National Aeronautics and Space Administration

Headquarters
Washington, DC 20546-0001

July 22, 2022

Reply to attn. of: Office of Communications

John Greenewald
27305 W. Live Oak Road, Suite 1203
Castaic, CA 91384

Re: NASA FOIA Tracking Number 22-HQ-F-00667

This is our final response to your Freedom of Information Act (FOIA) request to the National Aeronautics and Space Administration (NASA), dated June 22, 2022 and received in this office on June 23, 2022. Your request was assigned the above-referenced tracking number. You seek:

> I request a copy of records (which includes videos/photos), electronic or otherwise, of the following:
> ALL emails sent to/from, bcc'd or cc'd, NASA administrator Bill Nelson which contain the following keywords:
> "AOIMSG"
> and/or
> AOIMEXEC
> and/or
> "Unidentified Aerial"
> and/or
> "Unidentified Flying"
> and/or
> "UAP"
> and/or
> "UFO"
> and/or
> "Unidentified Spacecraft"
> and/or
> "Unidentified aircraft"
> PLEASE INCLUDE ALL ATTACHMENTS TO EMAILS FOUND.
>
> You may omit any newspaper articles that are publicly available, which do not contain commentary. Should the email have additional commentary including a newspaper, I ask that you please include those as responsive to this request.
> I agree to limit the timeframe to 6/7/2021 through to the date of processing this request.

Also, please ensure that all classified and unclassified records are searched.

In response to your request, we conducted a search of NASA's Office of Information Technology using the search terms provided in your request. That search 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:

92 page(s) are released in full (RIF);[1]
6 page(s) are released in part (RIP);

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

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 conference call-in numbers and associated bridge passcodes, internal publications, employee bulletins or announcements.

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 e-mail addresses.

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

Exemption 7(E) protects all law enforcement information that "would disclose techniques and procedures for law enforcement investigation or prosecution, or would disclose guidelines for law enforcement investigations or prosecution if such disclosure could reasonably be expected to risk circumvention of the law." 5 U.S.C. § 552(b)(7)(E). NASA invokes Exemption 7(E) to protect an email inbox connected to a list of employee email addresses. NASA determined that releasing this inbox email address could compromise NASA's critical infrastructure. It could also obstruct the ability of NASA's Information Technology Office to protect its systems from malicious attacks or intrusions. While we are not releasing the employees email addresses from the enclosed records, you may access phone numbers and email addresses for NASA Headquarters and its Centers online at www.nasa.gov.

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.

[1] All page counts are approximate numbers.

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

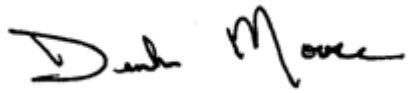
If you have any questions, please feel free to contact me at derek.m.moore@nasa.gov or (202) 358-2681. For further assistance and to discuss any aspect of your request you may also contact:

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

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; 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,



Derek Moore
Government Information Specialist

Enclosure(s)

Unidentified Aerial Phenomenon Meeting

From:	Nelson, Bill (HQ-AA000) </O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=3FA5333A4119409284AC2C5CF0B8534D-NELSON, C W>
To:	kayla.r.ratnasamy@nasa.gov
Sender:	Ratnasamy, Kayla R. (HQ-AA000) </O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=5ECCDC78F2064815A597591B357570F1-RATNASAMY,>
Sent:	March 29, 2022 11:15:34 AM EDT
Received:	March 29, 2022 11:15:34 AM EDT
Attachments:	Unidentified Aerial Phenomenon Meeting

Attachment

1. Unidentified Aerial Phenomenon Meeting

Type:	text/calendar
Size:	732 bytes

Attachment #1

Unidentified Aerial Phenomenon Meeting

Unidentified Aerial Phenomenon Meeting

From:	Nelson, Bill (HQ-AA000) </O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=3FA5333A4119409284AC2C5CF0B8534D-NELSON, C W>
To:	kayla.r.ratnasamy@nasa.gov
Sender:	Ratnasamy, Kayla R. (HQ-AA000) </O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=5ECCDC78F2064815A597591B357570F1-RATNASAMY,>
Sent:	April 5, 2022 8:58:54 AM EDT
Received:	April 5, 2022 8:58:54 AM EDT
Attachments:	Unidentified Aerial Phenomenon Meeting

Attachment

1. Unidentified Aerial Phenomenon Meeting

Type:	text/calendar
Size:	495 bytes

Attachment #1

Unidentified Aerial Phenomenon Meeting

[EXTERNAL] Pushing the Frontiers of Science with Government Data

From: Avi Loeb <aloeb@cfa.harvard.edu>
To: bill.nelson@nasa.gov, Nelson, Bill (HQ-AA000) <bill.nelson@nasa.gov>

Sent: May 11, 2022 7:14:03 PM EDT
Received: May 11, 2022 7:14:22 PM EDT

https://avi-loeb.medium.com/pushing-the-frontiers-of-science-with-government-data-318fb08c00fc <https://gcc02.safelinks.protection.outlook.com/?url=https://avi-loeb.medium.com/pushing-the-frontiers-of-science-with-government-data-318fb08c00fc&data=05|01|bill.nelson@nasa.gov|f7760d184df243b9d13408da33a3fa91|7005d45845be48ae8140d43da96dd17b|0|0|637879076624402450|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0=|3000|||&sdata=Kz4GBE9gmGBqj83/7Rt/Q+3c2zk+Mk9hg11i/0zl2Ow=&reserved=0>

In the late 1960s, the United States Government (USG) launched the Vela satellites to detect high-energy radiation, also known as…

<https://gcc02.safelinks.protection.outlook.com/?url=https://medium.com/@avi-loeb?source=email-adb0e108a94b-1652290385964-newsletter.subscribeToProfile----------c0e6d2fe_d807_4fee_880d_c273199d0522&data=05|01|bill.nelson@nasa.gov|f7760d184df243b9d13408da33a3fa91|7005d45845be48ae8140d43da96dd17b|0|0|637879076624402450|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0=|3000|||&sdata=Wu+bwcJ02MWvMX230MyKiE5MThRe3PQT20RnRL+ynJ4=&reserved=0>

Avi Loeb <https://gcc02.safelinks.protection.outlook.com/?url=https://medium.com/@avi-loeb?source=email-adb0e108a94b-1652290385964-newsletter.subscribeToProfile----------c0e6d2fe_d807_4fee_880d_c273199d0522&data=05|01|bill.nelson@nasa.gov|f7760d184df243b9d13408da33a3fa91|7005d45845be48ae8140d43da96dd17b|0|0|637879076624402450|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0=|3000|||&sdata=Wu+bwcJ02MWvMX230MyKiE5MThRe3PQT20RnRL+ynJ4=&reserved=0>

6 min read

View on Medium <https://gcc02.safelinks.protection.outlook.com/?url=https://medium.com/@undefined/318fb08c00fc?source=email-adb0e108a94b-1652290385964-newsletter.subscribeToProfile----------c0e6d2fe_d807_4fee_880d_c273199d0522&data=05|01|bill.nelson@nasa.gov|f7760d184df243b9d13408da33a3fa91|7005d45845be48ae8140d43da96dd17b|0|0|637879076624402450|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0=|3000|||&sdata=rhG47y5BVIkraT9zjhZZ2AGsMR/GlkmSGw5OKPqypwo=&reserved=0>

Pushing the Frontiers of Science with Government Data

Artist’s illustration of a gamma-ray burst (NASA/Swift/Cruz deWilde)

In the late 1960s <https://gcc02.safelinks.protection.outlook.com/?url=http://me.dm/r-vTVDA7Uz__?source=email-adb0e108a94b-1652290385964-newsletter.subscribeToProfile----------

c0e6d2fe_d807_4fee_880d_c273199d0522--------c9de49b8ef2b&data=05|01|bill.nelson@nasa.gov|f7760d184df243b9d13408da33a3fa91|7005d45845be48ae8140d43da96dd17b|0|0|637879076624402450|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0=|3000|||&sdata=gmgeBijhkmpYvabT2TgcSt04OX8i7A58W20VhD3KE+U=&reserved=0>, the United States Government (USG) launched the Vela satellites to detect high-energy radiation, also known as gamma-rays, emitted by nuclear weapons tested in space. The USG was concerned that the Soviet Union might attempt to conduct secret nuclear tests after signing the Partial Nuclear Test Ban Treaty <https://gcc02.safelinks.protection.outlook.com/?url=http://me.dm/r-dPJOGSS6XI?source=email-adb0e108a94b-1652290385964-newsletter.subscribeToProfile----------c0e6d2fe_d807_4fee_880d_c273199d0522--------c9de49b8ef2b&data=05|01|bill.nelson@nasa.gov|f7760d184df243b9d13408da33a3fa91|7005d45845be48ae8140d43da96dd17b|0|0|637879076624402450|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0=|3000|||&sdata=8BQKfkcwsQ3JvdD0Phd6vfZg/LPKexSt0uBVonL4/tI=&reserved=0> in 1963. On July 2, 1967, the Vela 3 and 4 satellites detected a flash of gamma-radiation unlike that expected from any known nuclear weapon. One can only imagine the alarm bells that sounded in Washington D.C. shortly after this detection. Uncertain of the implications, a research team at the Los Alamos National Laboratory led by Ray Klebesadel <https://gcc02.safelinks.protection.outlook.com/?url=http://me.dm/r-FJYsyVk1xJ?source=email-adb0e108a94b-1652290385964-newsletter.subscribeToProfile----------c0e6d2fe_d807_4fee_880d_c273199d0522--------c9de49b8ef2b&data=05|01|bill.nelson@nasa.gov|f7760d184df243b9d13408da33a3fa91|7005d45845be48ae8140d43da96dd17b|0|0|637879076624402450|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0=|3000|||&sdata=2Kl5vR52EmQu8fFdBuAA8pLTo0ObXx0cnjg5aLBSZ1g=&reserved=0>, filed the data for further analysis.

