense to have a multinational team supporting multinational space missions. We are certainly stronger together.

#### About the Author

Major Michael Lang is a Royal Canadian Air Force Officer assigned to the Combined Force Space Component Command's Combined Space Operations Center (CSpOC) at Vandenberg Air Force Base, Calif. He is the first allied partner there to hold the role of deputy chief, Human Space Flight Support, and has a background in Space Operations and Air Traffic Control. He was also the CSpOC lead for the recent SpaceX Dragon Crew-1 'Resilience' mission. He has worked Missile Warning and Space Domain Awareness at Beale AFB, Calif., and was deputy chief within Delta 2, formerly known as the 21st Operations Group, Standardization and Evaluation Division, at Peterson AFB, Colo.

#### Space Force planning a 'disruptive' acquisitions command

Gen. John Raymond said the Space Systems Command will include a mix of legacy and nontraditional procurement offices

SpaceNews Online, Dec. 2 | Sandra Erwin

WASHINGTON -- Gen. John "Jay" Raymond said the Space Force is close to finalizing the layout of its future acquisitions command, a large organization that will consolidate multiple agencies that currently operate independently.

"Our next big step is the Space Systems Command," Raymond said Dec. 2. "I just reviewed a design over the last couple of days, and I think next week hopefully they'll come to me with the final product."

Raymond spoke at the virtual West Coast Aerospace Conference hosted by the Air Force Association's Mitchell Institute. He was interviewed by Jamie Morin, vice president of the Aerospace Corp.

Morin asked Raymond to explain how the Space Force plans to bring more technological innovation and fresh thinking into the service's acquisition programs.

Raymond said the Space Systems Command will include a mix of legacy and nontraditional procurement offices. "I

think you're going to see an organization that has disruptive innovators, prototypers and more traditional," he said. The goal is to have "unity of effort, reduced duplication, reduced cost and increased speed."

Raymond said he is pushing the service to become more creative, innovative and less fearful of taking risks with new technology.

To accelerate innovation and reduce costs "you have to change the business model," said Raymond. The military can't take risks using unproven technologies when it buys huge billion-dollar satellites that perform critical tasks, but can take more risks with systems that use cheaper mass-produced satellites that can be more easily replaced, said Raymond. "I think what you'll see is a hybrid approach. We'll have a diversified portfolio."

In his Space Force "Planning Guidance" document released last month, Raymond said he wants to see "productive disruption."

"I expect commanders and program managers to accept moderate risk associated with innovation and experimentation to build an agile force," Raymond wrote.

The future acquisitions command will be run by a three-star general. It will include the Space and Missile Systems Center at Los Angeles Air Force Base. Other organizations that will be merged into the command are the Commercial Satellite Communications Office — a group based in the Washington D.C. area that manages the procurement of commercial satcom for the Defense Department — and portions of the Air Force Research Laboratory's Space Vehicles Directorate, based at Kirtland Air Force Base, New Mexico.

The Space Force organizations that oversee space launches at Cape Canaveral Air Force Station, Florida, and Vandenberg Air Force Base, California, also will become part of Space Systems Command.

Still unclear is how the Pentagon's Space Development Agency and the Space Rapid Capabilities Office will be aligned with the new command.

A report released Dec. 2 by the Secure World Foundation criticizes the Space Force for not moving fast enough to consolidate acquisition offices.

"There is general agreement that the current process is too slow and rigid to respond to emerging threats, in part due to the lack of central authority," the report says. "A study done by the Government Accountability Office in 2017 found more than 60 agencies had some say in space acquisitions, and to date that number has only gone up with the creation of new agencies such as the Space Development Agency and the U.S. Space Force." The Space Force does not include the space acquisitions of the intelligence community, which will remain separate.

**STARCOM: Training Troops To Fight Space Wars, Boldly**

Breaking Defense, Nov 30 | Theresa Hitchens

WASHINGTON: Space Force's new training and readiness unit, called STARCOM, is working from the ground up to figure out what doctrine, skills and tech space professionals will need for orbital warfare.

"What we are really bringing to the fight is focus. Focus on space," Col. Peter Flores, commander of the Space Training and Readiness (STAR) Delta Provisional at Space Operations Command, said in an interview today. (STAR Delta is the predecessor to a brand new training and readiness field command, that will be called STARCOM. It will be led by a two-star and is expected to be up and running sometime next year.)

"We've decided that the topic is important enough and unique enough that we need a group of people who understand



it down to its most fundamental levels,” Flores added.

Currently, Flores is overseeing 900 personnel, shifted over from a mishmash of former Air Force units. Those units include:

3d Space Experimentation Squadron, Schriever AFB

17th Test Squadron, Schriever AFB

25th Space Range Squadron, Schriever AFB

319th Combat Training Squadron, Peterson AFB

328th Weapons Squadron, Nellis AFB, Nevada

527th Space Aggressor Squadron, Schriever AFB

533d Training Squadron, Vandenberg AFB, California

USAF Warfare Center Detachment 1, Schriever AFB

705th Combat Training Squadron Operating Location Alpha, Schriever AFB

Air Force Operational Test & Evaluation Center Detachment 4, Peterson AFB

National Security Space Institute, Peterson AFB

Vosler Noncommissioned Officer Academy, Peterson AFB

As is obvious from the list, much of the past training for space operators within the Air Force was located in Colorado — so the location has required little by way of personnel or budget reshuffling. Indeed, Flores explained, each of those units came with their own funding and budgets intact.

But, because it will be a new command, a basing decision will be required to determine where STARCOM's HQ will stand. And, Flores said, he expects STARCOM will reorganize, and grow, as the Space Force turns its gaze from legacy missions to new ones.

“I hate to speculate on the size, but I think as the Space Force across the board right-sizes its field commands ... we'll see some transition billets here and there, and I think we'll grow a little bit over time,” he said.

Flores says his team has four goals. The first is simply taking care of today's space professionals, especially during the COVID-19 pandemic. Second, it ensures that current training missions and endeavors are able to continue “unabated.” Third is to bring together the disparate training and readiness units into a more cohesive structure to “make a better whole.” And, fourth, preparing for the transition to STARCOM.

The primary difference between the training regime being developed by STARCOM from past practices is that it is focused on space as a domain of warfare.

They are preparing the Space Force “to prevail in a contested, degraded, and operationally-limited environment,” a Space Force press release explains. That entails developing space warfighting doctrine and tactics, techniques, and procedures, as well as the testing and evaluation of Space Force capabilities,.

This is a bigger task than it might seem at first glance, precisely because there isn't a well-established body of space warfighting doctrine available to build space-mission education and training regimes from.

Flores said Space Force will continue to look to legacy doctrine — such as Joint Doctrine 3-14 Space Operations — as well as warfighting doctrine from other domains, because there are still lessons to be learned from them. “The essential nature of war hasn't changed,” he said.

On the other hand, Flores noted, there also is a need for new thinking that more closely reflects the differences (such as the effects of the laws of physics) between operating in space and operating in other domains. “Anybody who's been in the domain, so to speak, for a while, recognizes some of the limitations of trying to translate doctrine from other domains into what happens in space,” he said. “Now, as we go through this process, we've got this amazing opportunity here to write our own book to decide what does really work for space.”

The Spacepower Capstone Doctrine released by Chief of Space Operations Gen. Jay Raymond on Aug. 10 begins that process of creating more specific warfighting concepts for space and building “combat ready space forces.”

The doctrine explains that Space Force personnel will be trained in a set of five core competencies that define how “spacepower” is employed, as well as one or more narrower “spacepower disciplines.”

The core competencies are: Space Security; Combat Power Projection; Space Mobility & Logistics; Information Mobility; and Space Domain Awareness.

The seven specialized “disciplines” are:

Orbital Warfare

Space Electromagnetic Warfare

Space Battle Management

Space Access & Sustainment

Military Intelligence

Cyber Operations

Engineering / Acquisition

The follow-on CSO Planning Guidance released early this month specifies that STARCOM “will develop the unique curricula required by the first four disciplines of Orbital Warfare, Space Electromagnetic Warfare, Space Battle Management, and Space Access and Sustainment. In addition, STARCOM will facilitate inclusion of space-unique content for Military Intelligence, Cyber Operations, and Engineering and Acquisition career fields for individuals intending to join or support Space Force units.”

Flores said that his team already is looking to establish training in the first three areas, but has yet to really figure out what should be in the broader category of Space Access and Sustainment. Further, he explained, the weapons school course that formerly concentrated on “space superiority” now has been split into the three more specific subjects of “orbital warfare, electronic warfare and space battle management.”

One thing is clear, Flores said, and that is that space professionals from will have to have a much higher-fidelity

understanding of the technical aspects of how space systems operate from now on.

“I think Gen. Raymond has been pretty clear about that,” he said. “Everybody involved in the enterprise is going to expect that, as a ticket to get on the ride, you’re going to have to know a little bit more about the space domain than maybe you did in the past.”

The CSO Planning Guidance also puts a premium on empowering personnel, from the bottom up, to think “boldly,” to innovate, and be willing to take “prudent risks.”

“Empowerment is a key component of agility, innovation, and boldness. Leaders must continually develop and empower teams capable of seizing the initiative, pursuing innovation, and taking responsibility for their actions. Training, education, and mission-type orders are the foundation of empowerment; however, empowered teams are built through active practice,” the document says.

“How to inculcate boldness is a tricky question, right?” said Flores. “I think what you need to do is you need to celebrate those attempts, even when they don’t go great. Do we learn something from it? Was it was grand failure that we got something from? Or maybe we didn’t get something from, we just identified that ‘hey, that’s not the way to work,’ but that’s okay, learn from that and we can move on.”

Topics: Joint Doctrine 3-14 Space Operations, military training, Peterson AFB, space, Space Force, Space Operations Command, Space Training and Readiness Command (STARCOM), Training Series 2020

Q&A: Staffing and Shaping the Space Force

Air Force Magazine, Dec 2020 | Rachel S. Cohen

Gen. John W. “Jay” Raymond is the first Chief of Space Operations of the new U.S. Space Force. He spoke with Air Force Magazine Senior Editor Rachel S. Cohen about the service’s future. This conversation has been edited for length and clarity.

Q: The Space Force turns 1 year old this winter. What are some of your goals over the next few months?

A: I really couldn’t be more excited for where we are and what we’ve already accomplished, and maybe even more excited about the opportunities that are ahead of us. The U.S. is leading in space globally. We’ve seen other countries follow suit as the U.S. has elevated space, ... with France, for example, the United Kingdom, and now Japan standing up a space unit, with more to follow. ... I’ve visited a few universities since we’ve been established and what I’m being told by those universities is their applications for getting into space-related majors are up, and so I think there’s a lot of good news for our nation.

On the people side, ... in December, we’ll probably be around 2,500-ish. This [fiscal] year, we’ll get to roughly 6,700 folks that are on Active duty, and we’ll have civilians with us as well. ... We’ve got people coming in from all accession sources. We graduated the first [U.S. Air Force Academy] class that had direct commissions, with 86 cadets coming in. ... Our first two [Officer Training School] graduates got commissioned directly into the Space Force. ... Our first seven basic military trainees have now arrived at BMT, and will graduate in December. It will be the first direct accessions on the enlisted side into the force.

We’ve got the Space Systems Command that we’ve architected, and we’ll stand that up in the spring ... of this coming year, along with what we’re calling [Space Training and Readiness] Command.

We’re still in the final stages of coordinating [the new acquisition strategy], but I think that’s going to pay significant dividends for us. The acquisition organization that we designed will focus on pushing authority down to a lower level,

bringing unity of effort across the department, and being able to get at speed the capabilities that we need. We're embracing digital engineering as our standard.

We also took the first step toward ... building a missile warning, missile defense partnership, taking an enterprise approach to that and getting those requirements approved by the [Joint Requirements Oversight Council].

When a service stands up—in my opinion—there's five things a service needs to do to deliver value. First, you need to develop your people. Second, you have to have your doctrine, which we've already completed. Third, you have to have your own budget. Again, we've already done that. Fourth, ... you have to design your force and your force structure. Then fifth, you have to present that force to combatant commands. In the next few months [as of Oct. 29], we'll release the [force design] planning guidance. And then in the months after that, we're going to build the force design, and in doing so, bring unity of effort across the department and reduce the bureaucracy that's involved as well, to get everybody rowing in the same direction, reduce duplication of effort, reduce costs, and get capabilities on orbit fast.

The first year is largely inventing the force. This next year is really integrating that force. This force design will help us integrate with the Department of Defense and the Joint Staff and our other services. ... With a small service, we have an opportunity to [collaborate with foreign countries, commercial companies, and NASA] even more fully.

Q: Where do you want to be one year from now?

A: Our staff structure is already built at the Pentagon. We'll get more people on board. Today we have roughly about 200 on the staff. We're going to grow to about 600 total. It will take us a couple years to do that. ... I would really like to have a top level of force design done and approved by the department.

Our commissioning sources and enlisted accessions will be further refined. We'll stand up professional military educational courses designed for space and continue to evolve those. ... On the 20th of December, I'll be an official member of the Joint Chiefs. Although I'm treated like one today, I go to all the meetings, ... officially one year out is when the law says I become an official member.

Q: What's the status of agreeing on which Army and Navy components to bring into the Space Force, and what are the opportunities and challenges there?

A: I am very pleased with the work that has gone on. We are at about ... 98 percent agreement. You won't see a wholesale taking space out of other organizations. We can't break the Navy, we can't break the Army. But you're going to see those things that make sense, from a mission of the Space Force, to take over, and we're in vast agreement. There's a couple of minor issues that we're discussing, and I would expect we'll hammer those out over [November] or so. Then the Secretary of Defense will make a decision, and off we go. But we're really close.

Our S1 [personnel staff] is working with the Army A1 and the Navy N1 to get volunteers. Every person that comes over to the Space Force is a volunteer. We can't order somebody to come over. Luckily, we have way more volunteers to come over than we have positions for. We can be very selective. We put in place a process ... modeled after the nuclear Navy, and we're going to interview everybody that wants to come in.

I don't think there's any more significant challenges than what we've already worked over the last year with putting all the processes in place for Airmen to transfer over. ... We wanted to do it in a way that didn't hurt people's careers and provided them an opportunity to have a career path that would be professionally rewarding to them. ... The same thing will apply for other services.

For example ... we designed a way to assign those [Air Force Research Laboratory] folks in the Space Force, but leave them where they are, with an agreement that they could also benefit from the collaboration of all the other labs.

Those are the types of issues that we're working, for example, with the Navy: How would you do that to make sure that you don't break the synergies of an organization?

Q: How has your thinking evolved about the right way to address incidents like the Russian "inspector" satellite that the U.S. says threaten National Reconnaissance Office satellites. How do you react to and plan for that as a service?

A: In every talk I give, I say, 'Space is a warfighting domain, just like air, land, and sea.' One of the things that we've found, I've learned, and I know we've learned, is the implications of that statement are significant. The other thing that I always say in every speech is that we want to deter conflict from beginning [in] or ascending into space. The thing that I have learned [is] the value of communicating what an adversary is doing in space. You have seen me in my former [U.S. Space Command boss] hat talk more broadly about what we're seeing, ... what Russia has been doing over the last several months. I think it's important to have a conversation on what [are] safe and professional behaviors in space.

The value of partnerships is really important. The work that we're doing with our partners, largely Five Eyes partners, plus France, Germany, and Japan, is something that the Space Force is really focusing on. ... We still have data-sharing arrangements with many different organizations in many countries, to keep the domain safe for all. We're progressing onto not just data-sharing, but training together, operating together, exercising together, war-gaming together, building capabilities together. When we stood up U.S. Space Command ... I designed an organization called the Combined Force Space Component Command. That was purposely done to make that a combined organization ... with our partners. It's the first time we've ever had that.

A big, ripe area for the Space Force that we're working hard on is overclassification. If you want to deter, you have to be able to help shape an adversary's calculus, and that requires being able to communicate. Right now, we're overly classified. I think we're making some really good work on the strategy on what you would reveal and what you would conceal, which then drives the security architecture that will be beneficial for our efforts to deter.

(Raymond declined to answer how the military responded to Russian satellite activity.)