It would have been natural for USG officials to initially regard the unexpected gamma-ray flashes as a matter of national security. But as additional Vela satellites were launched with better instruments, the Los Alamos team continued to identify gamma-ray bursts <https://gcc02.safelinks.protection.outlook.com/?url=http://me.dm/r-AyZffVxSGb?source=email-adb0e108a94b-1652290385964-newsletter.subscribeToProfile----------c0e6d2fe_d807_4fee_880d_c273199d0522--------c9de49b8ef2b&data=05|01|bill.nelson@nasa.gov|f7760d184df243b9d13408da33a3fa91|7005d45845be48ae8140d43da96dd17b|0|0|637879076624558664|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0=|3000|||&sdata=brSHbUXZh0Dx8tEPln9AqFhIdi74n9E0fnzpDTv2JMc=&reserved=0> in their data. By analyzing the different arrival times of the bursts to different satellites, the team was able to rule out a terrestrial or even Solar-system origin. The data was not classified <https://gcc02.safelinks.protection.outlook.com/?url=http://me.dm/r-vTVDA7Uz__?source=email-adb0e108a94b-1652290385964-newsletter.subscribeToProfile----------c0e6d2fe_d807_4fee_880d_c273199d0522--------c9de49b8ef2b&data=05|01|bill.nelson@nasa.gov|f7760d184df243b9d13408da33a3fa91|7005d45845be48ae8140d43da96dd17b|0|0|637879076624558664|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0=|3000|||&sdata=JYYtDZPleBVbEVLsl4dNw884cCQwrdQrcWhTIuS25p0=&reserved=0> and the discovery was openly published in 1973 as an article in The Astrophysical Journal entitled “Observations of Gamma-Ray Bursts of Cosmic Origin <https://gcc02.safelinks.protection.outlook.com/?url=http://me.dm/r-d3USCZdjEd?source=email-adb0e108a94b-1652290385964-newsletter.subscribeToProfile----------c0e6d2fe_d807_4fee_880d_c273199d0522--------c9de49b8ef2b&data=05|01|bill.nelson@nasa.gov|f7760d184df243b9d13408da33a3fa91|7005d45845be48ae8140d43da96dd17b|0|0|637879076624558664|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0=|3000|||&sdata=ZuP0EP4SnlLzPqmswgxP4NdfCHJNFkZRCNuM0z3s38w=&reserved=0>”. It took a couple of decades before the cosmological distance scale of the bursts was established <https://gcc02.safelinks.protection.outlook.com/?url=http://me.dm/r-DDHF_s2ajb?source=email-adb0e108a94b-1652290385964-newsletter.subscribeToProfile----------c0e6d2fe_d807_4fee_880d_c273199d0522--------c9de49b8ef2b&data=05|01|bill.nelson@nasa.gov|f7760d184df243b9d13408da33a3fa91|7005d45845be48ae8140d43da96dd17b|0|0|637879076624558664|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0=|3000|||&sdata=axO7BeSNebVw3kif2DgJGJwMF7IiFYwCKP5yXKoUyEM=&reserved=0> through X-ray localization of GRB 970228 <https://gcc02.safelinks.protection.outlook.com/?url=http://me.dm/r-

c5yG4HDrPW?source=email-adb0e108a94b-1652290385964-newsletter.subscribeToProfile----------c0e6d2fe_d807_4fee_880d_c273199d0522--------c9de49b8ef2b&data=05|01|bill.nelson@nasa.gov|f7760d184df243b9d13408da33a3fa91|7005d45845be48ae8140d43da96dd17b|0|0|637879076624558664|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0=|3000|||&sdata=vH7/Ssgl4ChjFXuywetHbIONuBbrKGuXSN27lCUGkS8=&reserved=0> by the Italian satellite Beppo-SAX. The detection of afterglows at longer wavelengths indicated that the bursts originate from jets moving near the speed of light, which are generated either by the collapse of a massive star to a black hole, or during the merger of a neutron star with a black hole or another neutron star.

Next week, a subcommittee in the House of Representatives of the United States is scheduled <https://gcc02.safelinks.protection.outlook.com/?url=http://me.dm/r-em5hn9uwnf?source=email-adb0e108a94b-1652290385964-newsletter.subscribeToProfile----------c0e6d2fe_d807_4fee_880d_c273199d0522--------c9de49b8ef2b&data=05|01|bill.nelson@nasa.gov|f7760d184df243b9d13408da33a3fa91|7005d45845be48ae8140d43da96dd17b|0|0|637879076624558664|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0=|3000|||&sdata=SbmM4LwP0lh2BSNXzxhDMeW++zitqXWrCYLX1ItOA8M=&reserved=0> to hold the first open congressional hearing on unidentified aerial phenomena (UAP) in more than half a century. Based on the lesson learned from the history of gamma-ray bursts, my sincere hope is that the following question will be asked: “can we get the highest quality UAP data to scientists who will analyze it methodically and quantitatively?”

Personally, I would be delighted to engage my research team at Harvard University in a detailed analysis of such data, should the government be interested in sharing it openly. Science is guided by evidence. As for gamma-ray bursts, if the knowledge involves an extraterrestrial origin, then it should not be classified as a matter of national security but rather shared openly with the scientific community.

Last month, the USG demonstrated again that it is willing to advance the frontiers of scientific knowledge as in the case of gamma-ray bursts. On April 6, 2022, the United States Space Commandtweeted <https://gcc02.safelinks.protection.outlook.com/?url=http://me.dm/r-3xSEySg7ay?source=email-adb0e108a94b-1652290385964-newsletter.subscribeToProfile----------c0e6d2fe_d807_4fee_880d_c273199d0522--------c9de49b8ef2b&data=05|01|bill.nelson@nasa.gov|f7760d184df243b9d13408da33a3fa91|7005d45845be48ae8140d43da96dd17b|0|0|637879076624558664|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0=|3000|||&sdata=6SYJXkYxXmN+a0+kBZLPR4IeFg+jlz+ekoO6WVnr5KI=&reserved=0> a formal letter <https://gcc02.safelinks.protection.outlook.com/?url=http://me.dm/r-eN7ALKWB-f?source=email-adb0e108a94b-1652290385964-newsletter.subscribeToProfile----------c0e6d2fe_d807_4fee_880d_c273199d0522--------c9de49b8ef2b&data=05|01|bill.nelson@nasa.gov|f7760d184df243b9d13408da33a3fa91|7005d45845be48ae8140d43da96dd17b|0|0|637879076624558664|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0=|3000|||&sdata=HZ6JrkfG57rCvIrzC4z+pFKVVg6TuC71yd18XWSNfsY=&reserved=0> to NASA confirming that a meteor identified <https://gcc02.safelinks.protection.outlook.com/?url=http://me.dm/r-EYdafhJP9Z?source=email-adb0e108a94b-1652290385964-newsletter.subscribeToProfile----------c0e6d2fe_d807_4fee_880d_c273199d0522--------c9de49b8ef2b&data=05|01|bill.nelson@nasa.gov|f7760d184df243b9d13408da33a3fa91|7005d45845be48ae8140d43da96dd17b|0|0|637879076624558664|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0=|3000|||&sdata=1+rXStICvkqefyWWfmAMVR8sWnCnBuEJbcLss9N8Iuw=&reserved=0> in the CNEOS catalog <https://gcc02.safelinks.protection.outlook.com/?url=http://me.dm/r-EoF8XWzfiT?source=email-adb0e108a94b-1652290385964-newsletter.subscribeToProfile----------c0e6d2fe_d807_4fee_880d_c273199d0522--------c9de49b8ef2b&data=05|01|bill.nelson@nasa.gov|f7760d184df243b9d13408da33a3fa91|7005d45845be48ae8140d43da96dd17b|0|0|637879076624558664|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0=|3000|||&sdata=OgJjOvS8HHj1TG+dPu9GQot0CR3LnbEXu26d1Nj+2hw=&reserved=0> by my student Amir Siraj and me in 2019 as originating from outside the Solar system based on its high speed, is indeed interstellar. The meteor detection on January 8, 2014 predated the first reported interstellar object, `Oumuamua

<https://gcc02.safelinks.protection.outlook.com/?url=http://me.dm/r-Ei84mwIx_w?source=email-adb0e108a94b-1652290385964-newsletter.subscribeToProfile----------c0e6d2fe_d807_4fee_880d_c273199d0522--------c9de49b8ef2b&data=05|01|bill.nelson@nasa.gov|f7760d184df243b9d13408da33a3fa91|7005d45845be48ae8140d43da96dd17b|0|0|637879076624558664|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0=|3000|||&sdata=1/brltKpuaher3LT26oaJWjYYZ35iQ2PHHFH67xU/vs=&reserved=0>, by almost four years and should be recognized as the first massive interstellar object <https://gcc02.safelinks.protection.outlook.com/?url=http://me.dm/r-EYdafhJP9Z?source=email-adb0e108a94b-1652290385964-newsletter.subscribeToProfile----------c0e6d2fe_d807_4fee_880d_c273199d0522--------c9de49b8ef2b&data=05|01|bill.nelson@nasa.gov|f7760d184df243b9d13408da33a3fa91|7005d45845be48ae8140d43da96dd17b|0|0|637879076624558664|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0=|3000|||&sdata=1+rXStICvkqefyWWfmAMVR8sWnCnBuEJbcLss9N8Iuw=&reserved=0> ever discovered. The meteor paper <https://gcc02.safelinks.protection.outlook.com/?url=http://me.dm/r-Ho6IigzLKu?source=email-adb0e108a94b-1652290385964-newsletter.subscribeToProfile----------c0e6d2fe_d807_4fee_880d_c273199d0522--------c9de49b8ef2b&data=05|01|bill.nelson@nasa.gov|f7760d184df243b9d13408da33a3fa91|7005d45845be48ae8140d43da96dd17b|0|0|637879076624558664|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0=|3000|||&sdata=uN3OZU301ijt6ooFjNTnOLdv15ogwIFIRmHFtIDF4q4=&reserved=0> was initially doubted <https://gcc02.safelinks.protection.outlook.com/?url=http://me.dm/r-Av9kmLqZfF?source=email-adb0e108a94b-1652290385964-newsletter.subscribeToProfile----------c0e6d2fe_d807_4fee_880d_c273199d0522--------c9de49b8ef2b&data=05|01|bill.nelson@nasa.gov|f7760d184df243b9d13408da33a3fa91|7005d45845be48ae8140d43da96dd17b|0|0|637879076624558664|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0=|3000|||&sdata=rH+KIEkE2vHcOgI8plFZX7ysJmFF2Ba0UkM+vCUdokE=&reserved=0> because the uncertainties <https://gcc02.safelinks.protection.outlook.com/?url=http://me.dm/r-nEpp8KxcGy?source=email-adb0e108a94b-1652290385964-newsletter.subscribeToProfile----------c0e6d2fe_d807_4fee_880d_c273199d0522--------c9de49b8ef2b&data=05|01|bill.nelson@nasa.gov|f7760d184df243b9d13408da33a3fa91|7005d45845be48ae8140d43da96dd17b|0|0|637879076624558664|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0=|3000|||&sdata=pS1VVLa6xiNLOhyAky7OIoq+Fp/yZsq8HFV/7+jB6Aw=&reserved=0> in the velocity measurements were classified. With the release of the confirmation letter, the government advances scientific knowledge by confirming the interstellar origin of this so-called CNEOS-2014–01–08 meteor at the 99.999% confidence. We are currently planning an expedition <https://gcc02.safelinks.protection.outlook.com/?url=http://me.dm/r-m1rnaI1Rv4?source=email-adb0e108a94b-1652290385964-newsletter.subscribeToProfile----------c0e6d2fe_d807_4fee_880d_c273199d0522--------c9de49b8ef2b&data=05|01|bill.nelson@nasa.gov|f7760d184df243b9d13408da33a3fa91|7005d45845be48ae8140d43da96dd17b|0|0|637879076624558664|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0=|3000|||&sdata=NCCRcMovXdbXqSARtmyMtHgVgTPvE0x9wrmNWk8w8MA=&reserved=0> to scoop the ocean floor for the fragments of this first interstellar meteor, which predated the discovery `Oumuamua <https://gcc02.safelinks.protection.outlook.com/?url=http://me.dm/r-yHU2id2h37?source=email-adb0e108a94b-1652290385964-newsletter.subscribeToProfile----------c0e6d2fe_d807_4fee_880d_c273199d0522--------c9de49b8ef2b&data=05|01|bill.nelson@nasa.gov|f7760d184df243b9d13408da33a3fa91|7005d45845be48ae8140d43da96dd17b|0|0|637879076624558664|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0=|3000|||&sdata=sRjQ0hkhWXJ7U7TppJUBqXnD+TqqkppoqI6VYfXiaKA=&reserved=0> on October 19, 2017 by almost four years. From the fact that it disintegrated only in the lower atmosphere, we infer <https://gcc02.safelinks.protection.outlook.com/?url=http://me.dm/r-y1i20cu94C?source=email-adb0e108a94b-1652290385964-newsletter.subscribeToProfile----------c0e6d2fe_d807_4fee_880d_c273199d0522--------c9de49b8ef2b&data=05|01|bill.nelson@nasa.gov|f7760d184df243b9d13408da33a3fa91|7005d45845be48ae8140d43da96dd17b|0|0|637879076624558664|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0=|3000|||&sdata=DiSIRcGLiA0HxNwijWT319AwQMEYyt4DvEAsR3MS5z8=&reserved=0> that it was made of material tougher than iron <https://gcc02.safelinks.protection.outlook.com/?url=http://me.dm/r-smdZsrIpBb?source=email-adb0e108a94b-1652290385964-newsletter.subscribeToProfile----------

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c9de49b8ef2b&data=05|01|bill.nelson@nasa.gov|f7760d184df243b9d13408da33a3fa91|7005d45845be48ae8140d43
da96dd17b|0|0|637879076624558664|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6I
k1haWwiLCJXVCI6Mn0=|3000|||&sdata=4N3MRTTw+HSNw7BVIFKaR3yge7XwhRo9p/CeaZWXTVc=&reserved=0>.

The USG is naturally focused on terrestrial concerns involving adversarial nations. But when USG data of extraterrestrial nature is not shared openly, scientists like myself feel like the kid who realized that “the emperor has no clothes <https://gcc02.safelinks.protection.outlook.com/?url=http://me.dm/r-aIEmy1XS5b?source=email-adb0e108a94b-1652290385964-newsletter.subscribeToProfile----------
c0e6d2fe_d807_4fee_880d_c273199d0522--------
c9de49b8ef2b&data=05|01|bill.nelson@nasa.gov|f7760d184df243b9d13408da33a3fa91|7005d45845be48ae8140d43
da96dd17b|0|0|637879076624558664|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6I
k1haWwiLCJXVCI6Mn0=|3000|||&sdata=BiIN63yexyLD0elbZUt5DSYnq/ldgpO/+VAgj+nDj3Y=&reserved=0>” in the folktale written by the Danish author Hans Christian Andersen. Responding to anecdotal USG data about unexpected phenomena is as awkward as knitting clothes in real time when the emperor walks down the street.

As noted in the report <https://gcc02.safelinks.protection.outlook.com/?url=http://me.dm/r-7mYUMsYYyo?source=email-adb0e108a94b-1652290385964-newsletter.subscribeToProfile----------
c0e6d2fe_d807_4fee_880d_c273199d0522--------
c9de49b8ef2b&data=05|01|bill.nelson@nasa.gov|f7760d184df243b9d13408da33a3fa91|7005d45845be48ae8140d43
da96dd17b|0|0|637879076624558664|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6I
k1haWwiLCJXVCI6Mn0=|3000|||&sdata=N10Rrv4G4m7C7bEznDVHvRM8+x29HVN/XeHO5q5RIps=&reserved=0> from the Office of the Director of National Intelligence on June 25, 2021, UAP data is rarely discussed openly because “Sociocultural stigmas and sensor limitations remain obstacles to collecting data on UAP… reputational risk may keep many observers silent, complicating scientific pursuit of the topic.”

The responsible approach of scientists should be to attend to new evidence as unusual as it might be, and adapt to its implications irrespective of how challenging they are. It is common practice for experts to raise dust and claim that they cannot see anything. After all, they are being rewarded for mastering knowledge from past data and not for their willingness to admit ignorance on new facts.

What we regard as “ordinary” are things we are used to seeing. Such things include birds in the sky. But digging deeper into the nature of ordinary matters suggests that they are rather extraordinary. Humans were only able to imitate birds with the Wright brothers’ first flight <https://gcc02.safelinks.protection.outlook.com/?url=http://me.dm/r-mtFQSBENj4?source=email-adb0e108a94b-1652290385964-newsletter.subscribeToProfile----------
c0e6d2fe_d807_4fee_880d_c273199d0522--------
c9de49b8ef2b&data=05|01|bill.nelson@nasa.gov|f7760d184df243b9d13408da33a3fa91|7005d45845be48ae8140d43
da96dd17b|0|0|637879076624558664|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6I
k1haWwiLCJXVCI6Mn0=|3000|||&sdata=r6OtaeID1kAt7+qHGiJdwmaZgdA5Yhjt7xB9GCCIA6Y=&reserved=0> in 1903. Similarly, what we regard as “extraordinary claims” is often based on societal conventions. We invest major funds in the search for the nature of dark matter that has minimal impact on our society, but minimal funds on the scientific study of UAP which could be much more impactful. As a result, the lack of “extraordinary evidence” is often self-inflicted ignorance. We might figure out the nature of UAP before we understand dark matter, if we would only be brave enough to collect and analyze UAP data publicly, based on the scientific method.