Q: What are you planning to work on with Capitol Hill in the next year?

A: We've done a lot of design work [on] ... how do you integrate the Reserve forces into the Space Force? Today we operate very closely with the Air National Guard and the Air Force Reserve. We think there is [a way to include Reservists differently], and we've done the work to be able to do that. ... I would expect that that plan will be approved here, probably before [December]. ... But it's really innovative. That will require some legislative proposals to make that happen.

The alternate acquisition system that we've designed, once we get finally coordinated, will require some legislative changes. We'll work very closely with the Hill to be able to do that as well.

Q: Where do you stand on adopting naval ranks like the House proposes?

A: I really appreciate the strong bipartisan support that Congress has given us. We're working very closely to develop the rank structures that we think are important for our force going forward. ... Some of these culture pieces are things that we want to get right. We want to give an opportunity for the folks that are in our service to have a voice. We've just brought in the first 2,100 folks in the service. We've been very deliberate in our efforts to make sure that these things that we do, either the seals or the flags or the naming convention, mean something to the Space Professionals.

We have been in conversations with the staffers, and I've had a couple conversations with members on our ideas on rank.

Q: How have you seen the understanding of military space capabilities change across DOD in recent months?

A: Earlier in my career, you really had to fight to get a seat at the table. It was hard to get people to understand the importance of space. We were just beginning, back when I was a young captain, to integrate space into the fight. Desert Storm was what some call the first space war, the first where we integrated capabilities. That has continued to mature over the years.

You don't have to have that conversation anymore. They understand it. ... On the warfighting side, they understand the value of a U.S. Space Command. They already see the benefits of that command standing up, and same thing holds true on the organize, train, and equip side. I have not felt at all like anything other than, 'Hey, we're glad you're here, and keep moving. This is really important to us.'

Both on the U.S. Space Command side and on the Space Force, I have a stronger voice in requirements. When you elevate from a component of a service to an independent service, there's a big difference between being an Air Force major command commander and being a service chief. That elevation of voice in really critical settings, in budget requirements, and in The Tank, is important.

### Space Force Training Takes Shape

Air Force Magazine, Dec 2020 | Rachel S. Cohen

USSF will take USAF training protocols and fine-tune them to suit the fledgling force.

When the Space Force's top general talks about the future of training, he offers a metaphor for the militarization of the cosmos: airline Capt. Chesley "Sully" Sullenberger versus a fighter pilot.

Sully—the now-retired US Airways pilot who heroically landed his Airbus A-320 in the Hudson River after a bird strike damaged his engines on takeoff—represents the quality of Space Professionals up to now.

The fighter pilot—who must fly at least as well as Sully while also evading and fighting off attack—represents skills space personnel will need in the future.

"We have grown up building Sullys," says Chief of Space Operations Gen. John W. "Jay" Raymond. "We have the world's best space operators. ... We're world-class trained at that. ... But "we now have to shift that to a fighter pilot mentality, have a better understanding of the threats, having a better understanding of how to operate your capabilities through those threats, having a better understanding of potential adversaries. It's a different way of doing business."

As the Pentagon prepares for a second space age, rife with challenges such as signal jamming, anti-satellite missiles, and a growing obstacle course of space debris, simply flying satellites well won't cut it, Raymond says.

Since President Donald J. Trump signed legislation birthing the U.S. Space Force a year ago, the Space Force is building that next generation of service members.

The first seven Space Force enlisted hopefuls shipped out to the inaugural, seven-and-a-half-week Basic Military Training (BMT) at Joint Base San Antonio, Texas, on Oct. 20. Piggybacking on the Air Force's long-standing Basic Military Training process, the first cohort includes five men and two women ranging in age from 18 to 31. Five are White and two are Black. Those who graduate will become the first Space Force members to have been recruited and trained as Space Professionals, rather than transferring in from another branch of service.

The Space Force aims to bring in 312 enlisted recruits in 2021, and 300 to 500 per year after that, as the service looks to maintain or possibly grow its size. It also wants about 250 new officers a year. That's a fraction of the approximately

30,000 new Airmen the Air Force brings in annually.

Chief Master Sgt. Shane Pilgrim, the Space Force's chief of enlisted force development, said the service eventually plans to consolidate its space, intelligence, and cyber recruits into single cohorts at BMT. That would bring the average size of a Space Force basic training group up to 30 or 40 instead—from the initial 10 or fewer.

Indeed, there may not ever be a standard or ideal number, according to Senior Enlisted Adviser Chief Master Sgt. Roger A. Towberman.

"Why do we have to choose? Maybe we do six at a time, and then ... one time next spring, we'll do a class of 30 and we see how that works," Towberman said. "It really is an ecosystem and everything's connected to everything else. I can change something so that basic training works better, and it may make technical training work worse, or it may put the recruiters in a position where they've got to make compromises in order to meet the numbers that they need to keep us on track."

The Space Force will seek recruits and officers in places USAF may not have looked in the past. It aims to strengthen ties to historically Black colleges and universities and hopes to attract more women interested in science and technology.

"We are also targeting demographic areas in the country that are traditionally not fertile grounds for recruits," Pilgrim said.

In contrast to a conventional focus on standardized testing, the Space Force intends to leverage its more intimate size by focusing instead on interviews and a personal assessment process. Those chosen to join the service will receive a tablet with courseware and helpful videos about two months before BMT, and will be paired with mentors to help them prepare.

"Because of our size and scale, we can do things on a more personal level," Pilgrim said.

Once at basic training, recruits will join Air Force BMT recruits, separated by gender, for most training, breaking into Space Force flights only for space-specific training, similar to the way new special warfare Airmen are trained.

For now, just three Space Force training instructors (TI) are assigned to Lackland Air Force Base, Texas, and they will lead Space Force BMT flights. "So that's how we're building in these space experiences—having the flight led by a space TI, having specific courseware to space—but they are still going through Air Force BMT for all intents and purposes."

The Air Force has gradually built more space knowledge into its education regime for all Airmen, teaching the importance of satellites and radars to the rest of the combat force. More specialized Space Force training will go even deeper.

Towberman charged personnel experts to create a unique recruit experience focused on teamwork, warfighter ethos, professionalism, and comprehensive fitness. The service wants its training to feel different from the other armed forces, while still infusing necessary military discipline and the unique space operations culture.

In addition to standard training on personal conduct, physical fitness, and military fundamentals, space recruits will learn "law, policy, orbital mechanics, electromagnetic waves and signals, space environment, space systems, command authorities, and joint space warfighting," according to a Space Force release.

"We looked at adding a course on our space organization, ... [and] some stuff about our doctrine and our defense space strategy" to explain why the Space Force was created, Pilgrim said. The planning team wanted to create

opportunities to discuss space dominance and orbital threats in an unclassified forum, and to cover the past several decades of military space history.

Recruits should likewise learn about the Space Force's workforce, which employs a greater percentage of officers and civilians than the Air Force, Pilgrim said.

"We also assessed whether some of the courses there, such as the combat arms training, were relevant in the current format to what we're doing in our mission in the Space Force, and the expeditionary training as well, because our mission is different," he added.

Space operations are less physical than other military specialties and require fewer deployments, Pilgrim said. "Our training should relate to what we do for our national defense mission."

### Digital Natives

As the first branch of the armed forces launched in the computer age, the Space Force pledges to break away from manual processes, starting with the way it educates and trains its workforce.

"We are going to incorporate some video-enhanced courseware, some stuff where we can actually leverage technology to bring the experience of current Space Professionals into BMT," Pilgrim said. Instead of PowerPoint slides, he's hoping to bring in guest speakers via livestream or prerecording.

Pilgrim believes a tech-savvy approach is not only valid now, in the midst of the COVID-19 pandemic, but will endure beyond.

"Our tablet initiative allows us to stay connected without being physically connected as much to the recruits, prior to them coming to basic," he said. "Once they get into that pipeline, they have established controls that are tried-and-true at BMT that will be implemented and will keep them safe."

Over time, Space Force basic training could grow large enough to warrant its own squadrons and a fuller space curriculum. Everyone should have a basic understanding of space operations, whether they're a satellite operator or an intelligence analyst, Pilgrim said.

"Gradually, we can build and morph into that. We need to run where we can and crawl where we need to," he said. "As we get through a couple iterations of this, I think we will learn rapidly, and it'll be a constant double loop where we go back and reassess."

Space Force BMT graduates' next stops will be one of three bases: Space operators will go to Vandenberg Air Force Base, Calif.; cyber specialists will go to Keesler Air Force Base, Miss., and intelligence specialists will go to Goodfellow Air Force Base, Texas. Officer Training School (OTS) graduates appear to be following the same path.

For new officers, the Space Force is leveraging the Air Force's OTS; its first two graduates, both women, completed the seven-and-a-half week course in October. A service spokeswoman declined to provide more details, but their next stops will match those of enlisted members.

### Building STARCOM

The Space Training and Readiness (STAR) Delta is responsible for Space Force technical and advanced training. The command is provisional and will evolve over the next year to become the future Space Training and Readiness Command (STARCOM). Currently located at Peterson Air Force Base, Colo., STAR Delta encompasses the 3rd Space Experimentation Squadron, 17th Test Squadron, 25th Space Range Squadron, 527th Space Aggressor



Squadron, 705th Combat Training Squadron Operating Location Alpha, and Air Force Warfare Center Det. 1 at Schriever Air Force Base, Colo.; the 319th Combat Training Squadron, Air Force Operational Test and Evaluation Center Det. 4, and National Security Space Institute at Peterson; the 328th Weapons Squadron at Nellis Air Force Base, Nev.; and the 533rd Training Squadron at Vandenberg.

Once established as STARCOM, it will oversee training and readiness for each specific skill set within the Space Force, including missile warning at Buckley Air Force Base, Colo.; command and control at Vandenberg; and navigational warfare and satellite communications at Schriever.

The Air Force started beefing up its space education even before STAR Delta came to be, and will now continue to evolve as the Space Force raises awareness of the threats facing assets on orbit and on the ground, and offers a more holistic view of how those tools fit into the larger warfighting picture. For example, the 533rd Training Squadron is adding rigor to its courses, along with more classified content for both undergraduate officer and enlisted training, said STAR Delta Commander Col. Peter J. Flores.

“Those courses are much more complex now than they were in years past,” he said. “They are broader in their perspective, in terms of what are the threats? We’re asking people to think about how to prevail in that contested, degraded, operationally limited environment.”

Incorporating content marked “Top-Secret/Sensitive Compartmented Information” is important in a line of work that is shrouded in secrecy. Adding that content to the curriculum gives students a more complete understanding of what they might be up against as countries compete for dominance in orbit.

“Some of the concepts can seem pretty abstract,” said Maj. Gen. DeAnna M. Burt, then the director of operations and communications at Space Force headquarters, in April. “But when students see it applied to a real-world scenario, suddenly it sticks.”

Last year, Burt noted that instead of simply learning what the different orbital layers around the Earth are called and how high they sit, undergrads will also learn why the military uses each layer, how space operations differ from air ops, how to determine when systems are being jammed, and more.

“If I have to move satellites and keep them in mission, if I have to move and stop doing mission in order to save that vehicle, what does that look like?” she said. “Why would I do that? What are all those agencies doing to each other, and how are they talking and integrating in a fight?”

Introducing those concepts in school means students will have less to learn when they get to their duty stations—and be better primed to learn more quickly on the job. To accommodate the additional coursework, undergraduate space training has also expanded from 76 days to either 87 days for enlisted students or 110 days for officers.

There’s more work to do to find the sweet spot for how many people should move through space operations training each year. Pandemic precautions have limited class sizes, “strangling” the education pipeline, Flores said. Bringing in new members from the Army, Navy, and Marine Corps, as well as Air Force personnel who transfer into space operations, will affect that in the future.

Courseware and staffing may change over time as class sizes fluctuate and stabilize.

“Does everybody need to show up on Day One for undergraduate space training for a multi-month operation?” Flores asked, posing one of many questions he’s trying to answer now. “Or if you’re coming from some other discipline that preps you for that, can we turn some of that into ... online courses that then limits the amount of time you have to spend on the ground?”

## Technical Schools

For technical training, the Space Force now offers 15-day courses in space warfighting disciplines such as orbital warfare, electronic warfare, and space battle management. About 120 students have graduated from those classes so far, Chief of Space Operations Gen. John W. “Jay” Raymond said in September.

Building that curriculum to meet the needs of Space Force doctrine is the biggest challenge for the 319th Combat Training Squadron, Flores said. Indeed, officials are mulling whether the Space Force could use the same instructors for both initial and technical training.

“Do we have to do basic training separately from anything?” Towberman mused. “Could we do basic training as part of tech school and it’s just called training and you just show up and you do it all together in one location?”

Burt has compared weapon system training to how the Air Force matches Airmen with planes: the service first teaches them to fly, then splits them to learn about different categories of aircraft, then assigns them a particular airframe. Space personnel will learn their systems “down to every knob and bolt and screw” like Airmen would the F-35 Joint Strike Fighter, she said.

## Building on History

Wherever possible, the Space Force is leveraging existing Air Force institutions to deliver its education and training needs. As it is with Air Force BMT and OTS, the Space Force is relying on Air University, its Senior Noncommissioned Officer Academy (SNCO), and the U.S. Air Force Academy (USAFA) to help educate its future leaders.

Last April, USAFA graduated 86 cadets who commissioned into the Space Force as second lieutenants. They were among the very first officers to enter the service.

Air University is adding space warfighting to its core curriculum at Airman Leadership School, doubling its Schriever Space Scholars program to include about two dozen participants, and launching the West Space Seminar through the Air War College. Soldiers, Sailors, Marines, and foreign military personnel are all playing an increasingly large role in professional space education, as well.

“All Space Professional students will be enrolled in the ‘Space Grey Rhinos’ space concentration, where they will study space as an instrument of power and policy,” Air University announced in an August release. “Students will participate in the Air University Advanced Research capstone project, researching space topics and presenting ideas to the U.S. Space Force in a final outbrief.”

Air University graduated its first Space Force members from the SNCO Academy in September. Reserve Officer Training Corps participants will also get a heavier dose of orbital issues in their collegiate program.

Over time, adding “space flavor” may transcend orbital studies to include cultural elements central to USSF in future professional military education (PME), Towberman says.

“If we decide that we want to work more on interpersonal communication skills, we might change interpersonal communication in PME,” he said. “That wouldn’t be a space thing, right? It would be a Space Force thing.”

Diversity and inclusion training will be part of Space Force BMT, for example, and members will practice broaching sensitive topics with a computer avatar so they feel more comfortable discussing those issues in real life.

Another bedrock competency for the Space Force will be digital literacy. Space Force members will take 6,000 spots in the Department of the Air Force’s Digital University, an online course catalog of IT and cybersecurity training and

computer science language coursework, Raymond said in September. The objective is to apply those skills across the enterprise. For Space Flag, the Department of the Air Force's premier large-scale space training exercise, STAR Delta wants to improve its modeling and simulation capabilities so more people can participate more often.

Over two weeks last August, STAR Delta held its first major exercise—the ninth edition of Space Flag—at the Boeing Virtual Warfare Center in Colorado Springs, Colo. The event split 34 participants into red, white, and blue cells. Blue players practiced moving space assets on orbit to respond to threats; white players provided command and control; and the red players worked to disrupt the blue team's operations.

It's often hard to practice orbital offense and defense without actually being there. Flores said building more advanced simulators can help show how things might play out in an electronic or physical war. Those artificial environments need to be as realistic as possible and include the National Reconnaissance Office, other countries, private contractors, and anyone else the Space Force would need to work with in a fight.

"When crew members come in—whether they're cyber, space, intel—they can come in and it will feel, it will taste, and it will smell like the environment they're expected to operate in, with all the inputs,"

Flores said. "As they make decisions through that fight, the system can react to that and can give them feedback on how things went."

Space Flag is organized by STAR Delta Operating Location Alpha (OL-A), which transferred to the Space Force this year after being part of Air Combat Command for the prior seven years. The organization provides some of the glue connecting air and space assets in combat.