The common goal of all humans, including the USG and the scientific community, should be to eliminate the term “unidentified” from our lexicon. Much of the history of physics is about the pursuit of knowledge about items that initially appear “extraordinary” and later become “ordinary”. Quantum entanglement appeared <https://gcc02.safelinks.protection.outlook.com/?url=http://me.dm/r-wMmUHOza02?source=email-adb0e108a94b-1652290385964-newsletter.subscribeToProfile----------c0e6d2fe_d807_4fee_880d_c273199d0522--------
c9de49b8ef2b&data=05|01|bill.nelson@nasa.gov|f7760d184df243b9d13408da33a3fa91|7005d45845be48ae8140d43

da96dd17b|0|0|637879076624558664|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0=|3000|||&sdata=xkJKit2VH3gv8e6g2S6qB7HdlHffIrZDbPkFDJUr++U=&reserved=0> to Albert Einstein as extraordinary <https://gcc02.safelinks.protection.outlook.com/?url=http://me.dm/r-WnzNTfPjiL?source=email-adb0e108a94b-1652290385964-newsletter.subscribeToProfile----------c0e6d2fe_d807_4fee_880d_c273199d0522--------c9de49b8ef2b&data=05|01|bill.nelson@nasa.gov|f7760d184df243b9d13408da33a3fa91|7005d45845be48ae8140d43da96dd17b|0|0|637879076624558664|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0=|3000|||&sdata=mUyFXaicl9Sm0Iyiv4kNbzSSrl6/d2EJsTVgBnN3Ipo=&reserved=0>, but is now part of the daily vocabulary of engineers designing quantum computers. The notion of non-universal space and time in Einstein's General Relativity was initially disruptive to the mainstream view of the physics community, but is now employed for precise navigation by taxi-drivers who routinely use Global Positioning Systems <https://gcc02.safelinks.protection.outlook.com/?url=http://me.dm/r-V5uFc0ey-2?source=email-adb0e108a94b-1652290385964-newsletter.subscribeToProfile----------c0e6d2fe_d807_4fee_880d_c273199d0522--------c9de49b8ef2b&data=05|01|bill.nelson@nasa.gov|f7760d184df243b9d13408da33a3fa91|7005d45845be48ae8140d43da96dd17b|0|0|637879076624558664|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0=|3000|||&sdata=AclZkslIy5bMVTqYQfux0MuzPwYkVu7hXUfS3mLfXTw=&reserved=0>.

We should seek evidence-based knowledge without being boxed by our egos, emotions or national security traps. This is my wish for the Congressional hearing next week.

Here's hoping that the USG will continue to advance the scientific frontiers of our knowledge. Future cooperation between government and science will help us understand the unknown. And exploring the unknown is the spiritual light that illuminates our journey in search for knowledge on destinations far away from the familiar rock we call Earth.

ABOUT THE AUTHOR

Avi Loeb is the head of the Galileo Project, founding director of Harvard University's—Black Hole Initiative, director of the Institute for Theory and Computation at the Harvard-Smithsonian Center for Astrophysics, and the former chair of the astronomy department at Harvard University (2011–2020). He chairs the advisory board for the Breakthrough Starshot project, and is a former member of the President's Council of Advisors on Science and Technology and a former chair of the Board on Physics and Astronomy of the National Academies. He is the bestselling author of "Extraterrestrial: <https://gcc02.safelinks.protection.outlook.com/?url=http://me.dm/r-Ei84mwIx_w?source=email-adb0e108a94b-1652290385964-newsletter.subscribeToProfile----------c0e6d2fe_d807_4fee_880d_c273199d0522--------c9de49b8ef2b&data=05|01|bill.nelson@nasa.gov|f7760d184df243b9d13408da33a3fa91|7005d45845be48ae8140d43da96dd17b|0|0|637879076624558664|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0=|3000|||&sdata=1/brltKpuaher3LT26oaJWjYYZ35iQ2PHHFH67xU/vs=&reserved=0>The First Sign of Intelligent Life Beyond Earth <https://gcc02.safelinks.protection.outlook.com/?url=http://me.dm/r-Ei84mwIx_w?source=email-adb0e108a94b-1652290385964-newsletter.subscribeToProfile----------c0e6d2fe_d807_4fee_880d_c273199d0522--------c9de49b8ef2b&data=05|01|bill.nelson@nasa.gov|f7760d184df243b9d13408da33a3fa91|7005d45845be48ae8140d43da96dd17b|0|0|637879076624558664|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0=|3000|||&sdata=1/brltKpuaher3LT26oaJWjYYZ35iQ2PHHFH67xU/vs=&reserved=0>" and a co-author of the textbook "Life in the Cosmos <https://gcc02.safelinks.protection.outlook.com/?url=http://me.dm/r-nVUotn4yw6?source=email-adb0e108a94b-1652290385964-newsletter.subscribeToProfile----------c0e6d2fe_d807_4fee_880d_c273199d0522--------c9de49b8ef2b&data=05|01|bill.nelson@nasa.gov|f7760d184df243b9d13408da33a3fa91|7005d45845be48ae8140d43da96dd17b|0|0|637879076624558664|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0=|3000|||&sdata=pWsM+t0tRT4BjK6txQKTDoMOKv1i/IvbKs2xX6LfLaE=&reserved=0>", both published in 2021.

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WEEKLY MESSAGING & NASA INTERVIEW PREP DOCUMENT - as of 5-27-22 (internal distribution only)

From: Beutel, Allard (HQ-NA000) <allard.beutel@nasa.gov>
Sent: May 28, 2022 12:36:53 AM EDT
Received: May 28, 2022 12:37:40 AM EDT
Attachments: NASA INTERVIEW PREP DOCUMENT - as of 5-27-22.docx

Good evening, attached is the latest weekly messaging and NASA interview prep document.

UPCOMING SCHEDULED/EXPECTED KEY EVENTS WEEK OF MAY 29

• NASA SpaceX CRS-25 Preview Public/Media Briefing

• Spacesuit Announcement

OTHER RECENT HOT TOPICS

• Unidentified Aerial Phenomena and NASA (new)

• Crew Dragon Heat Shield Reported Issue (new)

• President Biden: NASA to Welcome Japanese Astronaut Aboard Gateway (new)

• Artemis I Status <https://blogs.nasa.gov/artemis/2022/05/06/artemis-i-rocket-spacecraft-prepare-for-return-to-launch-pad-to-finish-test/> (updated)

• NASA’s Boeing Orbital Flight Test-2 Mission (updated)

• CAPSTONE Lunar CubeSat Update (updated)

The Upcoming Events Public Dates section also is updated.

-Allard

Attachment

1. NASA INTERVIEW PREP DOCUMENT - as of 5-27-22.docx

Type:	application/vnd.openxmlformats-officedocument.wordprocessingml.document
Size:	62 KB (64,202 bytes)

Attachment #1

NASA INTERVIEW PREP DOCUMENT - as of 5-27-22.docx

Original view

14 pages (displayed on pages 4 to 17)

INTERNAL DISTRIBUTION ONLY
Updated 5/27/22

NASA INTERVIEW PREP DOCUMENT

Quick Reference

Upcoming Events
Public Dates

UPCOMING SCHEDULED/EXPECTED KEY EVENTS WEEK OF MAY 29

- **NASA SpaceX CRS-25 Preview Public/Media Briefing**
- **Spacesuit Announcement**

NASA SpaceX CRS-25 Preview Public/Media Briefing

NASA will host a media teleconference at 1 p.m. EDT Thursday, June 2, to discuss the hardware, technology demonstrations, and science experiments, including a new climate research investigation, headed to the International Space Station aboard SpaceX's 25th (CRS-25) commercial resupply mission for NASA. Audio of the teleconference will be streamed live on the agency's website.

NASA explores the unknown in air and space, innovates for the benefit of humanity, and inspires the world through discovery.

- SpaceX is targeting Thursday, June 9 at 10:45 a.m. EDT to launch its cargo Dragon spacecraft on a Falcon 9 rocket from Launch Complex 39A at NASA's Kennedy Space Center in Florida.
- One of the primary payloads aboard the cargo flight is the Earth Surface Mineral Dust Source Investigation or EMIT.
    - This new tool will identify the composition of mineral dust from Earth's arid regions and analyze dust carried through the atmosphere from deserts to see what effects it has on the planet, further advancing NASA's data contributions to monitoring climate change.
- The briefing also will highlight experiments studying:
    - the aging of immune cells and the potential to reverse those effects during post-flight recovery
    - an investigation of how sutured wounds heal in microgravity
    - and a student experiment testing a concrete alternative for potential use in future lunar and Martian habitats.
- Cargo resupply from U.S. companies ensures a national capability to deliver critical science research to the space station, significantly increasing NASA's ability to conduct new investigations at the only laboratory in space.
- The International Space Station is a convergence of science, technology, and human innovation that demonstrates new technologies and enables research not possible on Earth. NASA recently celebrated 21 years of continuous human presence aboard the orbiting laboratory, which has hosted 258 people and a variety of international and commercial spacecraft. The space station remains the springboard to NASA's next great leaps in exploration, including future human missions to the Moon and eventually to Mars.

NASA to Announce Next Generation Spacesuits for Moonwalking, Spacewalking

NASA will announce at 2 p.m. EDT (1 p.m. CDT) Wednesday, June 1, the company, or companies, selected to move forward in developing the next generation of spacesuits for Artemis missions at the Moon and the International Space Station during an event at the agency's Johnson Space Center in Houston. The announcement will air live on NASA Television, the agency's website, and NASA app.

NASA explores the unknown in air and space, exploring at the Moon with the agency's Artemis program and then sending astronaut on to Mars.

- New spacesuits that allow humans to explore the lunar surface and unlock new spacewalk capabilities outside the International Space Station are a critical part of advancing human exploration in space and demonstrating continued American leadership.
- Under Artemis, new exploration spacesuits, together with human surface mobility systems, the Space Launch System rocket, the Orion Spacecraft, ground systems, Gateway lunar orbiting outpost, and human landing systems, will enable NASA to return humans to and establish a long-term astronaut presence at the Moon and to eventually explore Mars.
- June 1 announcement participants include:
    - Vanessa Wyche, director, NASA Johnson Space Center
    - Lindsay Aitchison, program executive for Extravehicular Activity and Human Surface Mobility Program
    - Lara Kearney, manager, Extravehicular Activity and Human Surface Mobility Program
    - Joel Montalbano, program manager, International Space Station

OTHER RECENT HOT TOPICS

Unidentified Aerial Phenomena and NASA

Media began reporting May 23 that NASA is in the process of establishing its own official Unidentified Aerial Phenomena (UAP) office to perform a similar function to the U.S. Department of Defense's UAP Task Force. Below is our public response:

- NASA has consulted with multiple government entities regarding how to apply the tools of science to shed light on the nature and origin of unidentified aerial phenomena – information that is important to the agency for a scientific perspective. The limited number of high-quality observations of UAPs, which includes reported objects that cannot be immediately identified by individuals, currently makes it impossible to draw scientific conclusions about the nature of UAPs.

  NASA is evaluating how to provide our expertise in space-based Earth observations to improve understanding of UAPs.
- If asked:
    - The agency has no plans to stand up an office dedicated to this effort.
    - NASA is not part of the UAP Task Force led by the Department of Defense.
    - One of NASA's key goals is the search for life in the universe, however, the agency has yet to find any credible evidence of extraterrestrial life.

Crew Dragon Heat Shield Reported Issue

Media began reporting on May 23 that SpaceX's Axiom-1 Dragon spacecraft experienced a serious issue with its heat shield during reentry in April that could have had dangerous consequences for its crew members. Below is our response for NASA comment:

- The data associated with Dragon's recent crew reentries was normal – the system performed as designed without dispute. There has not been a hypergol leak during the return of a crewed Dragon mission nor any contamination with the heat shield causing excessive wear. SpaceX and NASA perform a full engineering review of the heat shield's thermal protection system following each return, including prior to the launch of the Crew-4 mission currently at the International Space Station. The heat shield composite structure (structure below the tile) was re-flown per normal planning and refurbishment processes. The thermal protection system on the primary heat shield for Crew-4 was new, as it has been for all human

spaceflight missions. SpaceX has only demonstrated reuse of selected PICA (Phenolic-Impregnated Carbon Ablator) tiles, which is a lightweight material designed to withstand high temperatures, as part of the heat shield on cargo flights.

NASA and SpaceX are currently in the process of determining hardware allocation for the agency's upcoming SpaceX Crew-5 mission, including the Dragon heat shield. SpaceX has a rigorous testing process to put every component and system through its paces to ensure safety and reliability. In early May, a new heat shield composite structure intended for flight on Crew-5 did not pass an acceptance test. The test did its job and found a manufacturing defect. NASA and SpaceX will use another heat shield for the flight that will undergo the same rigorous testing prior to flight.

Crew safety remains the top priority for both NASA and SpaceX and we continue to target September 2022 for launch of Crew-5.

President Biden: NASA to Welcome Japanese Astronaut Aboard Gateway
President Joe Biden and Japan's Prime Minister Fumio Kishida met in Tokyo May 23 where they announced progress on collaboration for human and robotic lunar missions.

NASA explores the unknown in air and space, leads worldwide partnerships, and explores at the Moon with the agency's Artemis program that will lead to sending astronauts on to Mars.

- President Biden and Japan's Prime Minister Fumio Kishida have confirmed their commitment to include a Japanese astronaut aboard the lunar Gateway outpost and their shared ambition to see a future Japanese astronaut land on the Moon as part of NASA's Artemis program.
- President Biden said: "In recent years, the alliance between Japan and the United States has grown stronger, deeper, and more capable as we work together to take on new challenges – just as important as the opportunities – of a rapidly changing world. A great example of this: We viewed Japan's lunar rover... a symbol of how our space cooperation is taking off, looking towards the Moon and to Mars. And I'm excited about the work we'll do together on the Gateway station around the Moon and look forward to the first Japanese astronaut joining us in the mission to the lunar surface under the Artemis program."
- The United States and Japan are working to formalize the Japanese astronaut's inclusion on Gateway through an Implementing Arrangement later this year.
- NASA Administrator Bill Nelson said: "Our shared ambition to see Japanese and American astronauts walk on the Moon together reflects our nations' shared values to explore space responsibly and transparently for the benefit of humanity here on Earth. With this historic announcement, President Biden is once again showing nations throughout the world that America will not go alone but with like-minded partners. Under Artemis, it's our intention to invest in and explore the cosmos with countries that promote science, economic opportunity, and a common set of shared values."
- As part of ongoing collaborations on space and Earth science missions, President Biden and Prime Minister Kishida reaffirmed the United States and Japan's continued cooperation on Earth science data sharing to improve scientific understanding of the Earth's changing climate.
- In addition, the president confirmed the United States' intention to provide Japan with a sample from the asteroid Bennu in 2023, collected from NASA's OSIRIS-REx mission. Japan provided the United States with an asteroid sample collected by the Japan Aerospace Exploration Agency's (JAXA) Hayabusa2 asteroid sample-return mission in 2021.

- JAXA also is critical partner to NASA in helping the agency achieve its goals in science and human exploration, including on the International Space Station and through the Artemis. In 2020, Japan became an original signatory of the Artemis Accords and finalized an agreement with NASA to provide several capabilities for Gateway's I-HAB, which will provide the heart of Gateway life support capabilities and additional space where crew will live, work, and conduct research during Artemis missions.
    - JAXA's planned contributions include I-HAB's environmental control and life support system, batteries, thermal control, and imagery components, which will be integrated into the module by ESA (European Space Agency) prior to launch. These capabilities are critical for sustained Gateway operations during crewed and uncrewed time periods.

Artemis I Status

NASA provided an update May 27 for the Artemis I flight test.

NASA explores the unknown in air and space, exploring at the Moon with the agency's Artemis program and then sending astronaut on to Mars.

- Latest update included information:
    - The Space Launch System (SLS) rocket and Orion spacecraft are targeted to return to launch pad 39B at NASA's Kennedy Space Center in Florida on June 6, for the next wet dress rehearsal attempt ahead of the Artemis I mission. First motion is currently slated for 12:01a, the morning of the 6th with tanking operations to begin no earlier than June 19
- NASA's lunar exploration program is called Artemis. Artemis missions will turn science fiction into science fact as we make new discoveries, advance technologies, and learn to live and work on another world.
- Wet dress rehearsal is the final major test of the integrated Space Launch System rocket and Orion spacecraft system before the Artemis I flight test launch.
- Artemis I is an uncrewed flight test, the first in a series of increasingly complex missions to the Moon in preparation for human missions to Mars. The flight test, targeted for no earlier than August, will allow NASA to check out rocket and spacecraft systems before crew fly aboard on Artemis II. NASA will target a more specific launch date after wet dress rehearsal.
- Prior to landing astronauts on the lunar surface, NASA is focused on the Artemis I uncrewed and Artemis II crewed flights around the Moon. Those missions, as well as a future uncrewed lander demonstration mission with SpaceX, will precede the Artemis III mission, when astronauts will land on the Moon for new scientific exploration.
- With Artemis missions, NASA will land the first woman and first person of color on the Moon, using innovative technologies to explore more of the lunar surface than ever before for the benefit of all. We will collaborate with commercial and international partners and establish the first long-term presence on the Moon. Then, we will use what we learn on and around the Moon to take the next giant leap: sending the first astronauts to Mars.

NASA's Boeing Orbital Flight Test-2 Mission

NASA's Boeing Orbital Flight Test-2 launched to the International Space Station May 19 and docked to the station May 20. The uncrewed OFT-2 Starliner spacecraft landed May 25.

NASA innovates for the benefit of humanity and inspires the world through discovery – increasing access to space and growing new commercial markets to serve NASA and all of America's interests through the work of NASA's Commercial Crew Program.

- NASA's Commercial Crew Program and our commercial industry partner, Boeing, are taking a major step on the path to more human spaceflight launches to the International Space Station on American rockets and spacecraft from American soil.
- NASA's Boeing Orbital Flight Test-2 (OFT-2) is the CST-100 Starliner's second uncrewed flight test and will dock to the International Space Station as part of NASA's Commercial Crew Program.
- The uncrewed OFT-2 flight will test a full mission profile, including end-to-end capabilities of Starliner and the United Launch Alliance's Atlas V rocket from launch to docking to a return to Earth in the desert of the western United States.
- OFT-2 will provide valuable data toward NASA certifying Boeing's crew transportation system.
- OFT-2 is the second orbital flight for the CST-100 Starliner, and the first for the second crew module in the Starliner fleet. Boeing proactively announced it would fly a second orbital test on its own cost to prove the Starliner system meets NASA's requirements, including docking to the space station.
- The Starliner carried more than 500 pounds of NASA cargo and crew supplies to the space station and returned to Earth with more than 600 pounds of cargo, including reusable Nitrogen Oxygen Recharge System (NORS) tanks that provide breathable air to station crew members.
- For more than 21 years, humans have continuously lived and worked aboard the International Space Station, advancing scientific knowledge and demonstrating new technologies that enable us to prepare for human exploration to the Moon and Mars. The station's design requires humans living aboard to maintain it, operate it, and upgrade it; thus, International Space Station operations, including commercial resupply and commercial crew, are essential to the mission.
- NASA is enabling economic growth in low-Earth orbit to open access to space to more people, more science, and more companies than ever before. With a robust economy in low-Earth orbit, in which NASA is one of many customers, it enables the agency to explore the Moon and Mars along with commercial and international partners.

CAPSTONE Lunar CubeSat Update

NASA hosted a news teleconference May 25 with partners Advanced Space and Rocket Lab for the CAPSTONE launch, scheduled for no earlier than June 6.

NASA explores the unknown in air and space, leads worldwide partnerships, and explores at the Moon with the agency's Artemis program that will lead to sending astronauts on to Mars.