"[We're able to] project electronic intelligence data into HH-60 cockpits to help the aircrews locate downed Airmen anywhere on the globe," OL-A director Kevin Rhoades said in a press release earlier this year. "We generally do this over [continental U.S.] ranges, but recently supported an expeditionary rescue squadron downrange in the [United States Central Command area of responsibility]."

The service is also looking to Red Flag, on which Space Flag is based, and other ventures at Nellis for best practices in training.

"I think everyone understands that warfighting is warfighting," Burt said. "The kinematics and the domain may be different, but how we fight, and the doctrine, and the way we get offense and defense ... are no different from one domain to the other."

Schriever Wargame, an annual futures event that brings together hundreds of military and civilian participants from across the globe, may eventually fall under STARCOM, as well. The game is now under Pentagon oversight.

The important thing to remember, Towberman says, is that the Space Force is still new, still ironing out the many details necessary to establish the training and culture it needs to be successful in the future.

The service is embarking on what Towberman calls "small-batch solutions" as a means to float trial balloons on everything from workout uniforms to training in focus groups.

"We don't have to come up with a final answer that's going to apply to the full force for what we think is the next 10 years," he said. "We can say, 'Hey, let's do something that applies to a small group.' And try it out and see what it looks like. Then if we like it, we'll scale it."

Thomas Plumb

NASA Liaison - Peterson AFB, CO

USSF USSPACECOM NORAD/USNORTHCOM

O 719.554.4900 C (b) (6) Thomas.j.plumb@nasa.gov

## RE: Talking Points on UAP Report

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From: Cruz, Randy C. (HQ-AA000)[Affiliate] </O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=FE606AD0FF7A47E09D3C9543390219 F5-CRUZ, RANDY>  
To: Fox, Karen C. (HQ-1300) <karen.c.fox@nasa.gov>, Meidinger, Jolene A. (HQ-TH000) <jolene.meidinger@nasa.gov>  
Sent: June 25, 2021 11:56:38 AM EDT  
Received: June 25, 2021 11:56:00 AM EDT

Thanks Karen!

V/r,

Randy

Randy Cruz

Senior Advisor to the Administrator

NASA Headquarters

Office: (202) 358-1445

Cell: (b) (6)

From: Fox, Karen C. (HQ-1300) <karen.c.fox@nasa.gov>  
Sent: Friday, June 25, 2021 11:29 AM  
To: Meidinger, Jolene A. (HQ-TH000) <jolene.meidinger@nasa.gov>  
Cc: Cruz, Randy C. (HQ-AA000)[Affiliate] <randy.c.cruz@nasa.gov>  
Subject: Re: Talking Points on UAP Report

Good morning, all –

Randy – attached please find the current draft of our talking points. I shared this version with Jackie McGuinness yesterday, so she may well have provided these to the Administrator as well. These talking points do NOT yet address our involvement with the report, as we do not know for sure if we are cited in the report. Jolene has let me know that they are anticipating the report at 5 pm, so we can provide that talking point as quickly as possible after that.

In the meantime, I offer these two high level themes from SMD:

1) There is a possibility and indeed a probability of life beyond Earth. NASA efforts include search for biosignatures (signs of biology) and technosignatures (signs of technology). Science is driven by the desire to better understand the unknown – but science is ultimately a matter of evidence, and we have not yet detected extraterrestrial life. We do, however, continue to look.

2) We want to make sure (b) (5)

[REDACTED]

[REDACTED]

[REDACTED]

Thanks,

Karen

--

Karen C. Fox

Senior Science Communications Officer

Office of Communications

From: "Meidinger, Jolene A. (HQ-TH000)" <jolene.meidinger@nasa.gov>

Date: Friday, June 25, 2021 at 11:19 AM

To: "Fox, Karen C. (HQ-1300)" <karen.c.fox@nasa.gov>

Cc: "Cruz, Randy C. (HQ-AA000)[Affiliate]" <randy.c.cruz@nasa.gov>

Subject: Talking Points on UAP Report

Hi Karen,

In anticipation of the UAP Report release, the Administrator is requesting more information. I mentioned to Randy that you had prepared a package of talking points. Can you share a copy with him?

Thank you,

Jolene

Jolene A. Meidinger

Interagency Liaison

Office of International and Interagency Relations

NASA Headquarters (5Y41)

Office: 202-358-3880

Cell: (b) (6)

jolene.meidinger@nasa.gov

SIPR: (b) (6), (b) (7)(C)

JWICS (b) (6), (b) (7)(C)

## Re: Talking Points on UAP Report

---

From: Fox, Karen C. (HQ-1300) <karen.c.fox@nasa.gov>  
To: Meidinger, Jolene A. (HQ-TH000) <jolene.meidinger@nasa.gov>  
Cc: Cruz, Randy C. (HQ-AA000)[Affiliate] <randy.c.cruz@nasa.gov>  
Sent: June 25, 2021 11:28:57 AM EDT  
Received: June 25, 2021 11:29:14 AM EDT  
Attachments: Talking Points Search for Life\_UAPs\_v 2.docx

Good morning, all –

Randy – attached please find the current draft of our talking points. I shared this version with Jackie McGuinness yesterday, so she may well have provided these to the Administrator as well. These talking points do NOT yet address our involvement with the report, as we do not know for sure if we are cited in the report. Jolene has let me know that they are anticipating the report at 5 pm, so we can provide that talking point as quickly as possible after that.

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1) There is a possibility and indeed a probability of life beyond Earth. NASA efforts include search for biosignatures (signs of biology) and technosignatures (signs of technology). Science is driven by the desire to better understand the unknown – but science is ultimately a matter of evidence, and we have not yet detected extraterrestrial life. We do, however, continue to look.

2) We want to make sure (b) (5)

The text "(b) (5)" is followed by three lines of redacted content, represented by solid black bars of varying lengths.

Thanks,

Karen

--

Karen C. Fox

Senior Science Communications Officer

Office of Communications

From: "Meidinger, Jolene A. (HQ-TH000)" <jolene.meidinger@nasa.gov>  
Date: Friday, June 25, 2021 at 11:19 AM  
To: "Fox, Karen C. (HQ-1300)" <karen.c.fox@nasa.gov>  
Cc: "Cruz, Randy C. (HQ-AA000)[Affiliate]" <randy.c.cruz@nasa.gov>  
Subject: Talking Points on UAP Report

Hi Karen,

In anticipation of the UAP Report release, the Administrator is requesting more information. I mentioned to Randy that you had prepared a package of talking points. Can you share a copy with him?

Thank you,

Jolene

Jolene A. Meidinger

Interagency Liaison

Office of International and Interagency Relations

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Office: 202-358-3880

Cell: (b) (6)

jolene.meidinger@nasa.gov

SIPR: (b) (6), (b) (7)(C)

JWICS (b) (6), (b) (7)(C)



# Attachment

## 1. Talking Points Search for Life\_UAPs\_v 2.docx

Type: application/vnd.openxmlformats-officedocument.wordprocessingml.document  
Size: 48 KB (49,969 bytes)

**Attachment #1**

**Talking Points Search for Life\_UAPs\_v 2.docx**

**Original view**

10 pages (displayed on pages 5 to 14)

**SUBJECT: NASA's Interest in UAP/UFOs**

**BACKGROUND**

Public and media interest in the topic of UAP/UFOs has seen an uptick in recent weeks following reports related to the Department of Defense's release of three unclassified U.S. Navy videos as well as an upcoming Congressional report led by Naval Intelligence on UAPs. The unclassified report is expected to be shared with Congress by Friday, June 25.

**STATEMENT**

One of NASA's key goals is the search for life in the universe. To date, NASA has yet to find any credible evidence of extraterrestrial life; however, NASA is exploring the solar system and beyond to help us answer fundamental questions, including whether we are alone in the universe. We lead the U.S. government's search for extraterrestrial life, be it close to home, on the planets or moons of our Solar System, or deeper into space. NASA does not actively search for UAPs and the lack of robust data is the central problem for scientific study of UAPs and to determine whether they are natural or human-made phenomena – there is no current data to support that UAPs or UFOs are evidence of alien technologies.

**KEY POINTS**

- Most UAP sightings result in very limited data, usually video recordings from a single angle that can only be cross-validated with eyewitness testimony.
- The language of scientists is data. Without access to an extensive set of data, it is nearly impossible to verify or explain any observation. The lack of robust data, including the lack of access to some existing data, is the central problem for scientific study of UAPs.
- Exploring the unknown in space is at the heart of who we are. The nature of science is to better understand the unknown. Through our Earth-observing satellites, NASA collects extensive data about Earth's atmosphere, often in collaboration with the other space agencies of the world. While these data are not specifically collected to identify UAPs, they are publicly available and could be used by anyone to search our atmosphere.
- One of NASA's key goals is the search for life in the universe. Although we have yet to find signs of extraterrestrial life, NASA is exploring the solar system and beyond to help us answer fundamental questions, including whether we are alone in the universe.
- From studying water on Mars, probing promising "oceans worlds," such as Titan and Europa, to looking for biosignatures in the atmospheres of planets outside our solar system, NASA's science missions are working together with a goal to

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find unmistakable signs of life beyond Earth. We look for life in any form, not just intelligent life.

- We lead the U.S. government's search for extraterrestrial life, be it close to home, on the planets or moons of our Solar System, or deeper into space. To date, NASA has yet to find any credible evidence of extraterrestrial life.
- NASA efforts include search for biosignatures (signs of biology) and technosignatures (signs of technology). Given that a planet might support life for billions of years before intelligent life evolves to create technology that can be spotted from other solar systems – our own planet has only been creating detectable technosignatures for a little over a century, for example – we have a much better chance of finding life by looking at a broad spectrum of biosignatures.

### QUESTIONS AND ANSWERS

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## ADDITIONAL INFORMATION

### Exoplanet background

- An exoplanet is a planet outside our solar system. Exoplanets are too far away to visit but can be studied with space telescopes.
- So far, we've confirmed more than 4,300 exoplanets in our galaxy, which probably holds trillions. Thousands more are likely to be confirmed in the years ahead.
- About a fifth of the planets confirmed so far are in Earth's size range, some in the "habitable zone," the distance from the star that could allow liquid water on the planet's surface.
- We also know that the building blocks of life are present throughout the solar system and the cosmos, including water.
- Despite these encouraging signs, we have yet to find evidence of life anywhere but planet Earth, in our solar system or beyond. We also haven't yet found a planet like Earth orbiting a star like the Sun, with a "year" comparable to our own.
- We're now on the cusp of a potential revolution in the study of exoplanets: detecting their atmospheres and searching for chemical signatures that could indicate the presence of both microbial and more advanced or even intelligent life.
- In the near-term, the James Webb Space Telescope, and the next generation of ground-based telescopes, will be able to spread the light from a small sample of Earth-sized exoplanets into a spectrum, potentially revealing the presence of atmospheric gases.
- We'll probably begin with large, gaseous worlds unlikely to be habitable, but that will pave the way for future instruments that could look in on a small, rocky world – perhaps even one similar to our own.
- We might see signs of oxygen, methane and carbon dioxide in such a planet's atmosphere – in other words, an atmosphere that reminds us of home.

### Past Missions

#### ***Viking Project: 1 & 2***

- *NASA's Viking Project was the first mission to reach the martian surface and the first to search for evidence of life on Mars. Viking was NASA's first attempt to*

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*search for life on another planet, and was thereby the **first** mission dedicated to astrobiology. The project found a place in history when it became the first U.S. mission to land a spacecraft safely on the surface of Mars and return images of the surface.*

- Two identical spacecraft, each consisting of a lander and an orbiter, were built. Each orbiter-lander pair flew together and entered Mars orbit; the landers then separated and descended to the planet's surface.
- The landers conducted three biology experiments designed to look for possible signs of life.
  - These experiments:
    - Discovered unexpected and enigmatic chemical activity in the Martian soil, but provided no clear evidence for the presence of living microorganisms in soil near the landing sites.
    - Taught scientists a great deal about how little we knew about life on Earth and how to detect it.
    - Continue to shape the development of life detection strategies and equipment at NASA and other international agencies.
- NASA's Viking Project took place before NASA's Astrobiology Program was founded, but many scientists from its precursor, NASA's Exobiology Program, participated in the mission.

### **Kepler and K2 Mission**

- *Kepler was a space observatory designed to survey a specific portion of our region of the Milky Way galaxy. An important part of Kepler's work was the identification of Earth-size planets that orbit in the habitable zone of their host star. Such observations are directly relevant to the study of life's potential in the Universe, and the search for life beyond Earth. Kepler discovered more than 2,600 exoplanets!*
- *Kepler's observations suggest that there may be nearly 2 billion potentially habitable planets in our galaxy around Sun-like stars. Not all of them may be habitable, or inhabited, but the sheer number of them makes it likely that there could be life on worlds.*
  - Amongst the Kepler discoveries is Kepler-186f, the first validated Earth-size planet in the habitable zone of a star other than the Sun. The vast amount of data collected by Kepler will continued to be analyzed and used to help to guide the future direction of astrobiology science.
  - Astrobiologists use this data to:

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- Develop new techniques for studying exoplanets in greater and greater detail.
- Help inform future missions to characterize exoplanets and exomoons, and possibly identify signs of life by analyzing attributes of these distant worlds, such as atmospheric composition.

### Current Missions

#### **MAVEN**

- *Data from MAVEN provides insight into the history of Mars' atmosphere, climate, liquid water, and planetary habitability. An important aspect of the MAVEN mission is studying how early Mars lost much of its atmosphere.*
- *This atmospheric loss may have been partially responsible for Mars' transition from a planet capable of supporting liquid surface water to the dry, desert world we know today.*
  - Astrobiologists are working with data from the MAVEN mission in order to understand how atmospheric loss led to the loss of liquid water on the surface of the planet.
  - This work is important in constraining how and when Mars lost its water and identifying periods in Mars' history when habitable environments were most likely to exist at the planet's surface.

#### **Mars Odyssey**

- *Mars Odyssey provides detailed maps of Mars that are used to determine the evolution of the Mars environment and its potential for life.*
  - Astrobiologists were directly involved in the development of the Thermal Emission Imaging System (THEMIS) instrument onboard Mars Odyssey. Visible and infrared observations by THEMIS are used to identify the distribution of minerals on Mars, allowing astrobiologists to study how the mineralogy of the planet relates to the landforms.
  - Astrobiologists also use data from Mars Odyssey to study the geochemical makeup of Mars. This information is useful for:
    - Studying the evolution of Mars' environment
    - Identifying locations that may have been habitable for life in the past
    - Finding astrobiology-relevant landing sites for future Mars missions.

#### **Mars Reconnaissance Orbiter**

- *While other Mars missions have shown that water flowed across the surface in Mars' history, it remains a mystery whether water was ever around long enough to provide a habitat for life.*



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- Data from MRO:
  - Is essential to astrobiologists studying the potential for habitable environments on past and present Mars.
  - Provides invaluable data used in selecting landing sites for future Mars missions.
  - Is important in building climate models for Mars, and for use in comparative planetology studies performed by astrobiologists who study the potential habitability of exoplanets that orbit distant stars.

### ***Mars Exploration Rovers (MER) Spirit & Opportunity***

- *NASA's twin Mars Exploration Rovers, Spirit and Opportunity, were designed to last for 90 martian days, however both robotic explorers far outlasted their original missions and spent years collecting data at the surface of Mars. Spirit's sent data back for over six years, while Opportunity returned data for an incredible fifteen years.*
  - MER mission was to search for and characterize a wide range of rocks and soils that hold clues to past water activity on Mars. Studying the history of water on Mars is essential in determining whether or not the planet once supported environments that could have been habitable for life as we know it.
  - MER data has been used to identify environments that may have supported conditions suitable for life in Mars' past and will guide the future of Mars exploration for decades to come.

### ***Mars Science Laboratory (Curiosity Rover)***

- *MSL's Curiosity rover is studying whether or not Mars ever had environments capable of supporting microbial life. Data from MSL will be used to develop future missions to collect samples of the martian surface in the hopes of identifying signs of past or present life.*
  - The Curiosity rover is advancing the field of astrobiology by investigating Mars' habitability, studying its climate and geology.
  - Curiosity has provided evidence that liquid water once flowed at the surface of Mars in Gale Crater.
  - The rover also discovered a site dubbed 'Yellowknife bay,' which once supported an environment that was habitable for microbial life.