- CAPSTONE will be the first spacecraft to demonstrate a unique lunar orbit intended for NASA's Gateway – a planned multipurpose outpost around the Moon that will provide essential support for long-term astronaut lunar missions as part of the Artemis program.
- CAPSTONE – short for the Cislunar Autonomous Positioning System Technology Operations and Navigation Experiment – is microwave oven-size CubeSat will serve as the first spacecraft to test a unique lunar orbit that has never been flown before. The orbit, formally known as a near rectilinear halo orbit (NRHO), is an elongated orbit located at a precise balance point between the gravities of Earth and the Moon.
- CAPSTONE will help reduce risk of future long-term deep space missions – like Gateway – by validating innovative navigation technologies and verifying the dynamics of this orbit.
- CAPSTONE's mission will demonstrate multiple technologies and lay a foundation for commercial support of future lunar operations.
- CAPSTONE will launch aboard a Rocket Lab's Electron rocket from the company's Launch Complex 1 in New Zealand and spend four-months traveling to the NRHO.

  - While this gravity-driven track takes longer to reach the Moon, it will dramatically reduce the amount of fuel this pathfinder CubeSat will need to fly there.
- NASA partners will test cutting-edge tools for mission planning and operations, paving the way and expanding opportunities for small and more affordable space and exploration missions to the Moon, Mars, and other destinations throughout the solar system.
- The CAPSTONE mission is built on the capabilities of American small businesses.
  - Many of the mission's small business partners have roots in the NASA Small Business Innovation Research / Small Business Innovation Research and Small Business Technology Transfer program.
- NASA Commercial Partners:
  - Advanced Space of Westminster, Colorado
  - Tyvak Nano-Satellite Systems, a Terran Orbital Corporation, of Irvine, California
  - Stellar Exploration, Inc. of San Luis Obispo, California
  - Rocket Lab of Long Beach, California
- CAPSTONE is expected to maintain its NRHO lunar orbit for approximately six months.

Webb Telescope Update

NASA provided a public update via a media teleconference May 9 about the progress toward preparing the agency's James Webb Space Telescope for science operations. The agency also provided this written update May 26. Webb launched Dec. 25, 2021, arrived at its orbit Jan. 24, 2022, and has been undergoing checks and preps for full operations.

NASA explores the unknown in air and space, solving mysteries of our solar system and beyond with great observatories, such the agency's Webb Telescope.

- NASA's Webb Telescope will explore every phase of cosmic history – from within the solar system to the most distant observable galaxies in the early universe, and everything in between. Participants in the May 9 media teleconference will discuss the recent completion of mirror alignment and preview what to expect for Webb's final months of science instrument preparations.
- NASA's James Webb Space Telescope is the largest space observatory and the most technically complex science mission NASA has ever built. It will be the world's premier space science observatory and explore every phase of 13.5 billion years of cosmic history, including our solar system, distant observable galaxies in the early universe, and everything in between.
  - Using its 21-foot (6.5 meter) mirror, Webb will see the light from the first galaxies that formed in the early universe and observe the birth of stellar systems.
  - Webb will explore distant worlds and study the atmospheres of planets orbiting other stars, known as exoplanets, searching for chemical fingerprints of habitability.
- Webb will help us understand the origins of the universe and our place in it.
- Webb is an international program led by NASA with its international agency partners, ESA (European Space Agency) and the Canadian Space Agency (CSA). The mission has been developed over two decades, with contributions from thousands of scientists, engineers, and other professionals from more than 14 countries and 29 U.S. states.
- Webb Mission Objectives: Webb's revolutionary technology will study every phase of cosmic history – from the first galaxies that formed after the big bang to newly discovered comets and moons in our solar system, and everything in space and time in between. With Webb, this rich cosmic history is now within our reach. Webb will enable the following:
  - Search for and discover some of the first galaxies in the universe, expanding our understanding of the early universe

  - Study galaxies near and far, young and old, to understand how galaxies assemble and change over time
  - Uncover the details of how stars and planets are born, by using infrared wavelengths to see through the massive clouds of dust that enshroud them
  - Reveal new details of planets, within our own solar system and beyond, to determine their formation and evolution and do comparative studies
- Webb represents NASA's largest international space science program, embodies NASA's values of teamwork and excellence, and will enable scientific breakthroughs we can't yet imagine.
- Webb has four science instruments: Near-Infrared Camera (NIRCam), Near-Infrared Spectrograph (NIRSpec), Mid-Infrared Instrument (MIRI), and Near-Infrared Imager and Slitless Spectrograph (NIRISS) with the Fine Guidance Sensor (FGS).
- Webb will complement the science achieved by other NASA space observatories, such as Hubble, Spitzer, and Chandra.
- If asked about the changing the telescope name: NASA's History Office conducted an exhaustive search through currently accessible archives on James Webb and his career. Our historians also talked to experts who previously researched this topic extensively. NASA found no evidence at this point that warrants changing the name of the telescope. The NASA Historian is wrapping up research from additional historical archives that were closed due to COVID-19. NASA plans to share information about the research after that is complete.

International Space Station U.S. Spacewalks Status
During a NASA news conference May 17, media asked about the status of U.S. spacewalks aboard the International Space Station following a situation with water in the helmet of an astronaut during a March spacewalk. NASA confirmed to reporters there won't be regularly scheduled spacewalks – only emergency ones, if needed – while the situation is investigated.

- After successfully completing a spacewalk March 23 at the International Space Station, a thin layer of moisture was discovered on the inner surface of the helmet and on an absorption pad inside ESA (European Space Agency) astronaut Matthias Maurer's helmet following airlock re-pressurization. The water found was more than normal. The space station crew expedited Maurer's helmet removal and then gathered data in coordination with ground support teams.

  The space station team is looking into the cause, and any possible fixes that might be needed. The station crew members remain in good health, and they are continuing their daily activities of science and maintenance. Key objectives were completed during the spacewalk, and there are no planned U.S operating segment spacewalks in the near future as a part of normal station operations.

  Crew safety is a top priority for NASA. The agency and our international partners are constantly identifying and mitigating risks of human spaceflight.

2022 Humans to Mars Summit / NASA's Moon to Mars Objectives
The 2022 Humans to Mars Summit took place at the George Washington University in Washington on May 17-19. NASA's participation included Administrator Bill Nelson.
NASA explores the unknown in air and space, exploring at the Moon with the agency's Artemis program and then sending astronaut on to Mars.

- NASA's long-term goal has always been to send humans to Mars – and we will use the Moon to help us get there. This is America's Moon to Mars exploration approach.
- NASA is working to understand and overcome the challenges with landing, living, and leaving Mars. By using what we learn on and around the Moon with Artemis, we will be ready to send the first humans to Mars by the late 2030s.
- Between the Perseverance rover and Ingenuity helicopter on Mars as well as planned robotic and human missions to the Moon under Artemis, NASA and our partners are opening the door to smarter, safer human missions to Mars.
- Mars remains our horizon goal for human exploration because it is the nearest habitable planet, is a rich destination for scientific discovery, and a driver for technologies to enable humans to travel and explore even farther into the solar system.
- NASA has studied multiple mission concepts for a first human mission to Mars and will continue to study different approaches as new technologies enter the market.
    - Although no decisions have been made, there is not yet a formal program, one of the concepts includes a 2- to- 3-year roundtrip journey using advanced propulsion to limit radiation exposure and other mission risks. This approach allows 30 sols (a Martian day, which is about 24 hours and 40 minutes long) on the Martian surface to conduct science, tech demonstrations, and search for life.
    - Earlier this month, NASA sponsored a "Science Objectives for Human Exploration of Mars" workshop.
- On May 17, NASA released a set of draft Moon to Mars objectives seeking comments from U.S. industry, our international partners, and our workforce. This approach allows NASA to be transparent about the agency's deep space exploration goals and strengthens the exploration strategy that America will continue to lead.

NASA-Funded Study Grows Plants in Moon Soil

For the first time, scientists have grown plants in Moon soil, which was collected by NASA's Apollo missions. The NASA-funded study was published May 12 in Communications Biology.

NASA explores the unknown in air and space, exploring at the Moon with the agency's Artemis program while we innovate for the benefit of humanity, improving life on Earth through research, such as this plant study.

- NASA Administrator Bill Nelson said:
    - "This research is critical to NASA's long-term human exploration goals as we'll need to use resources found on the Moon and Mars to develop food sources for future astronauts living and operating in deep space. This fundamental plant growth research is also a key example of how NASA is working to unlock agricultural innovations that could help us understand how plants might overcome stressful conditions in food-scarce areas here on Earth."
- For humans to thrive in in space, we'll need sustainable sources of food. This research helps us identify whether lunar regolith can be used to grow plants to sustain long-term human exploration on the Moon.
- It's important to do this fundamental research now so that we can better support crew health during upcoming Artemis missions.
- Space-relevant stressors – such as reduced gravity, altered atmosphere, radiation, sunlight exposure, and soil composition – can affect plant growth.
- Studying how plants grow in the extreme conditions of space could help us understand how they might adapt to stressful conditions on Earth and lead to agricultural innovations.

- NASA provided funding for this research and contributes to the University of Florida's space biology research program. NASA-supported research also contributed to the development of some of the approaches that were used in these experiments.

NASA Hosts Colombia Artemis Accords Signing Ceremony

NASA hosted an Artemis Accords signing ceremony May 10, at the agency's headquarters.

NASA inspires the world through discovery, leading worldwide partnerships, such as the Artemis Accords, aligned with our values and vision.

- During a ceremony at NASA Headquarters in Washington May 10, the Republic of Colombia became the 19th country to sign the Artemis Accords. NASA Deputy Administrator Pam Melroy participated in the signing ceremony for the agency and Vice President and Foreign Minister Marta Lucía Ramírez signed the Artemis Accords on behalf of Colombia.
- The Artemis Accords, signed by 19 countries so far, establish a practical set of principles to guide space exploration cooperation among nations participating in NASA's Artemis program.
- The Artemis Accords establish a practical set of principles to guide space exploration cooperation on and around the Moon among nations participating in the agency's 21st century lunar exploration plans.
- While NASA is leading Artemis, which includes sending the first woman and first person of color to the Moon, international partnerships will play a key role in achieving a sustainable and robust presence on the Moon later this decade while preparing to conduct a historic human mission to Mars.
- The Artemis Accords reinforce and implement the 1967 Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies, otherwise known as the Outer Space Treaty. They also reinforce the commitment by the U.S. and partner nations to the Registration Convention, the Agreement on the Rescue of Astronauts, and other norms of behavior that NASA and its partners have supported, including the public release of scientific data.
- The principles of the Artemis Accords are:
    - Peaceful Exploration: All activities conducted under Artemis must be for peaceful purposes
    - Transparency: Artemis Accords signatories will conduct their activities in a transparent fashion to avoid confusion and conflicts
    - Interoperability: Nations participating in the Artemis program will strive to support interoperable systems to enhance safety and sustainability
    - Emergency Assistance: Artemis Accords signatories commit to rendering assistance to personnel in distress
    - Registration of Space Objects: Any nation participating in Artemis must be a signatory to the Registration Convention or become a signatory with alacrity
    - Release of Scientific Data: Artemis Accords signatories commit to the public release of scientific information, allowing the whole world to join us on the Artemis journey
    - Preserving Heritage: Artemis Accords signatories commit to preserving outer space heritage
    - Space Resources: Extracting and utilizing space resources is key to safe and sustainable exploration and the Artemis Accords signatories affirm that such activities should be conducted in compliance with the Outer Space Treaty

  - Deconfliction of Activities: The Artemis Accords nations commit to preventing harmful interference and supporting the principle of due regard, as required by the Outer Space Treaty
  - Orbital Debris: Artemis Accords countries commit to planning for the safe disposal of debris
- NASA, in coordination with the U.S. Department of State, announced the establishment of the Artemis Accords in 2020. The Artemis Accords reinforce and implement the 1967 Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies, otherwise known as the Outer Space Treaty. They also reinforce the commitment by the United States and partner nations to the Registration Convention, the Agreement on the Rescue of Astronauts, and other norms of behavior that NASA and its partners have supported, including the public release of scientific data.
- Additional countries will join the Artemis Accords in the months and years ahead, as NASA continues to work with its international partners to establish a safe, peaceful, and prosperous future in space. Working with both new and existing partners will add new energy and capabilities to ensure the entire world can benefit from our journey of exploration and discovery.

NASA Fiscal Year 2023 Budget Proposal

On March 28, the White House released the Fiscal Year 2023 budget proposal and NASA Administrator Bill Nelson delivered the 2022 State of NASA address:

Exploring the secrets of the universe for the benefit of all.

- NASA Administrator Bill Nelson Statement on President's FY 2023 Budget Request from March 28:
  - "Greater than a number, statistic, or fact is what the president's budget request represents. This budget reflects the Biden administration's confidence in the extraordinary workforce that makes NASA the best place to work in the federal government. It's an investment in the businesses and universities that partner with NASA in all 50 states and the good-paying jobs they are creating. It's a signal of support for our missions in a new era of exploration and discovery."
- The $26 billion Fiscal Year 2023 budget request is 8% more than enacted federal spending levels from FY 2022.
- It represents the largest request for science funding in agency history.
- This budget request reflects the Biden-Harris Administration's confidence in the agency and its support for NASA's missions. It would allow NASA to fulfill the ambitions in its vision statement, "Exploring the secrets of the universe for the benefit of all," and its mission statement, "NASA explores the unknown in air and space, innovates for the benefit of humanity, and inspires the world through discovery."
- **This Budget Request Would Allow NASA to:**
  - **Keep NASA at the forefront of exploration and discovery through Artemis, Moon to Mars activities, and other efforts.** Through its leadership in exploration, science, technology and discovery, NASA has shaped innovation on a global scale. NASA's international partnerships create new possibilities for space and science agencies in other nations and bring new benefits to American researchers and explorers. This budget request will allow NASA to continue to expand the frontiers of innovation around the world.

  - **Address climate change.** For decades, NASA has worked to address climate change across its centers and offices, pursuing science that helps decision-makers and members of the public understand our changing planet and developing technology that will help society address this pressing challenge. This legacy leaves NASA well prepared to support President Biden's commitment to taking swift action on climate change.
  - **Promote diversity, equity, inclusion, and accessibility.** NASA is dedicated to promoting diversity, equity, inclusion, and accessibility in all aspects of its operations, including its workforce, its research grants, and the contracts and awards it issues. The agency also works to broaden participation among early career staff its and support career development for all employees.
  - **Provide opportunities in STEM.** This budget allows NASA to continue serving as a vital component to the nation's education system and an inspiration to the next generation of scientists, engineers, mathematicians, and explorers.
  - **Drive economic growth.** NASA stimulates local and regional economies in all 50 states, as well as the U.S. national economy through its investments in scientific research and technology, its contracts, the good-paying jobs it creates, and its collaborations with industry. The investments in this budget will go toward economic growth that benefits Americans.
- Some Key Numbers from the Budget Request
  - The budget provides $7.6 billion for deep space exploration that will enable missions on and around the Moon through Artemis while preparing for Mars exploration. Through Artemis missions, NASA will land the first woman and person of color on the lunar surface, deepen the United States' scientific understanding of the Moon, and test technologies that will allow humans to prepare for human exploration of Mars.
  - The budget includes $4.7 billion for Common Exploration Systems Development to support lunar missions includes funding for the Orion spacecraft and Space Launch System (SLS). No other rocket has the abilities of SLS to complete early Artemis missions. The budget's $1.5 billion for astronaut Moon landers will enable NASA to continue the development of the final mode of transportation needed to take astronauts to the lunar surface and allow NASA to increase competition in lunar landing capabilities.
  - The budget would increase NASA's Earth science funding for climate and weather monitoring and measurement, including $2.4 billion for Earth-observing satellites and related research. This will enhance NASA's ability to improve the world's understanding of climate change.
  - The budget's $1.4 billion for space technology research and development will support new technologies to help the commercial space industry grow, enhance mission capabilities, and reduce costs.
  - The budget would provide $970 million for aeronautics research. This includes $500 million to reduce aviation's climate impact through efforts including a Sustainable Flight National Partnership to develop a next-generation aircraft.
- With $150 million for the Office of STEM Engagement for education and engagement activities, this budget will allow NASA to maintain and enhance its support for educational activities, including those that focus on historically underserved communities.

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Updated 5/27/22

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 and/or new to this list:

- **CAPSTONE – No earlier than June 6, 2022:** NASA CubeSat to validate new navigation technologies and verify dynamics in Gateway's planned orbit will launch to space from New Zealand
- **SpaceX CRS-25 – Targeting June 9, 2022:** Commercial resupply services mission, including the Earth Surface Mineral Dust Source Investigation (EMIT), launch to the International Space Station from Florida
- **Artemis I Wet Dress Rehearsal – No earlier than June 19, 2022:** Teams conduct the wet dress rehearsal for NASA's Space Launch System rocket and Orion spacecraft on the launch pad at the agency's Kennedy Space Center in Florida in preparation for the Artemis I flight test. Rollout to Kennedy's Launch Pad 39B is targeted for June 6.
- **TROPICS First Launch – By July 2022:** Time-Resolved Observations of Precipitation structure and storm Intensity with a Constellation of Smallsats (TROPICS), a constellation of six CubeSats, will launch from Cape Canaveral Space Force Station in Florida. The satellites will be deployed in three separate launches and eventually all work together to provide near hourly updates of hurricanes and tropical cyclones
- **X-57 – July 2022:** First test flight for NASA's first all-electric plane, X-57, at Armstrong Flight Research Center
- **Webb Telescope – Summer 2022:** First science images from the James Webb Space Telescope, about six months after launch
- **Artemis I Launch – Targeting August 2022:** The first integrated flight test of the uncrewed Space Launch System rocket and Orion spacecraft on a multi-week mission around the Moon
- **Orion splashdown – Pending Artemis I Launch:** NASA's Orion spacecraft splashes down on Earth following a multi-week mission around the Moon
- **Psyche – No earlier than Sept. 20, 2022:** Window opens to launch Psyche from Florida, NASA's mission to study the metal-rich asteroid 16 Psyche.
- **DART – Sept. 26 – Oct. 1, 2022:** Window when Double Asteroid Redirection Test (DART) spacecraft impacts an asteroid in world's first test of planetary defense
- **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)
- **Intuitive Machines' CLPS Flight – Dec. 22, 2022:** Suite of robotic NASA payloads sent to the Moon's surface as part of a Commercial Lunar Payload Services delivery. Landing takes place in the following weeks
- **Astrobotic's CLPS Flight (Peregrine Mission 1) – Fourth Quarter 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.
- **X-59 QueSST First Flight – Late 2022:** The first flight of the X-59 Quiet SuperSonic Technology (QueSST) aircraft will take place out of Lockheed flight facilities in Palmdale, California

- **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
- **Artemis II Crew Announcement – 2022:** NASA announces the astronauts that will fly on the first crewed flight of the Orion and Space Launch System for the Artemis II mission
- **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 earlier flight tests:** Launch date for first operational Boeing commercial crew launch to space station from Florida
- **NISAR Launch (NASA + Indian Space Research Organization + synthetic aperture radars) – 2023:** 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

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.