### ***Mars 2020 Mission to Mars: Perseverance Rover***

- *Mars 2020 is the next step in NASA's robotic exploration of Mars, a primary target of astrobiology research in the Solar System, and will build on the accomplishments of MSL. Many researchers supported by elements of the Astrobiology Program are involved in the design and development of the Mars 2020 mission and its scientific goals.*

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- The rover Perseverance is providing important data relevant to astrobiology research, along with a vast amount of geological information about the landing site and the planet at large that will help put the astrobiological data into context.
- One of the missions primary goal is to explore the geology of Jezero Crater in order to assess past habitability.
  - Jezero Crater is a geologically rich terrain, with many features and minerals formed by water that may date back as far as 3.6 billion years ago.
  - Studying the geology and mineralogy of this site will provide a window into the planet's climate history, and allows astrobiologists to determine if sites like these were persistent habitable environments that could have supported life in the past.
- Perseverance will not be looking for organisms living on Mars today. However, the rover is collecting data that could be used to identify biosignatures of ancient microbial life.
  - Previous missions, from Pathfinder to Curiosity, have helped astrobiologists determine that habitable environments were present on Mars in the planet's ancient past.
  - While these environments may have been habitable, we do not know if they were inhabited (i.e. if life was ever present).
- Perseverance will be collecting a suite of samples to be returned to Earth via a Mars Sample Return mission. The return samples from another planet will allow our researchers to interrogate them with all of the sophistication and thoroughness of Earth-based instrumentation, and will provide an immense opportunity to dramatically advance our scientific understanding of Mars.
- Many of the goals for the Mars 2020 mission are directly relevant to Astrobiology. These include:
  - Determine whether life ever arose on Mars
  - Seeking signs of past life (biosignatures) in the geological record
  - Characterize the climate of Mars
  - Characterize the geology of Mars

### ***TESS Mission***

- NASA's Transiting Exoplanet Survey Satellite is an all-sky survey mission that will discover thousands of exoplanets around nearby bright stars.
- TESS launched April 18, 2018 aboard a SpaceX Falcon 9 rocket.
- To date, TESS has discovered more than 120 confirmed exoplanets and more than 2,600 planet candidates

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- TESS has identified, and will continue to find, exoplanets targets that Webb will study in further detail

### Upcoming Missions

#### ***Dragonfly Mission to Titan***

- *This revolutionary mission concept includes the capability to explore diverse locations to look for prebiotic chemical processes common on both Titan and Earth. Titan is an analog to the very early Earth, and can provide clues to how prebiotic chemistry under these conditions may have progressed.*
- *The NASA Astrobiology Program supports scientists involved at all stages of the mission. Projects supported by the program have helped to define Titan as prime target for astrobiology research in the Solar System.*
  - Analog research on Earth and comparative planetology studies in order to better understand the environment of Titan and to identify sites of astrobiological interest.
  - Development of instrumentation that can be used to perform scientific investigations at Titan.
  - Research in areas of prebiotic chemistry that inform our knowledge of organic chemistry on the moon.

#### ***Europa Clipper Mission to Europa***

- *The Europa Clipper mission will place a spacecraft in orbit around Jupiter in order to perform a detailed investigation of the giant planet's moon Europa.*
  - Europa shows strong evidence for an ocean of liquid water beneath its icy crust and some astrobiologists believe that it could host conditions favorable for life.
  - Astrobiologists are involved in the definition of science goals for Europa Clipper and the design of scientific instruments for the mission.

#### ***James Webb Space Telescope (Webb)***

- *Webb will be the premier space-based observatory of the next decade. Webb is a large infrared telescope with a 6.5-meter primary mirror. Data from Webb will be used to study the formation and evolution of habitable worlds, and will be invaluable in understanding processes that have shaped habitability in our own Solar System.*
- *Webb will be capable of making detailed observations that might allow astrobiologists to identify some potential signatures of life on Earth-like planets beyond our Solar System.*
  - Webb observations will be used to study:
    - Every phase in the history of the Universe, including the evolution of the Solar System
    - The formation of distant solar systems capable of supporting life on Earth-like exoplanets.

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- Observe the formation of stars from the first stages to the formation of planetary systems
- Measure the physical and chemical properties of planetary systems and investigate the potential for life in those systems

### **PAOs:**

- HQ: Alana Johnson, [alana.r.johnson@nasa.gov](mailto:alana.r.johnson@nasa.gov) / 202-358-1501
- HQ: Karen Fox, [karen.fox@nasa.gov](mailto:karen.fox@nasa.gov)/301-286-6284
- HQ: Liz Landau, [elizabeth.r.landau@nasa.gov](mailto:elizabeth.r.landau@nasa.gov)

### **Concurrences:**

- HQ: Mary Voytek, Senior Scientist for NASA Astrobiology
- HQ: Lori Glaze, Planetary Science Division director
- HQ: Michael New, Deputy AA for Research, Science Mission Directorate
- HQ: Eric Smith, JWST Program Scientist

## RE: UAP brief in your JWICS acct

---

From: Lal, Bhavya (HQ-IA000) <bhavya.lal@nasa.gov>  
To: Cruz, Randy C. (HQ-AA000)[Affiliate] <randy.c.cruz@nasa.gov>  
Sent: May 20, 2021 10:43:48 AM EDT  
Received: May 20, 2021 10:43:49 AM EDT

Thanks Randy! I will go down at lunchtime.

From: Cruz, Randy C. (HQ-AA000)[Affiliate] <randy.c.cruz@nasa.gov>  
Sent: Thursday, May 20, 2021 10:38 AM  
To: Lal, Bhavya (HQ-IA000) <bhavya.lal@nasa.gov>  
Subject: UAP brief in your JWICS acct

Bhavya,

The brief should be in your email now. Let me know if you have any questions.

V/r,

Randy

Randy Cruz

Senior Advisor to the Administrator

NASA Headquarters

Office: (202) 358-1445

Cell: (b) (6)

## Re: UAP brief

---

From: Cruz, Randy C. (HQ-AA000)[Affiliate] </O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=FE606AD0FF7A47E09D3C9543390219 F5-CRUZ, RANDY>  
To: Gold, Michael N. (HQ-AA000) <michael.n.gold@nasa.gov>, Feldstein, Karen C. (HQ-TA000) <karen.c.feldstein@nasa.gov>, Meidinger, Jolene A. (HQ-TH000) <jolene.meidinger@nasa.gov>, Kieffer, Margaret (HQ-TH000) <margaret.kieffer@nasa.gov>, STOVALL, SHERICE L. (HQ-TA000) <sherice.l.stovall@nasa.gov>  
Sent: October 1, 2020 8:32:20 AM EDT  
Received: October 1, 2020 8:32:22 AM EDT

If we have the materials, would like to share with Jim before he leaves for OK Today. Not sure an unclassified version is scratching his itch. Let's see what's in the realmnifboissinle for today please. Thanks!

Vr,

Randy

Randy Cruz

Senior Advisor to the Administrator

NASA Headquarters

randy.c.cruz@nasa.gov

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On: 01 October 2020 08:29, "Gold, Michael N. (HQ-AA000)" <michael.n.gold@nasa.gov> wrote:

Hey Randy, I'm sorry that we couldn't get schedules to work with the head of the UAP Task Force, Jay Stratton, for today. He is wrapped up in meetings at the Pentagon. Margaret/Jolene, do we have the slide deck that Jay used when we got the brief previously? Jay says there is a video version of the brief that is available on SIPRNET or JWICS. Sherice has Jay's e-mail (he is not available by phone today) and can reach out to him.

Thanks,

- Mike

From: Cruz, Randy C. (HQ-AA000)[Affiliate] <randy.c.cruz@nasa.gov>  
Sent: Thursday, October 1, 2020 8:07 AM  
To: Gold, Michael N. (HQ-AA000) <michael.n.gold@nasa.gov>; Feldstein, Karen C. (HQ-TA000) <karen.c.feldstein@nasa.gov>; Meidinger, Jolene A. (HQ-TH000) <jolene.meidinger@nasa.gov>  
Subject: UAP brief

Mike,

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Sipr: (b) (7)(C), (b) (6)

Jwics: (b) (7)(C), (b) (6)

Randy

Randy Cruz

Senior Advisor to the Administrator

NASA Headquarters

randy.c.cruz@nasa.gov

Office: (202) 358-1445

Cell: (b) (6)

## RE: UAP brief

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To: Cruz, Randy C. (HQ-AA000)[Affiliate] <randy.c.cruz@nasa.gov>, Feldstein, Karen C. (HQ-TA000) <karen.c.feldstein@nasa.gov>, Meidinger, Jolene A. (HQ-TH000) <jolene.meidinger@nasa.gov>, Kieffer, Margaret (HQ-TH000) <margaret.kieffer@nasa.gov>, STOVALL, SHERICE L. (HQ-TA000) <sherice.l.stovall@nasa.gov>  
Sent: October 1, 2020 8:35:25 AM EDT  
Received: October 1, 2020 8:35:25 AM EDT

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Cc: Flynn, David T. (HQ-TH000) <david.flynn@nasa.gov>  
Sent: October 1, 2020 8:43:40 AM EDT  
Received: October 1, 2020 8:43:41 AM EDT

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Cc: Flynn, David T. (HQ-TH000) <david.flynn@nasa.gov>  
Sent: October 1, 2020 8:45:45 AM EDT  
Received: October 1, 2020 8:45:46 AM EDT

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Sent: October 1, 2020 8:52:56 AM EDT  
Received: October 1, 2020 8:52:56 AM EDT

Randy: What is the departure time today?

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To: Kieffer, Margaret (HQ-TH000) <margaret.kieffer@nasa.gov>  
Sent: October 1, 2020 8:55:26 AM EDT  
Received: October 1, 2020 8:55:27 AM EDT

Margaret,

He departs around 2:30.

If emailed to me, I can pull it up on the 9th floor acid.

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Randy: What is the departure time today?

From: Gold, Michael N. (HQ-AA000) <michael.n.gold@nasa.gov>  
Sent: Thursday, October 1, 2020 8:49 AM  
To: Kieffer, Margaret (HQ-TH000) <margaret.kieffer@nasa.gov>; Cruz, Randy C. (HQ-AA000)[Affiliate] <randy.c.cruz@nasa.gov>; Feldstein, Karen C. (HQ-TA000) <karen.c.feldstein@nasa.gov>; Meidinger, Jolene A. (HQ-TH000) <jolene.meidinger@nasa.gov>; STOVALL, SHERICE L. (HQ-TA000) <sherice.l.stovall@nasa.gov>  
Cc: Flynn, David T. (HQ-TH000) <david.flynn@nasa.gov>  
Subject: RE: UAP brief

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Vr,

Randy

Randy Cruz

Senior Advisor to the Administrator

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Sipr: (b) (7)(C), (b) (6)

Jwics: (b) (7)(C), (b) (6)

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Sent: October 1, 2020 9:02:17 AM EDT  
Received: October 1, 2020 9:02:17 AM EDT

It may be on SIPR. Am hoping OPS also has and can (easily) forward w/o us being in the middle, but need Jolene to confirm if they have the set.

M

From: Cruz, Randy C. (HQ-AA000)[Affiliate] <randy.c.cruz@nasa.gov>  
Sent: Thursday, October 1, 2020 8:55 AM  
To: Kieffer, Margaret (HQ-TH000) <margaret.kieffer@nasa.gov>  
Subject: Re: UAP brief

Margaret,

He departs around 2:30.

If emailed to me, I can pull it up on the 9th floor acid.

Vr,

Randy

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Sent: October 1, 2020 9:40:30 AM EDT  
Received: October 1, 2020 9:40:32 AM EDT

Good morning Randy:

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Sent: October 1, 2020 9:44:49 AM EDT  
Received: October 1, 2020 9:44:45 AM EDT

I'm in the office now and can go verify

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To: Meidinger, Jolene A. (HQ-TH000) <jolene.meidinger@nasa.gov>, Gold, Michael N. (HQ-AA000) <michael.n.gold@nasa.gov>, Feldstein, Karen C. (HQ-TA000) <karen.c.feldstein@nasa.gov>, Kieffer, Margaret (HQ-TH000) <margaret.kieffer@nasa.gov>, STOVALL, SHERICE L. (HQ-TA000) <sherice.l.stovall@nasa.gov>  
Sent: October 1, 2020 9:45:19 AM EDT  
Received: October 1, 2020 9:45:00 AM EDT

Hi Jolene,

Let's target this afternoon around 1:30. This will give us time to try and get it together.

V/r,

Randy

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From: Cruz, Randy C. (HQ-AA000)[Affiliate]  
Sent: Thursday, October 1, 2020 9:45 AM  
To: Meidinger, Jolene A. (HQ-TH000) <jolene.meidinger@nasa.gov>; Gold, Michael N. (HQ-AA000) <michael.n.gold@nasa.gov>; Feldstein, Karen C. (HQ-TA000) <karen.c.feldstein@nasa.gov>; Kieffer, Margaret (HQ-TH000) <margaret.kieffer@nasa.gov>; STOVALL, SHERICE L. (HQ-TA000) <sherice.l.stovall@nasa.gov>  
Subject: RE: UAP brief

Hi Jolene,

Let's target this afternoon around 1:30. This will give us time to try and get it together.

V/r,

Randy

From: Meidinger, Jolene A. (HQ-TH000) <jolene.meidinger@nasa.gov>  
Sent: Thursday, October 1, 2020 9:41 AM  
To: Cruz, Randy C. (HQ-AA000)[Affiliate] <randy.c.cruz@nasa.gov>; Gold, Michael N. (HQ-AA000) <michael.n.gold@nasa.gov>; Feldstein, Karen C. (HQ-TA000) <karen.c.feldstein@nasa.gov>; Kieffer, Margaret (HQ-TH000) <margaret.kieffer@nasa.gov>; STOVALL, SHERICE L. (HQ-TA000) <sherice.l.stovall@nasa.gov>  
Subject: RE: UAP brief

Good morning Randy:

I have a copy of the classified briefing and will provide it to you on JWICS. I am not familiar with the iVideo, so I have reached out to OPS. What time are you targeting today?

Thank you,

Jolene

From: Cruz, Randy C. (HQ-AA000)[Affiliate] <randy.c.cruz@nasa.gov>

Sent: Thursday, October 1, 2020 8:32 AM

To: Gold, Michael N. (HQ-AA000) <michael.n.gold@nasa.gov>; Feldstein, Karen C. (HQ-TA000) <karen.c.feldstein@nasa.gov>; Meidinger, Jolene A. (HQ-TH000) <jolene.meidinger@nasa.gov>; Kieffer, Margaret (HQ-TH000) <margaret.kieffer@nasa.gov>; STOVALL, SHERICE L. (HQ-TA000) <sherice.l.stovall@nasa.gov>  
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Vr,

Randy

Randy Cruz

Senior Advisor to the Administrator

NASA Headquarters

randy.c.cruz@nasa.gov

Office: (202) 358-1445

Cell: (b) (6)

On: 01 October 2020 08:29, "Gold, Michael N. (HQ-AA000)" <michael.n.gold@nasa.gov> wrote:

Hey Randy, I'm sorry that we couldn't get schedules to work with the head of the UAP Task Force, Jay Stratton, for today. He is wrapped up in meetings at the Pentagon. Margaret/Jolene, do we have the slide deck that Jay used when we got the brief previously? Jay says there is a video version of the brief that is available on SIPRNET or JWICS. Sherice has Jay's e-mail (he is not available by phone today) and can reach out to him.

Thanks,

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From: Cruz, Randy C. (HQ-AA000)[Affiliate] <randy.c.cruz@nasa.gov>

Sent: Thursday, October 1, 2020 8:07 AM

To: Gold, Michael N. (HQ-AA000) <michael.n.gold@nasa.gov>; Feldstein, Karen C. (HQ-TA000) <karen.c.feldstein@nasa.gov>; Meidinger, Jolene A. (HQ-TH000) <jolene.meidinger@nasa.gov>  
Subject: UAP brief

Mike,

Was looking forward to the classified version of this brief. Is it possible to get the slide deck sent to me this morning so I can review with Jim?

Sipr: (b) (7)(C), (b) (6)

Jwics: (b) (7)(C), (b) (6)

Randy

Randy Cruz

Senior Advisor to the Administrator

NASA Headquarters

randy.c.cruz@nasa.gov

Office: (202) 358-1445

Cell: (b) (6)

## RE: UAP brief

---

From: Meidinger, Jolene A. (HQ-TH000) <jolene.meidinger@nasa.gov>  
To: Cruz, Randy C. (HQ-AA000)[Affiliate] <randy.c.cruz@nasa.gov>  
Sent: October 1, 2020 9:59:09 AM EDT  
Received: October 1, 2020 9:59:10 AM EDT

Hi Randy:

Yes, I am in my office.

Best/Jolene

From: Cruz, Randy C. (HQ-AA000)[Affiliate] <randy.c.cruz@nasa.gov>  
Sent: Thursday, October 1, 2020 9:58 AM  
To: Meidinger, Jolene A. (HQ-TH000) <jolene.meidinger@nasa.gov>; Gold, Michael N. (HQ-AA000) <michael.n.gold@nasa.gov>; Feldstein, Karen C. (HQ-TA000) <karen.c.feldstein@nasa.gov>; Kieffer, Margaret (HQ-TH000) <margaret.kieffer@nasa.gov>; STOVALL, SHERICE L. (HQ-TA000) <sherice.l.stovall@nasa.gov>  
Subject: RE: UAP brief

Hi Jolene,

I just pulled up the slides. Thank you for emailing. I think this will suffice.

Got time for a quick phone call?

V/r,

Randy

From: Cruz, Randy C. (HQ-AA000)[Affiliate]  
Sent: Thursday, October 1, 2020 9:45 AM  
To: Meidinger, Jolene A. (HQ-TH000) <jolene.meidinger@nasa.gov>; Gold, Michael N. (HQ-AA000) <michael.n.gold@nasa.gov>; Feldstein, Karen C. (HQ-TA000) <karen.c.feldstein@nasa.gov>; Kieffer, Margaret (HQ-TH000) <margaret.kieffer@nasa.gov>; STOVALL, SHERICE L. (HQ-TA000) <sherice.l.stovall@nasa.gov>  
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Randy Cruz

Senior Advisor to the Administrator

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Sipr: (b) (7)(C), (b) (6)

Jwics: (b) (7)(C), (b) (6)

Randy

Randy Cruz

Senior Advisor to the Administrator

NASA Headquarters

randy.c.cruz@nasa.gov

Office: (202) 358-1445

Cell: (b) (6)

## RE: UAP brief

---

From: Jacobs, Bob (HQ-NA000) <bob.jacobs@nasa.gov>  
To: Cruz, Randy C. (HQ-AA000)[Affiliate] <randy.c.cruz@nasa.gov>, Etkind, Marc R. (HQ-NA000) <marc.r.etkind@nasa.gov>  
Sent: June 8, 2021 12:32:02 PM EDT  
Received: June 8, 2021 12:32:03 PM EDT

Yeah, (b) (6), (b) (7)(C) . I'll standby and let Mark's schedule dictate what he wants. I'm available.

bj

From: Cruz, Randy C. (HQ-AA000)[Affiliate] <randy.c.cruz@nasa.gov>  
Sent: Tuesday, June 8, 2021 12:24 PM  
To: Etkind, Marc R. (HQ-NA000) <marc.r.etkind@nasa.gov>; Jacobs, Bob (HQ-NA000) <bob.jacobs@nasa.gov>  
Subject: UAP brief

Gents,

I tried to send (b) (7)(C), (b) (6)

When your schedule allows, I can bring you two into the SCIF on the 6th floor and go over the brief with you. Let me know your availability and I'll have it set up. Today would be great, if you can squeeze it in. Shouldn't take more than 15 min.

V/r,  
Randy

Randy Cruz

Senior Advisor to the Administrator

NASA Headquarters

Office: (202) 358-1445

Cell: (b) (6)

## RE: UAP brief

---

From: Gold, Michael N. (HQ-AA000) <michael.n.gold@nasa.gov>  
To: Cruz, Randy C. (HQ-AA000)[Affiliate] <randy.c.cruz@nasa.gov>, Feldstein, Karen C. (HQ-TA000) <karen.c.feldstein@nasa.gov>, Meidinger, Jolene A. (HQ-TH000) <jolene.meidinger@nasa.gov>, Kieffer, Margaret (HQ-TH000) <margaret.kieffer@nasa.gov>, STOVALL, SHERICE L. (HQ-TA000) <sherice.l.stovall@nasa.gov>  
Sent: October 1, 2020 8:29:06 AM EDT  
Received: October 1, 2020 8:29:07 AM EDT

Hey Randy, I'm sorry that we couldn't get schedules to work with the head of the UAP Task Force, Jay Stratton, for today. He is wrapped up in meetings at the Pentagon. Margaret/Jolene, do we have the slide deck that Jay used when we got the brief previously? Jay says there is a video version of the brief that is available on SIPRNET or JWICS. Sherice has Jay's e-mail (he is not available by phone today) and can reach out to him.

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Sent: Thursday, October 1, 2020 8:07 AM  
To: Gold, Michael N. (HQ-AA000) <michael.n.gold@nasa.gov>; Feldstein, Karen C. (HQ-TA000) <karen.c.feldstein@nasa.gov>; Meidinger, Jolene A. (HQ-TH000) <jolene.meidinger@nasa.gov>  
Subject: UAP brief

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Sipr: (b) (7)(C), (b) (6)

Jwics: (b) (7)(C), (b) (6)

Randy

Randy Cruz

Senior Advisor to the Administrator

NASA Headquarters

randy.c.cruz@nasa.gov

Office: (202) 358-1445

Cell: (b) (6)

## RE: UAP Briefing

---

From: Cruz, Randy C. (HQ-AA000)[Affiliate] </O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=FE606AD0FF7A47E09D3C9543390219 F5-CRUZ, RANDY>  
To: STOVALL, SHERICE L. (HQ-TA000) <sherice.l.stovall@nasa.gov>  
Cc: Massey, Natalie (HQ-AB000) <natalie.massey@nasa.gov>  
Sent: September 28, 2020 9:10:34 AM EDT  
Received: September 28, 2020 9:10:00 AM EDT

Hi Sherice-

I am available and am looking forward to this.

Best,

Randy

From: STOVALL, SHERICE L. (HQ-TA000) <sherice.l.stovall@nasa.gov>  
Sent: Monday, September 28, 2020 8:42 AM  
To: Cruz, Randy C. (HQ-AA000)[Affiliate] <randy.c.cruz@nasa.gov>  
Subject: FW: UAP Briefing

Hi Randy,

Are you available on Thursday, 10-11 am for a classified Unidentified Aerial Phenomena Task Force briefing? The Administrator requested that an invitation be extended to you and Gabe Sherman.

<https://www.defense.gov/Newsroom/Releases/Release/Article/2314065/establishment-of-unidentified-aerial-phenomena-task-force/>

Take care,

Sherice

From: Thomas, Camden D. (HQ-AA000) <camden.d.thomas@nasa.gov>  
Sent: Monday, September 28, 2020 8:22 AM  
To: STOVALL, SHERICE L. (HQ-TA000) <sherice.l.stovall@nasa.gov>  
Subject: RE: UAP Briefing

Hi Sherice,

Would Thursday from 10-11 eastern work? The Administrator has also requested that Gabe Sherman and Randy Cruz be invited.

Thank you!

Cam Thomas

Executive Assistant

Office of the Administrator

NASA HQ

Camden.d.thomas@nasa.gov

From: STOVALL, SHERICE L. (HQ-TA000) <sherice.l.stovall@nasa.gov>

Sent: Monday, September 28, 2020 7:59 AM

To: Thomas, Camden D. (HQ-AA000) <camden.d.thomas@nasa.gov>

Subject: UAP Briefing

Hi Cam,

Mike wants to setup a 1-hour classified Unidentified Aerial Phenomena Task Force briefing this week since the Administrator is in town. Can you send me his availability for this week? Thanks!

Sherice L. Stovall

Office of International & Interagency Relations (OIIR)

NASA HQ – Washington D.C.

Email: sherice.l.stovall@nasa.gov

Phone: (202) 549-9188

Teleworking M-F, 8 AM – 5 PM EDT

Offline daily 12 – 1 PM EDT

"The single biggest problem in communication is the illusion that it has taken place." - George Bernard Shaw

## Re: UAP messaging

---

From: Feldstein, Karen C. (HQ-TA000) <karen.c.feldstein@nasa.gov>  
To: Cruz, Randy C. (HQ-AA000)[Affiliate] <randy.c.cruz@nasa.gov>, Etkind, Marc R. (HQ-NA000) <marc.r.etkind@nasa.gov>  
Cc: Kieffer, Margaret (HQ-TH000) <margaret.kieffer@nasa.gov>, McKay, Meredith (HQ-TA000) <meredith.mckay@nasa.gov>  
Sent: June 8, 2021 3:39:29 PM EDT  
Received: June 8, 2021 3:39:29 PM EDT

Hi Randy, I'm out this afternoon but am looping in Margaret and Meredith.

Best,

Karen

On: 08 June 2021 13:29, "Cruz, Randy C. (HQ-AA000)[Affiliate]" <randy.c.cruz@nasa.gov> wrote:

Karen/Marc,

I understand that you two are working closely on the UAP messaging efforts and I don't want to stifle or confuse anything. I was preparing share an initial classified brief from the UAP Task Force that is dated from August 2020 with Marc. It might be OBE at the this point, but wanted to let you know that we can still do that if you desire. Let me know how I can help.

V/r,

Randy

Randy Cruz

Senior Advisor to the Administrator

NASA Headquarters

Office: (202) 358-1445

Cell: (b) (6)

## Re: UAP Report

---

From: Etkind, Marc R. (HQ-NA000) <marc.r.etkind@nasa.gov>  
To: Cruz, Randy C. (HQ-AA000)[Affiliate] <randy.c.cruz@nasa.gov>  
Sent: June 25, 2021 10:16:56 AM EDT  
Received: June 25, 2021 10:16:57 AM EDT

Sorry misspoke. Wasn't the administrator who asked. I'm traveling today. Can I call you. Lmk the number.

On: 25 June 2021 10:11, "Cruz, Randy C. (HQ-AA000)[Affiliate]" <randy.c.cruz@nasa.gov> wrote:

I'm in. Shall I come down to your office?

Vr,

Randy

From: Etkind, Marc R. (HQ-NA000) <marc.r.etkind@nasa.gov>  
Sent: Friday, June 25, 2021 10:09 AM  
To: Cruz, Randy C. (HQ-AA000)[Affiliate] <randy.c.cruz@nasa.gov>  
Cc: McGuinness, Jackie (HQ-NA000) <jackie.mcguinness@nasa.gov>  
Subject: UAP Report

Hi Randy. With the UAP report coming out today, the Administrator would like some background on NASA involvement in the report. I understand our involvement was minimal and that this is a DOD report. That said. Any chance I can get some quick facts we can give him, including timing of our input and areas of discussion. Lmk if phone is easier. Thanks.

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From: Cruz, Randy C. (HQ-AA000)[Affiliate] </O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=FE606AD0FF7A47E09D3C9543390219 F5-CRUZ, RANDY>  
To: Etkind, Marc R. (HQ-NA000) <marc.r.etkind@nasa.gov>  
Sent: June 25, 2021 10:17:38 AM EDT  
Received: June 25, 2021 10:17:00 AM EDT

(b) (6)

From: Etkind, Marc R. (HQ-NA000) <marc.r.etkind@nasa.gov>  
Sent: Friday, June 25, 2021 10:17 AM  
To: Cruz, Randy C. (HQ-AA000)[Affiliate] <randy.c.cruz@nasa.gov>  
Subject: Re: UAP Report

Sorry misspoke. Wasn't the administrator who asked. I'm traveling today. Can I call you. Lmk the number.

On: 25 June 2021 10:11, "Cruz, Randy C. (HQ-AA000)[Affiliate]" <randy.c.cruz@nasa.gov> wrote:

I'm in. Shall I come down to your office?

Vr,

Randy

From: Etkind, Marc R. (HQ-NA000) <marc.r.etkind@nasa.gov>  
Sent: Friday, June 25, 2021 10:09 AM  
To: Cruz, Randy C. (HQ-AA000)[Affiliate] <randy.c.cruz@nasa.gov>  
Cc: McGuinness, Jackie (HQ-NA000) <jackie.mcguinness@nasa.gov>  
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## Re: UAP Report

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From: McGuinness, Jackie (HQ-NA000) <jackie.mcguinness@nasa.gov>  
To: Etkind, Marc R. (HQ-NA000) <marc.r.etkind@nasa.gov>, Cruz, Randy C. (HQ-AA000)[Affiliate] <randy.c.cruz@nasa.gov>  
Sent: June 25, 2021 10:21:31 AM EDT  
Received: June 25, 2021 10:21:31 AM EDT

Hey Randy - if possible, would you mind providing some details before 11:30am? Nelson is doing a Washington Post interview at noon and it would be helpful for him to have a clearer understanding ahead of that.

Thank you!

Get Outlook for iOS

<<https://gcc02.safelinks.protection.outlook.com/?url=https://aka.ms/o0ukef&data=04|01|randy.c.cruz@nasa.gov|e517be4ef0e24bbb92db08d937e48748|7005d45845be48ae8140d43da96dd17b|0|0|637602276917277252|Unknown|TWFPbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ik1haWwiLCJXVCi6Mn0=|1000&sdata=v1W8tTrM+7K0W0GulwBzU6GdyjygED2DX8WZ/4Mni0Q=&reserved=0>>

From: Etkind, Marc R. (HQ-NA000) <marc.r.etkind@nasa.gov>  
Sent: Friday, June 25, 2021 10:09:18 AM  
To: Cruz, Randy C. (HQ-AA000)[Affiliate] <randy.c.cruz@nasa.gov>  
Cc: McGuinness, Jackie (HQ-NA000) <jackie.mcguinness@nasa.gov>  
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To: McGuinness, Jackie (HQ-NA000) <jackie.mcguinness@nasa.gov>, Cruz, Randy C. (HQ-AA000)[Affiliate] <randy.c.cruz@nasa.gov>  
Sent: June 25, 2021 10:29:39 AM EDT  
Received: June 25, 2021 10:29:42 AM EDT

Will find a time to call you. In the next hour.

On: 25 June 2021 10:21, "McGuinness, Jackie (HQ-NA000)" <jackie.mcguinness@nasa.gov> wrote:

Hey Randy - if possible, would you mind providing some details before 11:30am? Nelson is doing a Washington Post interview at noon and it would be helpful for him to have a clearer understanding ahead of that.

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To: Cruz, Randy C. (HQ-AA000)[Affiliate] <randy.c.cruz@nasa.gov>, Feldstein, Karen C. (HQ-TA000) <karen.c.feldstein@nasa.gov>, Meidinger, Jolene A. (HQ-TH000) <jolene.meidinger@nasa.gov>  
Sent: June 25, 2021 10:52:55 AM EDT  
Received: June 25, 2021 10:52:56 AM EDT

Randy:

Suggested TPs are below...Jolene ok by you?

For background, what Jolene was provided does not reflect OIIR outreach to two of the three individuals identified as "contributors." In one case, the individual provided general background info associated with propulsion technology, without knowledge they were contributing to this specific report. In the other case, the individual was contacted for insights into aerodynamics on a particular case, but that individual did not have the necessary clearance, so no NASA analysis was provided beyond what is available on our websites. The first individual, no longer with NASA, we understand from Gen Stratton may have been consulted a few times for NASA data that would corroborate anomalies the UAP TF collected. We are not aware that any NASA data that was relevant or provided.

- NASA agrees it is important to thoroughly investigate these UAPs.
- I am told that NASA did not provide specific analysis on events outlined in the UAP report, rather we contributed general information, in the fields of propulsion and aerodynamics.
- NASA has a long history of interagency collaboration to meet new challenges, and stands ready to provide technical and scientific expertise.
- One of NASA's key goals is the search for life in the universe. To date, NASA has yet to find any credible evidence of extraterrestrial life; however, NASA is exploring the solar system and beyond to help us answer fundamental questions, including whether we are alone in the universe.

From: Cruz, Randy C. (HQ-AA000)[Affiliate] <randy.c.cruz@nasa.gov>  
Sent: Friday, June 25, 2021 10:15 AM  
To: Feldstein, Karen C. (HQ-TA000) <karen.c.feldstein@nasa.gov>; Kieffer, Margaret (HQ-TH000) <margaret.kieffer@nasa.gov>; Meidinger, Jolene A. (HQ-TH000) <jolene.meidinger@nasa.gov>  
Subject: FW: UAP Report

I am happy to forward the info Jolene and I have received from the UAPTF. Let me know.

V/r,

Randy

From: Etkind, Marc R. (HQ-NA000) <marc.r.etkind@nasa.gov>  
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---

From: Meidinger, Jolene A. (HQ-TH000) <jolene.meidinger@nasa.gov>  
To: Kieffer, Margaret (HQ-TH000) <margaret.kieffer@nasa.gov>, Cruz, Randy C. (HQ-AA000)[Affiliate] <randy.c.cruz@nasa.gov>, Feldstein, Karen C. (HQ-TA000) <karen.c.feldstein@nasa.gov>  
Sent: June 25, 2021 10:59:17 AM EDT  
Received: June 25, 2021 10:59:18 AM EDT

Margaret – Yes, that is all consistent with our discussions.

Best/Jolene

From: Kieffer, Margaret (HQ-TH000) <margaret.kieffer@nasa.gov>  
Sent: Friday, June 25, 2021 10:53 AM  
To: Cruz, Randy C. (HQ-AA000)[Affiliate] <randy.c.cruz@nasa.gov>; Feldstein, Karen C. (HQ-TA000) <karen.c.feldstein@nasa.gov>; Meidinger, Jolene A. (HQ-TH000) <jolene.meidinger@nasa.gov>  
Subject: RE: UAP Report

Randy:

Suggested TPs are below...Jolene ok by you?

For background, what Jolene was provided does not reflect OIIR outreach to two of the three individuals identified as “contributors.” In one case, the individual provided general background info associated with propulsion technology, without knowledge they were contributing to this specific report. In the other case, the individual was contacted for insights into aerodynamics on a particular case, but that individual did not have the necessary clearance, so no NASA analysis was provided beyond what is available on our websites. The first individual, no longer with NASA, we understand from Gen Stratton may have been consulted a few times for NASA data that would corroborate anomalies the UAP TF collected. We are not aware that any NASA data that was relevant or provided.

- NASA agrees it is important to thoroughly investigate these UAPs.
- I am told that NASA did not provide specific analysis on events outlined in the UAP report, rather we contributed general information, in the fields of propulsion and aerodynamics.
- NASA has a long history of interagency collaboration to meet new challenges, and stands ready to provide technical and scientific expertise.
- One of NASA’s key goals is the search for life in the universe. To date, NASA has yet to find any credible evidence of extraterrestrial life; however, NASA is exploring the solar system and beyond to help us answer fundamental questions, including whether we are alone in the universe.

From: Cruz, Randy C. (HQ-AA000)[Affiliate] <randy.c.cruz@nasa.gov>  
Sent: Friday, June 25, 2021 10:15 AM  
To: Feldstein, Karen C. (HQ-TA000) <karen.c.feldstein@nasa.gov>; Kieffer, Margaret (HQ-TH000) <margaret.kieffer@nasa.gov>; Meidinger, Jolene A. (HQ-TH000) <jolene.meidinger@nasa.gov>  
Subject: FW: UAP Report

I am happy to forward the info Jolene and I have received from the UAPTF. Let me know.

V/r,

Randy

From: Etkind, Marc R. (HQ-NA000) <marc.r.etkind@nasa.gov>  
Sent: Friday, June 25, 2021 10:09 AM  
To: Cruz, Randy C. (HQ-AA000)[Affiliate] <randy.c.cruz@nasa.gov>  
Cc: McGuinness, Jackie (HQ-NA000) <jackie.mcguinness@nasa.gov>  
Subject: UAP Report

Hi Randy. With the UAP report coming out today, the Administrator would like some background on NASA involvement in the report. I understand our involvement was minimal and that this is a DOD report. That said. Any chance I can get some quick facts we can give him, including timing of our input and areas of discussion. Lmk if phone is easier. Thanks.

## RE: UAP Report

---

From: Cruz, Randy C. (HQ-AA000)[Affiliate] </O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=FE606AD0FF7A47E09D3C9543390219 F5-CRUZ, RANDY>  
To: Etkind, Marc R. (HQ-NA000) <marc.r.etkind@nasa.gov>  
Cc: McGuinness, Jackie (HQ-NA000) <jackie.mcguinness@nasa.gov>  
Sent: June 25, 2021 12:21:48 PM EDT  
Received: June 25, 2021 12:21:00 PM EDT

Scheduled the 6th floor SCIF at 4:15 with the Administrator and Margaret Kieffer to answer any questions he has.

Randy

From: Etkind, Marc R. (HQ-NA000) <marc.r.etkind@nasa.gov>  
Sent: Friday, June 25, 2021 10:30 AM  
To: McGuinness, Jackie (HQ-NA000) <jackie.mcguinness@nasa.gov>; Cruz, Randy C. (HQ-AA000)[Affiliate] <randy.c.cruz@nasa.gov>  
Subject: Re: UAP Report

Will find a time to call you. In the next hour.

On: 25 June 2021 10:21, "McGuinness, Jackie (HQ-NA000)" <jackie.mcguinness@nasa.gov> wrote:

Hey Randy - if possible, would you mind providing some details before 11:30am? Nelson is doing a Washington Post interview at noon and it would be helpful for him to have a clearer understanding ahead of that.

Thank you!

Get Outlook for iOS

<<https://gcc02.safelinks.protection.outlook.com/?url=https://aka.ms/o0ukef&data=04|01|randy.c.cruz@nasa.gov|afae0423612f4c11925208d937e5aa48|7005d45845be48ae8140d43da96dd17b|0|0|637602281828342832|Unknown|TWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikk1haWwiLCJXVCi6Mn0=|1000&sdata=RsqnenGWwvbv9NMBTemgmsYbu9IOqtrZ3P+2Fe8JovAM=&reserved=0>>

From: Etkind, Marc R. (HQ-NA000) <marc.r.etkind@nasa.gov>  
Sent: Friday, June 25, 2021 10:09:18 AM  
To: Cruz, Randy C. (HQ-AA000)[Affiliate] <randy.c.cruz@nasa.gov>  
Cc: McGuinness, Jackie (HQ-NA000) <jackie.mcguinness@nasa.gov>  
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## Re: UAP Report

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From: Etkind, Marc R. (HQ-NA000) <marc.r.etkind@nasa.gov>  
To: Cruz, Randy C. (HQ-AA000)[Affiliate] <randy.c.cruz@nasa.gov>  
Cc: McGuinness, Jackie (HQ-NA000) <jackie.mcguinness@nasa.gov>, Lal, Bhavya (HQ-AA000) <bhavya.lal@nasa.gov>  
Sent: June 25, 2021 12:32:49 PM EDT  
Received: June 25, 2021 12:32:51 PM EDT

Thanks Randy. Adding Bhavya to see if she can join.

On: 25 June 2021 12:21, "Cruz, Randy C. (HQ-AA000)[Affiliate]" <randy.c.cruz@nasa.gov> wrote:

Scheduled the 6th floor SCIF at 4:15 with the Administrator and Margaret Kieffer to answer any questions he has.

Randy

From: Etkind, Marc R. (HQ-NA000) <marc.r.etkind@nasa.gov>  
Sent: Friday, June 25, 2021 10:30 AM  
To: McGuinness, Jackie (HQ-NA000) <jackie.mcguinness@nasa.gov>; Cruz, Randy C. (HQ-AA000)[Affiliate] <randy.c.cruz@nasa.gov>  
Subject: Re: UAP Report

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On: 25 June 2021 10:21, "McGuinness, Jackie (HQ-NA000)" <jackie.mcguinness@nasa.gov> wrote:

Hey Randy - if possible, would you mind providing some details before 11:30am? Nelson is doing a Washington Post interview at noon and it would be helpful for him to have a clearer understanding ahead of that.

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From: Etkind, Marc R. (HQ-NA000) <marc.r.etkind@nasa.gov>  
Sent: Friday, June 25, 2021 10:09:18 AM  
To: Cruz, Randy C. (HQ-AA000)[Affiliate] <randy.c.cruz@nasa.gov>  
Cc: McGuinness, Jackie (HQ-NA000) <jackie.mcguinness@nasa.gov>  
Subject: UAP Report

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in the report. I understand our involvement was minimal and that this is a DOD report. That said. Any chance I can get some quick facts we can give him, including timing of our input and areas of discussion. Lmk if phone is easier. Thanks.

## Re: UAP Report

---

From: Etkind, Marc R. (HQ-NA000) <marc.r.etkind@nasa.gov>  
To: Cruz, Randy C. (HQ-AA000)[Affiliate] <randy.c.cruz@nasa.gov>  
Cc: McGuinness, Jackie (HQ-NA000) <jackie.mcguinness@nasa.gov>, Lal, Bhavya (HQ-AA000) <bhavya.lal@nasa.gov>  
Sent: June 25, 2021 3:33:21 PM EDT  
Received: June 25, 2021 3:33:23 PM EDT

And looking like 430.

On: 25 June 2021 12:32, "Etkind, Marc R. (HQ-NA000)" <marc.r.etkind@nasa.gov> wrote:

Thanks Randy. Adding Bhavya to see if she can join.

On: 25 June 2021 12:21, "Cruz, Randy C. (HQ-AA000)[Affiliate]" <randy.c.cruz@nasa.gov> wrote:

Scheduled the 6th floor SCIF at 4:15 with the Administrator and Margaret Kieffer to answer any questions he has.

Randy

From: Etkind, Marc R. (HQ-NA000) <marc.r.etkind@nasa.gov>  
Sent: Friday, June 25, 2021 10:30 AM  
To: McGuinness, Jackie (HQ-NA000) <jackie.mcguinness@nasa.gov>; Cruz, Randy C. (HQ-AA000)[Affiliate] <randy.c.cruz@nasa.gov>  
Subject: Re: UAP Report

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Thank you!

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From: Etkind, Marc R. (HQ-NA000) <marc.r.etkind@nasa.gov>

Sent: Friday, June 25, 2021 10:09:18 AM

To: Cruz, Randy C. (HQ-AA000)[Affiliate] <randy.c.cruz@nasa.gov>

Cc: McGuinness, Jackie (HQ-NA000) <jackie.mcguinness@nasa.gov>

Subject: UAP Report

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Thanks.

## Re: UAP Report

---

From: Lal, Bhavya (HQ-AA000) <bhavya.lal@nasa.gov>  
To: Etkind, Marc R. (HQ-NA000) <marc.r.etkind@nasa.gov>, Cruz, Randy C. (HQ-AA000)[Affiliate] <randy.c.cruz@nasa.gov>  
Cc: McGuinness, Jackie (HQ-NA000) <jackie.mcguinness@nasa.gov>  
Sent: June 25, 2021 3:57:07 PM EDT  
Received: June 25, 2021 3:57:08 PM EDT

Ok. Using the time to reread the report.

Bhavya Lal, Ph.D.

(b) (6)

On: 25 June 2021 15:33, "Etkind, Marc R. (HQ-NA000)" <marc.r.etkind@nasa.gov> wrote:

And looking like 430.

On: 25 June 2021 12:32, "Etkind, Marc R. (HQ-NA000)" <marc.r.etkind@nasa.gov> wrote:

Thanks Randy. Adding Bhavya to see if she can join.

On: 25 June 2021 12:21, "Cruz, Randy C. (HQ-AA000)[Affiliate]" <randy.c.cruz@nasa.gov> wrote:

Scheduled the 6th floor SCIF at 4:15 with the Administrator and Margaret Kieffer to answer any questions he has.

Randy

From: Etkind, Marc R. (HQ-NA000) <marc.r.etkind@nasa.gov>  
Sent: Friday, June 25, 2021 10:30 AM  
To: McGuinness, Jackie (HQ-NA000) <jackie.mcguinness@nasa.gov>; Cruz, Randy C. (HQ-AA000)[Affiliate] <randy.c.cruz@nasa.gov>  
Subject: Re: UAP Report

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On: 25 June 2021 10:21, "McGuinness, Jackie (HQ-NA000)" <jackie.mcguinness@nasa.gov> wrote:

Hey Randy - if possible, would you mind providing some details before 11:30am? Nelson is doing a Washington Post interview at noon and it would be helpful for him to have a clearer understanding ahead of that.

Thank you!

Get Outlook for iOS

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From: Etkind, Marc R. (HQ-NA000) <marc.r.etkind@nasa.gov>

Sent: Friday, June 25, 2021 10:09:18 AM

To: Cruz, Randy C. (HQ-AA000)[Affiliate] <randy.c.cruz@nasa.gov>

Cc: McGuinness, Jackie (HQ-NA000) <jackie.mcguinness@nasa.gov>

Subject: UAP Report

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## RE: UAP Report

---

From: Chance, Lorenzo V. (HQ-LP022) <lorenzo.v.chance@nasa.gov>  
To: Cruz, Randy C. (HQ-AA000)[Affiliate] <randy.c.cruz@nasa.gov>, Massey, Natalie (HQ-AB000) <natalie.massey@nasa.gov>  
Sent: June 25, 2021 3:59:29 PM EDT  
Received: June 25, 2021 3:59:32 PM EDT

Randy – No worries. Thanks for the heads-up!

Lorenzo

From: Cruz, Randy C. (HQ-AA000)[Affiliate] <randy.c.cruz@nasa.gov>  
Sent: Friday, June 25, 2021 3:42 PM  
To: Massey, Natalie (HQ-AB000) <natalie.massey@nasa.gov>; Chance, Lorenzo V. (HQ-LP022) <lorenzo.v.chance@nasa.gov>  
Subject: FW: UAP Report

Heads up- looking like 4:30

From: Etkind, Marc R. (HQ-NA000) <marc.r.etkind@nasa.gov>  
Sent: Friday, June 25, 2021 3:33 PM  
To: Cruz, Randy C. (HQ-AA000)[Affiliate] <randy.c.cruz@nasa.gov>  
Cc: McGuinness, Jackie (HQ-NA000) <jackie.mcguinness@nasa.gov>; Lal, Bhavya (HQ-AA000) <bhavya.lal@nasa.gov>  
Subject: Re: UAP Report

And looking like 4:30.

On: 25 June 2021 12:32, "Etkind, Marc R. (HQ-NA000)" <marc.r.etkind@nasa.gov> wrote:

Thanks Randy. Adding Bhavya to see if she can join.

On: 25 June 2021 12:21, "Cruz, Randy C. (HQ-AA000)[Affiliate]" <randy.c.cruz@nasa.gov> wrote:

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Randy

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Sent: Friday, June 25, 2021 10:30 AM  
To: McGuinness, Jackie (HQ-NA000) <jackie.mcguinness@nasa.gov>; Cruz, Randy C. (HQ-AA000)[Affiliate] <randy.c.cruz@nasa.gov>  
Subject: Re: UAP Report

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On: 25 June 2021 10:21, "McGuinness, Jackie (HQ-NA000)" <jackie.mcguinness@nasa.gov> wrote:

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From: Etkind, Marc R. (HQ-NA000) <marc.r.etkind@nasa.gov>

Sent: Friday, June 25, 2021 10:09:18 AM

To: Cruz, Randy C. (HQ-AA000)[Affiliate] <randy.c.cruz@nasa.gov>

Cc: McGuinness, Jackie (HQ-NA000) <jackie.mcguinness@nasa.gov>

Subject: UAP Report

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## RE: UAP Report

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From: Cruz, Randy C. (HQ-AA000)[Affiliate] </O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=FE606AD0FF7A47E09D3C9543390219 F5-CRUZ, RANDY>  
To: Etkind, Marc R. (HQ-NA000) <marc.r.etkind@nasa.gov>  
Sent: June 25, 2021 10:11:01 AM EDT  
Received: June 25, 2021 10:11:00 AM EDT

I'm in. Shall I come down to your office?

Vr,

Randy

From: Etkind, Marc R. (HQ-NA000) <marc.r.etkind@nasa.gov>  
Sent: Friday, June 25, 2021 10:09 AM  
To: Cruz, Randy C. (HQ-AA000)[Affiliate] <randy.c.cruz@nasa.gov>  
Cc: McGuinness, Jackie (HQ-NA000) <jackie.mcguinness@nasa.gov>  
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## Re: UAPTF meeting

---

From: Massey, Natalie (HQ-AB000) <natalie.massey@nasa.gov>  
To: Cruz, Randy C. (HQ-AA000)[Affiliate] <randy.c.cruz@nasa.gov>  
Sent: July 19, 2021 12:46:50 PM EDT  
Received: July 19, 2021 12:46:51 PM EDT

Kayla scheduled it on Aug 17 at 11:00am.

--

Natalie L. Massey

Executive Assistant to the Deputy Administrator

Office of the Administrator

Mary W. Jackson

NASA Headquarters

Office: 202-358-1020

E-mail: natalie.massey@nasa.gov

From: "Cruz, Randy C. (HQ-AA000)[Affiliate]" <randy.c.cruz@nasa.gov>  
Date: Monday, July 19, 2021 at 12:44 PM  
To: Natalie Massey <natalie.massey@nasa.gov>  
Subject: UAPTF meeting

Natalie,

Was this ever scheduled with the contact that Margaret Kieffer was supposed to give you a couple weeks back?

V/r,

Randy

Randy Cruz

Senior Advisor to the Administrator

NASA Headquarters

Office: (202) 358-1445

Cell: (b) (6)

## RE: Unidentified Aerial Phenomena

---

From: Connelly, Sandra (HQ-DA000) <sandra.connelly@nasa.gov>  
To: New, Michael H. (HQ-DA000) <michael.h.new@nasa.gov>, Zurbuchen, Thomas H. (HQ-DA000) <thomas.h.zurbuchen@nasa.gov>, Hertz, Paul (HQ-DH000) <paul.hertz@nasa.gov>, Feldstein, Karen C. (HQ-TA000) <karen.c.feldstein@nasa.gov>, Cruz, Randy C. (HQ-AA000)[Affiliate] <randy.c.cruz@nasa.gov>, Gold, Michael N. (HQ-AA000) <michael.n.gold@nasa.gov>  
Sent: January 4, 2021 2:48:45 PM EST  
Received: January 4, 2021 2:48:46 PM EST

Looped in TZ and Michael New. See below...

\*\*\*\*\*

Sandra Connelly

Deputy Associate Administrator

Science Mission Directorate

NASA Headquarters

300 E Street SW

Washington, DC 20546

(w) 202-358-4731

(c) (b) (6)

Sandra.Connelly@nasa.gov

From: New, Michael H. (HQ-DA000) <michael.h.new@nasa.gov>  
Sent: Monday, January 4, 2021 2:41 PM  
To: Zurbuchen, Thomas H. (HQ-DA000) <thomas.h.zurbuchen@nasa.gov>; Connelly, Sandra (HQ-DA000) <sandra.connelly@nasa.gov>; Hertz, Paul (HQ-DH000) <paul.hertz@nasa.gov>  
Subject: Re: Unidentified Aerial Phenomena

To the best of my knowledge, we don't have any funded investigations on Unidentified Aerial Phenomena. At some level, I suppose, UAP might be considered a type of "technosignature" but I personally have never seen a proposal to scientifically analyze data on UAPs — and as the Program Scientist for the Exobiology Program, believe me when I say that I have reviewed numerous proposals on similar topics.

--

Michael H. New, PhD

Deputy Associate Administrator for Research

Science Mission Directorate

Mary W. Jackson NASA Headquarters Building

300 Hidden Figures Way SW, Washington, DC 20546-0001

Phone: (202) 358-1766

Pronouns: he/him/his

From: "Zurbuchen, Thomas H. (HQ-DA000)" <thomas.h.zurbuchen@nasa.gov>

Date: Monday, January 4, 2021 at 2:32 PM

To: "Connelly, Sandra (HQ-DA000)" <sandra.connelly@nasa.gov>, Michael New <michael.h.new@nasa.gov>, "Hertz, Paul (HQ-DA000)" <paul.hertz@nasa.gov>

Subject: Re: Unidentified Aerial Phenomena

Sandra – I am cc-ing in the experts on this...

From: "Connelly, Sandra (HQ-DA000)" <sandra.connelly@nasa.gov>

Date: Monday, January 4, 2021 at 2:27 PM

To: "Zurbuchen, Thomas H. (HQ-DA000)" <thomas.h.zurbuchen@nasa.gov>

Subject: FW: Unidentified Aerial Phenomena

Thomas,

This came up during the extended federated board today. As an agency, we don't have anyone looking for UFO's, do we?? SMD looks for signs of life and near earth objects. If a UFO was identified as a result of our work, I'm guessing the science community would be thrilled – as long as they are friendly – however, we aren't searching for UFO's, we search for scientific discovery. What would your response be?

Sandra

\*\*\*\*\*

Sandra Connelly

Deputy Associate Administrator

Science Mission Directorate

NASA Headquarters

300 E Street SW

Washington, DC 20546

(w) 202-358-4731

(c) (b) (6)

Sandra.Connelly@nasa.gov

From: Feldstein, Karen C. (HQ-TA000) <karen.c.feldstein@nasa.gov>

Sent: Monday, January 4, 2021 1:55 PM  
To: Cruz, Randy C. (HQ-AA000)[Affiliate] <randy.c.cruz@nasa.gov>; Connelly, Sandra (HQ-DA000) <sandra.connelly@nasa.gov>; Gold, Michael N. (HQ-AA000) <michael.n.gold@nasa.gov>  
Subject: Re: Unidentified Aerial Phenomena

Hi Randy, looping in Mike as well.

Thanks,

Karen

From: "Cruz, Randy C. (HQ-AA000)[Affiliate]" <randy.c.cruz@nasa.gov>  
Date: Monday, January 4, 2021 at 1:50 PM  
To: "Connelly, Sandra (HQ-DA000)" <sandra.connelly@nasa.gov>  
Cc: Karen Feldstein <karen.c.feldstein@nasa.gov>  
Subject: Unidentified Aerial Phenomena

Happy New Year Sandra and Karen!

There's been a lot of media discussion lately about UFO's, supported by 'leaked footage,' photos, etc. of things in LEO or well within earth's atmosphere. I imagine, at some point, NASA gets approached to validate and utilize our technologies/capabilities to monitor and/or analyze some of these claims. Who at NASA does this?

The Senate Intelligence Authorization Act for FY2021 directed an analysis of known incidents and a plan to report these phenomenon in the future. I imagine this will become an inter-agency effort.

V/r,

Randy

Randy Cruz

Senior Advisor to the Administrator

NASA Headquarters

Office: (202) 358-1445

Cell: (b) (6)

## RE: Unidentified Aerial Phenomena

---

To: Gold, Michael N. (HQ-AA000) <michael.n.gold@nasa.gov>, Connelly, Sandra (HQ-DA000) <sandra.connelly@nasa.gov>, New, Michael H. (HQ-DA000) <michael.h.new@nasa.gov>, Zurbuchen, Thomas H. (HQ-DA000) <thomas.h.zurbuchen@nasa.gov>, Hertz, Paul (HQ-DH000) <paul.hertz@nasa.gov>, Feldstein, Karen C. (HQ-TA000) <karen.c.feldstein@nasa.gov>  
Cc: Montalbano, Joel R. (JSC-OA111) <joel.r.montalbano@nasa.gov>  
Sent: January 4, 2021 3:46:46 PM EST  
Received: January 4, 2021 3:46:37 PM EST

All,

Thanks for the feedback. Not that Kirk and Jay aren't brilliant people, but in my head, there were some forensic NASA scientists that would identify/confirm such claims. When we see reports of UFO's, but really look like an object burning up as it enters the atmosphere, I would've thought that we would be able to confirm things like that.

Copy all on the

From: Gold, Michael N. (HQ-AA000) <michael.n.gold@nasa.gov>  
Sent: Monday, January 4, 2021 3:20 PM  
To: Connelly, Sandra (HQ-DA000) <sandra.connelly@nasa.gov>; New, Michael H. (HQ-DA000) <michael.h.new@nasa.gov>; Zurbuchen, Thomas H. (HQ-DA000) <thomas.h.zurbuchen@nasa.gov>; Hertz, Paul (HQ-DH000) <paul.hertz@nasa.gov>; Feldstein, Karen C. (HQ-TA000) <karen.c.feldstein@nasa.gov>; Cruz, Randy C. (HQ-AA000)[Affiliate] <randy.c.cruz@nasa.gov>  
Cc: Montalbano, Joel R. (JSC-OA111) <joel.r.montalbano@nasa.gov>  
Subject: RE: Unidentified Aerial Phenomena

My understanding is that Jay Stratton (from the Nimitz Center), who is leading the UAP Task Force (I'm pasting a copy of a press release announcing the Task Force below) would occasionally reach out to Kirk Shireman to help 'debunk' UAP/UFO claims. For example, Jay would receive imagery or info of activities that were 'unidentified' which Kirk and the NASA team would then help him to identify / confirm that they were related to the ISS. I believe there was also some coordination at one point between Jay and NASA PAO. Beyond that, I don't believe the Agency has ever leveraged any of its capabilities to analyze the UAP/UFO phenomena.

Establishment of Unidentified Aerial Phenomena Task Force > U.S. DEPARTMENT OF DEFENSE > Release <<https://www.defense.gov/Newsroom/Releases/Release/Article/2314065/establishment-of-unidentified-aerial-phenomena-task-force/>>

We held a meeting last Fall to introduce Jay to Joel to ensure that Jay knew who to go to if he required information from the ISS program.

Hope this is helpful!

- Mike

From: Connelly, Sandra (HQ-DA000) <sandra.connelly@nasa.gov>  
Sent: Monday, January 4, 2021 2:49 PM  
To: New, Michael H. (HQ-DA000) <michael.h.new@nasa.gov>; Zurbuchen, Thomas H. (HQ-DA000) <thomas.h.zurbuchen@nasa.gov>; Hertz, Paul (HQ-DH000) <paul.hertz@nasa.gov>; Feldstein, Karen C. (HQ-TA000) <karen.c.feldstein@nasa.gov>; Cruz, Randy C. (HQ-AA000)[Affiliate] <randy.c.cruz@nasa.gov>; Gold, Michael N. (HQ-AA000) <michael.n.gold@nasa.gov>

Subject: RE: Unidentified Aerial Phenomena

Looped in TZ and Michael New. See below...

\*\*\*\*\*

Sandra Connelly

Deputy Associate Administrator

Science Mission Directorate

NASA Headquarters

300 E Street SW

Washington, DC 20546

(w) 202-358-4731

(c) (b) (6)

Sandra.Connelly@nasa.gov

From: New, Michael H. (HQ-DA000) <michael.h.new@nasa.gov>

Sent: Monday, January 4, 2021 2:41 PM

To: Zurbuchen, Thomas H. (HQ-DA000) <thomas.h.zurbuchen@nasa.gov>; Connelly, Sandra (HQ-DA000) <sandra.connelly@nasa.gov>; Hertz, Paul (HQ-DH000) <paul.hertz@nasa.gov>

Subject: Re: Unidentified Aerial Phenomena

To the best of my knowledge, we don't have any funded investigations on Unidentified Aerial Phenomena. At some level, I suppose, UAP might be considered a type of "technosignature" but I personally have never seen a proposal to scientifically analyze data on UAPs — and as the Program Scientist for the Exobiology Program, believe me when I say that I have reviewed numerous proposals on similar topics.

--

Michael H. New, PhD

Deputy Associate Administrator for Research

Science Mission Directorate

Mary W. Jackson NASA Headquarters Building

300 Hidden Figures Way SW, Washington, DC 20546-0001

Phone: (202) 358-1766

Pronouns: he/him/his

From: "Zurbuchen, Thomas H. (HQ-DA000)" <thomas.h.zurbuchen@nasa.gov>  
Date: Monday, January 4, 2021 at 2:32 PM  
To: "Connelly, Sandra (HQ-DA000)" <sandra.connelly@nasa.gov>, Michael New <michael.h.new@nasa.gov>, "Hertz, Paul (HQ-DA000)" <paul.hertz@nasa.gov>  
Subject: Re: Unidentified Aerial Phenomena

Sandra – I am cc-ing in the experts on this...

From: "Connelly, Sandra (HQ-DA000)" <sandra.connelly@nasa.gov>  
Date: Monday, January 4, 2021 at 2:27 PM  
To: "Zurbuchen, Thomas H. (HQ-DA000)" <thomas.h.zurbuchen@nasa.gov>  
Subject: FW: Unidentified Aerial Phenomena

Thomas,

This came up during the extended federated board today. As an agency, we don't have anyone looking for UFO's, do we?? SMD looks for signs of life and near earth objects. If a UFO was identified as a result of our work, I'm guessing the science community would be thrilled – as long as they are friendly – however, we aren't searching for UFO's, we search for scientific discovery. What would your response be?

Sandra

\*\*\*\*\*

Sandra Connelly

Deputy Associate Administrator

Science Mission Directorate

NASA Headquarters

300 E Street SW

Washington, DC 20546

(w) 202-358-4731

(c) (b) (6)

Sandra.Connelly@nasa.gov

From: Feldstein, Karen C. (HQ-TA000) <karen.c.feldstein@nasa.gov>  
Sent: Monday, January 4, 2021 1:55 PM  
To: Cruz, Randy C. (HQ-AA000)[Affiliate] <randy.c.cruz@nasa.gov>; Connelly, Sandra (HQ-DA000) <sandra.connelly@nasa.gov>; Gold, Michael N. (HQ-AA000) <michael.n.gold@nasa.gov>  
Subject: Re: Unidentified Aerial Phenomena

Hi Randy, looping in Mike as well.

Thanks,

Karen

From: "Cruz, Randy C. (HQ-AA000)[Affiliate]" <randy.c.cruz@nasa.gov>

Date: Monday, January 4, 2021 at 1:50 PM

To: "Connelly, Sandra (HQ-DA000)" <sandra.connelly@nasa.gov>

Cc: Karen Feldstein <karen.c.feldstein@nasa.gov>

Subject: Unidentified Aerial Phenomena

Happy New Year Sandra and Karen!

There's been a lot of media discussion lately about UFO's, supported by 'leaked footage,' photos, etc. of things in LEO or well within earth's atmosphere. I imagine, at some point, NASA gets approached to validate and utilize our technologies/capabilities to monitor and/or analyze some of these claims. Who at NASA does this?

The Senate Intelligence Authorization Act for FY2021 directed an analysis of known incidents and a plan to report these phenomenon in the future. I imagine this will become an inter-agency effort.

V/r,

Randy

Randy Cruz

Senior Advisor to the Administrator

NASA Headquarters

Office: (202) 358-1445

Cell: (b) (6)



## Re: Unidentified Aerial Phenomena

---

From: Feldstein, Karen C. (HQ-TA000) <karen.c.feldstein@nasa.gov>  
To: Cruz, Randy C. (HQ-AA000)[Affiliate] <randy.c.cruz@nasa.gov>, Connelly, Sandra (HQ-DA000) <sandra.connelly@nasa.gov>, Gold, Michael N. (HQ-AA000) <michael.n.gold@nasa.gov>  
Sent: January 4, 2021 1:54:43 PM EST  
Received: January 4, 2021 1:54:44 PM EST

Hi Randy, looping in Mike as well.

Thanks,

Karen

From: "Cruz, Randy C. (HQ-AA000)[Affiliate]" <randy.c.cruz@nasa.gov>  
Date: Monday, January 4, 2021 at 1:50 PM  
To: "Connelly, Sandra (HQ-DA000)" <sandra.connelly@nasa.gov>  
Cc: Karen Feldstein <karen.c.feldstein@nasa.gov>  
Subject: Unidentified Aerial Phenomena

Happy New Year Sandra and Karen!

There's been a lot of media discussion lately about UFO's, supported by 'leaked footage,' photos, etc. of things in LEO or well within earth's atmosphere. I imagine, at some point, NASA gets approached to validate and utilize our technologies/capabilities to monitor and/or analyze some of these claims. Who at NASA does this?

The Senate Intelligence Authorization Act for FY2021 directed an analysis of known incidents and a plan to report these phenomenon in the future. I imagine this will become an inter-agency effort.

V/r,

Randy

Randy Cruz

Senior Advisor to the Administrator

NASA Headquarters

Office: (202) 358-1445

Cell: (b) (6)

## RE: Unidentified Aerial Phenomenon

---

From: Lal, Bhavya (HQ-IA000) <bhavya.lal@nasa.gov>  
To: Cruz, Randy C. (HQ-AA000)[Affiliate] <randy.c.cruz@nasa.gov>  
Sent: May 19, 2021 12:32:58 PM EDT  
Received: May 19, 2021 12:32:59 PM EDT

Thanks Randy! bhavya.lal@nasa.gov

I will check my email after I hear from you .

From: Cruz, Randy C. (HQ-AA000)[Affiliate] <randy.c.cruz@nasa.gov>  
Sent: Wednesday, May 19, 2021 12:31 PM  
To: Lal, Bhavya (HQ-IA000) <bhavya.lal@nasa.gov>  
Subject: Unidentified Aerial Phenomenon

Bhavya,

Took me a while to dig into my mental archive, but Dr. Jay Stratton from ONI is the one who put together the original congressionally mandated brief. I have the brief on JWICS and can forward to you tomorrow when I come into the SCIF.

V/r,

Randy

Randy Cruz

Senior Advisor to the Administrator

NASA Headquarters

Office: (202) 358-1445

Cell: (b) (6)

## Recall: UAP taskforce NASA partners

---

From: Cruz, Randy C. (HQ-AA000)[Affiliate] </O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=FE606AD0FF7A47E09D3C9543390219 F5-CRUZ, RANDY>  
To: (b) (6)  
Sent: June 9, 2021 12:15:14 PM EDT  
Received: June 9, 2021 12:15:14 PM EDT

Cruz, Randy C. (HQ-AA000)[Affiliate] would like to recall the message, "UAP taskforce NASA partners".

SIPR address

Referred to Department of Navy

From: Cruz, Randy C. (HQ-AA000)[Affiliate] <randy.c.cruz@nasa.gov>

Sent: Thursday, December 10, 2020 9:17 AM

To: Castelein, Carey F CAPT USN ASSTSECNAV RDA DC (USA) <(b) (6)>

Subject: [Non-DoD Source] RE: [EXTERNAL] Contact Information - UAP

CC,

I've got meetings this morning, can I call you around noon?

V/r,

Sock

Randy Cruz

SIPR address

CAPT USN

Senior Advisor to the Administrator

NASA Headquarters

Office: (202) 358-1445

Cell: (b) (6)

Referred to Department of Navy

# Referred to Department of Navy

From: Cruz, Randy C. (HQ-AA000)[Affiliate] <randy.c.cruz@nasa.gov>

Sent: Tuesday, December 1, 2020 11:23 AM

To: Baron, Jonathan Louis (Red) CAPT USN COMNAVAIRSYSCOM PAX (USA) <(b) (6)>

Cc: Castelein, Carey F CAPT USN ASSTSECNAV RDA DC (USA) <(b) (6)> Byers, Gregory D  
CAPT USN COMNAVAIRSYSCOM PAX (USA) <(b) (6)>

Subject: [Non-DoD Source] RE: [EXTERNAL] Contact Information - UAP

Red,

I mostly telework, but I do go into the office from time to time, especially for the classified work. While teleworking and (b) (6) I can be reached on:

Personal cell: (b) (6)

Work cell: (b) (6)

While the list is dwindled down, should I be selected, I respectfully request a coordinated conversation with VADM Moran/Peters (whoever is selecting) and my current boss, Jim Bridenstine (NASA Administrator). I think it is fair to

manage expectations as Administrator Bridenstine has an approved request for my current extension at the NASA HQ through Aug 2021. He can be reached at (202) 384-5000.

What kind of timeline are we looking at? And are we looking at PCS or TDY tasking?

V/r,

Randy

Randy Cruz

CAPT USN

Senior Advisor to the Administrator

NASA Headquarters

Office: (202) 358-1445

Cell: (b) (6)

Referred to Department of Navy





## Talking Points on UAP Report

---

From: Meidinger, Jolene A. (HQ-TH000) <jolene.meidinger@nasa.gov>  
To: Fox, Karen C. (HQ-1300) <karen.c.fox@nasa.gov>  
Cc: Cruz, Randy C. (HQ-AA000)[Affiliate] <randy.c.cruz@nasa.gov>  
Sent: June 25, 2021 11:19:37 AM EDT  
Received: June 25, 2021 11:19:38 AM EDT

Hi Karen,

In anticipation of the UAP Report release, the Administrator is requesting more information. I mentioned to Randy that you had prepared a package of talking points. Can you share a copy with him?

Thank you,

Jolene

Jolene A. Meidinger

Interagency Liaison

Office of International and Interagency Relations

NASA Headquarters (5Y41)

Office: 202-358-3880

Cell: (b) (6)

jolene.meidinger@nasa.gov

SIPR: (b) (6), (b) (7)(C)

JWICS: (b) (6), (b) (7)(C)

## **UAP brief in your JWICS acct**

---

From: Cruz, Randy C. (HQ-AA000)[Affiliate] </O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=FE606AD0FF7A47E09D3C9543390219 F5-CRUZ, RANDY>  
To: Lal, Bhavya (HQ-IA000) <bhavya.lal@nasa.gov>  
Sent: May 20, 2021 10:37:30 AM EDT  
Received: May 20, 2021 10:37:00 AM EDT

Bhavya,

The brief should be in your email now. Let me know if you have any questions.

V/r,

Randy

Randy Cruz

Senior Advisor to the Administrator

NASA Headquarters

Office: (202) 358-1445

Cell: (b) (6)

## UAP brief

---

From: Cruz, Randy C. (HQ-AA000)[Affiliate] </O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=FE606AD0FF7A47E09D3C9543390219 F5-CRUZ, RANDY>  
To: Etkind, Marc R. (HQ-NA000) <marc.r.etkind@nasa.gov>, Jacobs, Bob (HQ-NA000) <bob.jacobs@nasa.gov>  
Sent: June 8, 2021 12:24:13 PM EDT  
Received: June 8, 2021 12:24:00 PM EDT

Gents,

I tried to send (b) (7)(C), (b) (6)

[REDACTED]

[REDACTED]

[REDACTED].

When your schedule allows, I can bring you two into the SCIF on the 6th floor and go over the brief with you. Let me know your availability and I'll have it set up. Today would be great, if you can squeeze it in. Shouldn't take more than 15 min.

V/r,  
Randy

Randy Cruz

Senior Advisor to the Administrator

NASA Headquarters

Office: (202) 358-1445

Cell: (b) (6)

## UAP brief

---

From: Cruz, Randy C. (HQ-AA000)[Affiliate] </O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=FE606AD0FF7A47E09D3C9543390219 F5-CRUZ, RANDY>  
To: Gold, Michael N. (HQ-AA000) <michael.n.gold@nasa.gov>, Feldstein, Karen C. (HQ-TA000) <karen.c.feldstein@nasa.gov>, Meidinger, Jolene A. (HQ-TH000) <jolene.meidinger@nasa.gov>  
Sent: October 1, 2020 8:06:41 AM EDT  
Received: October 1, 2020 8:06:42 AM EDT

Mike,

Was looking forward to the classified version of this brief. Is it possible to get the slide deck sent to me this morning so I can review with Jim?

Sipr: (b) (7)(C), (b) (6)

Jwics: (b) (7)(C), (b) (6)

Randy

Randy Cruz

Senior Advisor to the Administrator

NASA Headquarters

randy.c.cruz@nasa.gov

Office: (202) 358-1445

Cell: (b) (6)

Are you available on Thursday, 10-11 am for a classified Unidentified Aerial Phenomena Task Force briefing? The Administrator requested that an invitation be extended to you and Gabe Sherman.

<https://www.defense.gov/Newsroom/Releases/Release/Article/2314065/establishment-of-unidentified-aerial-phenomena-task-force/>

## UAP messaging

---

From: Cruz, Randy C. (HQ-AA000)[Affiliate] </O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=FE606AD0FF7A47E09D3C9543390219 F5-CRUZ, RANDY>  
To: Feldstein, Karen C. (HQ-TA000) <karen.c.feldstein@nasa.gov>, Etkind, Marc R. (HQ-NA000) <marc.r.etkind@nasa.gov>  
Sent: June 8, 2021 1:29:48 PM EDT  
Received: June 8, 2021 1:29:00 PM EDT

Karen/Marc,

I understand that you two are working closely on the UAP messaging efforts and I don't want to stifle or confuse anything. I was preparing share an initial classified brief from the UAP Task Force that is dated from August 2020 with Marc. It might be OBE at the this point, but wanted to let you know that we can still do that if you desire. Let me know how I can help.

V/r,

Randy

Randy Cruz

Senior Advisor to the Administrator

NASA Headquarters

Office: (202) 358-1445

Cell: (b) (6)

## UAP messaging

---

To: Feldstein, Karen C. (HQ-TA000) <karen.c.feldstein@nasa.gov>, Etkind, Marc R. (HQ-NA000) <marc.r.etkind@nasa.gov>  
Sent: June 8, 2021 1:15:14 PM EDT  
Received: June 8, 2021 1:15:06 PM EDT

Karen/Marc,

Randy Cruz

Senior Advisor to the Administrator

NASA Headquarters

Office: (202) 358-1445

Cell: (b) (6)

## UAP Report

---

From: Etkind, Marc R. (HQ-NA000) <marc.r.etkind@nasa.gov>  
To: Cruz, Randy C. (HQ-AA000)[Affiliate] <randy.c.cruz@nasa.gov>  
Cc: McGuinness, Jackie (HQ-NA000) <jackie.mcguinness@nasa.gov>  
Sent: June 25, 2021 10:09:18 AM EDT  
Received: June 25, 2021 10:09:19 AM EDT

Hi Randy. With the UAP report coming out today, the Administrator would like some background on NASA involvement in the report. I understand our involvement was minimal and that this is a DOD report. That said. Any chance I can get some quick facts we can give him, including timing of our input and areas of discussion. Lmk if phone is easier. Thanks.



## UAP taskforce NASA partners

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From: Cruz, Randy C. (HQ-AA000)[Affiliate] </O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=FE606AD0FF7A47E09D3C9543390219 F5-CRUZ, RANDY>  
To: (b) (6)  
Sent: June 8, 2021 12:20:16 PM EDT  
Received: June 8, 2021 12:20:00 PM EDT

Hello Sir,

I came across a classified UAP TF brief that had your name on it, dated August 2020. NASA is named as a partner, but we're having difficulty identifying who exactly from NASA was working on this with your team. Any help you can provide is much appreciated; it will allow the NASA Administrator to have a better informed idea of who and how much contribution NASA has provided in this effort.

I can be reached on JWICS: (b) (7)(C), (b) (6) or if you like we can schedule a call and I can call you on TS VOIP.

We don't have many terminals, so if you send me any emails, I kindly request a NIPR heads up.

V/r,

Randy

Randy Cruz

Senior Advisor to the Administrator

NASA Headquarters

Office: (202) 358-1445

Cell: (b) (6)

## UAP taskforce NASA partners

---

To: (b) (6)  
Sent: June 8, 2021 12:13:33 PM EDT  
Received: June 8, 2021 12:13:20 PM EDT

Hello Sir,

I came across a classified UAP TF brief that had your name on it, dated August 2020. NASA is named as a partner, but we're having difficulty identifying who exactly from NASA was working on this with your team. As

Randy Cruz

Senior Advisor to the Administrator

NASA Headquarters

Office: (202) 358-1445

Cell: (b) (6)

## UAPTF meeting

---

From: Cruz, Randy C. (HQ-AA000)[Affiliate] </O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=FE606AD0FF7A47E09D3C9543390219 F5-CRUZ, RANDY>  
To: Massey, Natalie (HQ-AB000) <natalie.massey@nasa.gov>  
Sent: July 19, 2021 12:44:47 PM EDT  
Received: July 19, 2021 12:44:00 PM EDT

Natalie,

Was this ever scheduled with the contact that Margaret Kieffer was supposed to give you a couple weeks back?

V/r,

Randy

Randy Cruz

Senior Advisor to the Administrator

NASA Headquarters

Office: (202) 358-1445

Cell: (b) (6)

## Unidentified Aerial Phenomena

---

To: Connelly, Sandra (HQ-DA000) <sandra.connelly@nasa.gov>  
Cc: Feldstein, Karen C. (HQ-TA000) <karen.c.feldstein@nasa.gov>  
Sent: January 4, 2021 1:31:52 PM EST  
Received: January 4, 2021 1:48:44 PM EST

Happy New Year Sandra and Karen!

There's been a lot of media discussion lately about UFO's, supported by 'leaked footage,' photos, etc. of things in LEO or well within earth's atmosphere. I imagine, at some point, NASA gets approached to validate and utilize our technologies/capabilities to monitor and/or analyze some of these claims. Who at NASA does this?

There was a Senate Intelligence

Randy Cruz

Senior Advisor to the Administrator

NASA Headquarters

Office: (202) 358-1445

Cell: (b) (6)

## Unidentified Aerial Phenomena

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From: Cruz, Randy C. (HQ-AA000)[Affiliate] </O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=FE606AD0FF7A47E09D3C9543390219 F5-CRUZ, RANDY>  
To: Connelly, Sandra (HQ-DA000) <sandra.connelly@nasa.gov>  
Cc: Feldstein, Karen C. (HQ-TA000) </o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=7facbe2981604b49864d125c747cc257-FELDSTEIN,>  
Sent: January 4, 2021 1:50:32 PM EST  
Received: January 4, 2021 1:50:00 PM EST

Happy New Year Sandra and Karen!

There's been a lot of media discussion lately about UFO's, supported by 'leaked footage,' photos, etc. of things in LEO or well within earth's atmosphere. I imagine, at some point, NASA gets approached to validate and utilize our technologies/capabilities to monitor and/or analyze some of these claims. Who at NASA does this?

The Senate Intelligence Authorization Act for FY2021 directed an analysis of known incidents and a plan to report these phenomenon in the future. I imagine this will become an inter-agency effort.

V/r,

Randy

Randy Cruz

Senior Advisor to the Administrator

NASA Headquarters

Office: (202) 358-1445

Cell: (b) (6)

## Unidentified Aerial Phenomenon

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From: Cruz, Randy C. (HQ-AA000)[Affiliate] </O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=FE606AD0FF7A47E09D3C9543390219 F5-CRUZ, RANDY>  
To: Lal, Bhavya (HQ-IA000) <bhavya.lal@nasa.gov>  
Sent: May 19, 2021 12:31:20 PM EDT  
Received: May 19, 2021 12:31:00 PM EDT

Bhavya,

Took me a while to dig into my mental archive, but Dr. Jay Stratton from ONI is the one who put together the original congressionally mandated brief. I have the brief on JWICS and can forward to you tomorrow when I come into the SCIF.

V/r,

Randy

Randy Cruz

Senior Advisor to the Administrator

NASA Headquarters

Office: (202) 358-1445

Cell: (b) (6)

## untitled

---

From: Kieffer, Margaret (HQ-TH000) <margaret.kieffer@nasa.gov>  
To: Cruz, Randy C. (HQ-AA000)[Affiliate] <randy.c.cruz@nasa.gov>  
Sent: July 2, 2021 11:18:02 AM EDT  
Received: July 2, 2021 11:18:02 AM EDT

Have the UAP POC and am sending to Natalie to schedule.

## untitled

---

From: Kieffer, Margaret (HQ-TH000) <margaret.kieffer@nasa.gov>  
To: Cruz, Randy C. (HQ-AA000)[Affiliate] <randy.c.cruz@nasa.gov>  
Sent: January 13, 2021 1:49:11 PM EST  
Received: January 13, 2021 1:49:11 PM EST

Believe it or not, I have a quick UAP question, if you have 30 seconds.