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-

WEEKLY MESSAGING & NASA INTERVIEW PREP DOCUMENT - as of 6-3-22 (internal distribution only)

From: Beutel, Allard (HQ-NA000) <allard.beutel@nasa.gov>
Sent: June 4, 2022 12:24:46 AM EDT
Received: June 4, 2022 12:26:01 AM EDT
Attachments: NASA INTERVIEW PREP DOCUMENT - as of 6-3-22.docx

Good evening, attached is the latest weekly messaging and NASA interview prep document.

UPCOMING SCHEDULED/EXPECTED KEY EVENTS WEEK OF JUNE 5

• Artemis I Return to Launch Pad for Testing

• France Artemis Accords Signing

• NASA to Provide Update on Agency Mission Studying Thunderstorms

• NASA SpaceX CRS-25 with EMIT Launch to International Space Station

OTHER RECENT HOT TOPICS

• Hurricanes and NASA (new)

• Reported Upcoming Crew Launch to China’s Space Station (new)

• NASA Partners with Industry for New Spacewalking, Moonwalking Services (new)

• CAPSTONE Lunar CubeSat Update (updated)

• Webb Telescope Update (updated)

• Unidentified Aerial Phenomena and NASA (updated)

The Upcoming Events Public Dates section also is updated.

-Allard

Attachment

1. NASA INTERVIEW PREP DOCUMENT - as of 6-3-22.docx

Type:	application/vnd.openxmlformats-officedocument.wordprocessingml.document
Size:	68 KB (70,530 bytes)

Attachment #1

NASA INTERVIEW PREP DOCUMENT - as of 6-3-22.docx

Original view

15 pages (displayed on pages 4 to 18)

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Updated 6/3/22

NASA INTERVIEW PREP DOCUMENT

Quick Reference

Upcoming Events
Public Dates

UPCOMING SCHEDULED/EXPECTED KEY EVENTS WEEK OF JUNE 5

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- **France Artemis Accords Signing**
- **NASA to Provide Update on Agency Mission Studying Thunderstorms**
- **NASA SpaceX CRS-25 with EMIT Launch to International Space Station**

Artemis I Return to Launch Pad for Testing

NASA provided an update June 3 for the Artemis I flight test.

NASA explores the unknown in air and space, exploring at the Moon with the agency's Artemis program and then sending astronaut on to Mars.

- Latest update included information:
  - Engineers and technicians at NASA's Kennedy Space Center are conducting final preparations for next week's roll out of the Space Launch System (SLS) Moon rocket and Orion spacecraft. Currently scheduled to start at 12:01 a.m. EDT Monday, June 6, the rocket will depart the Vehicle Assembly Building (VAB) and head to Launch Pad 39B for the Artemis I wet dress rehearsal, including taking operations that would begin no earlier than June 19.
- NASA's lunar exploration program is called Artemis. Artemis missions will turn science fiction into science fact as we make new discoveries, advance technologies, and learn to live and work on another world.
- Wet dress rehearsal is the final major test of the integrated Space Launch System rocket and Orion spacecraft system before the Artemis I flight test launch.
- Artemis I is an uncrewed flight test, the first in a series of increasingly complex missions to the Moon in preparation for human missions to Mars. The flight test, targeted for no earlier than August, will allow NASA to check out rocket and spacecraft systems before crew fly aboard on Artemis II. NASA will target a more specific launch date after wet dress rehearsal.
- Prior to landing astronauts on the lunar surface, NASA is focused on the Artemis I uncrewed and Artemis II crewed flights around the Moon. Those missions, as well as a future uncrewed lander demonstration mission with SpaceX, will precede the Artemis III mission, when astronauts will land on the Moon for new scientific exploration.
- With Artemis missions, NASA will land the first woman and first person of color on the Moon, using innovative technologies to explore more of the lunar surface than ever before for the benefit of all. We will collaborate with commercial and international partners and establish the first long-term presence on the Moon. Then, we will use what we learn on and around the Moon to take the next giant leap: sending the first astronauts to Mars.

France Artemis Accords Signing Ceremony

France is scheduled to sign onto the Artemis Accords Tuesday, June 7. Philippe Baptiste, president of the Centre National d'Etudes Spatiales (CNES) – the French space agency – is expected to sign the document during an event hosted by the Ambassador of France to the United States, Philippe Étienne, at his residence in Washington, D.C. The signing will take place prior to a CNES 60th

anniversary celebration, also to be held at the ambassador's residence. Media are expected to attend the ceremonies.

NASA inspires the world through discovery, leading worldwide partnerships, such as the Artemis Accords, aligned with our values and vision.

- The Artemis Accords, signed by 19 countries so far, establish a practical set of principles to guide space exploration cooperation on and around the Moon among nations participating in the agency's 21st century lunar exploration plans.
- While NASA is leading Artemis, which includes sending the first woman and first person of color to the Moon, international partnerships will play a key role in achieving a sustainable and robust presence on the Moon later this decade while preparing to conduct a historic human mission to Mars.
- The Artemis Accords reinforce and implement the 1967 Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies, otherwise known as the Outer Space Treaty. They also reinforce the commitment by the U.S. and partner nations to the Registration Convention, the Agreement on the Rescue of Astronauts, and other norms of behavior that NASA and its partners have supported, including the public release of scientific data.
- The principles of the Artemis Accords are:
    - Peaceful Exploration: All activities conducted under Artemis must be for peaceful purposes
    - Transparency: Artemis Accords signatories will conduct their activities in a transparent fashion to avoid confusion and conflicts
    - Interoperability: Nations participating in the Artemis program will strive to support interoperable systems to enhance safety and sustainability
    - Emergency Assistance: Artemis Accords signatories commit to rendering assistance to personnel in distress
    - Registration of Space Objects: Any nation participating in Artemis must be a signatory to the Registration Convention or become a signatory with alacrity
    - Release of Scientific Data: Artemis Accords signatories commit to the public release of scientific information, allowing the whole world to join us on the Artemis journey
    - Preserving Heritage: Artemis Accords signatories commit to preserving outer space heritage
    - Space Resources: Extracting and utilizing space resources is key to safe and sustainable exploration and the Artemis Accords signatories affirm that such activities should be conducted in compliance with the Outer Space Treaty
    - Deconfliction of Activities: The Artemis Accords nations commit to preventing harmful interference and supporting the principle of due regard, as required by the Outer Space Treaty
    - Orbital Debris: Artemis Accords countries commit to planning for the safe disposal of debris
- NASA, in coordination with the U.S. Department of State, announced the establishment of the Artemis Accords in 2020. The Artemis Accords reinforce and implement the 1967 Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies, otherwise known as the Outer Space Treaty. They also reinforce the commitment by the United States and partner nations to the Registration Convention, the Agreement on the Rescue of Astronauts, and other norms of

behavior that NASA and its partners have supported, including the public release of scientific data.
- Additional countries will join the Artemis Accords in the months and years ahead, as NASA continues to work with its international partners to establish a safe, peaceful, and prosperous future in space. Working with both new and existing partners will add new energy and capabilities to ensure the entire world can benefit from our journey of exploration and discovery.

NASA to Provide Update on Agency Mission Studying Thunderstorms
NASA will host a media teleconference at 10 a.m. CDT Tuesday, June 7, to discuss research about intense summer thunderstorms over the central United States and their effects on Earth's atmosphere and climate change. A replay of the call will be posted on the agency's website as soon as possible.

NASA innovates for the benefit of humanity, solving mysteries of our home planet, and improving life on Earth through climate research, such as the Dynamics and Chemistry of the Summer Stratosphere mission.

- NASA and university scientists are studying thunderstorms for the second year in row as part of the Dynamics and Chemistry of the Summer Stratosphere (DCOTSS) mission.
- Though the storms develop in the troposphere, the lowest layer of Earth's atmosphere where we live, intense thunderstorms can punch up into the next layer of the atmosphere, the stratosphere, and inject tiny atmospheric particles called aerosols, as well as water vapor.
- Mission scientists want to better understand how aerosols from tall, powerful storms affect the chemical makeup of the stratosphere, which is home to Earth's protective ozone layer. In addition, the water vapor these storms inject is a potent greenhouse gas that can affect our changing climate.
- Teleconference participants will include:
    - Kate Calvin, NASA chief scientist and senior climate advisor at NASA Headquarters in Washington
    - Ken Bowman, DCOTSS principal investigator and professor of atmospheric science, Texas A&M University
- Based at Building 703 of NASA's Armstrong Flight Research Center, located in Palmdale, California, the ER-2 aircraft will fly as high as 70,000 feet with 12 instruments attached to collect atmospheric chemistry samples that are carried above Earth's surface and into the ozone layer by these intense thunderstorms.
- For more information on DCOTSS, visit: **https://www.dcotss.org/**

NASA SpaceX CRS-25 with Climate Research EMIT Launch to International Space Station
NASA and SpaceX are targeting 10:22 a.m. EDT Friday, June 10 to launch a cargo Dragon spacecraft on a Falcon 9 rocket to the International Space Station from Launch Complex 39A at NASA's Kennedy Space Center in Florida. The cargo includes hardware, technology demonstrations, and science experiments, including a new climate research investigation, headed to the International Space Station aboard SpaceX's 25th (CRS-25) commercial resupply mission for NASA.

NASA explores the unknown in air and space, innovates for the benefit of humanity, and inspires the world through discovery.

- SpaceX's 25th contract resupply mission under the second Commercial Resupply Services contract (CRS-2) will deliver more than 4,500 pounds of cargo, hardware, technology demonstrations, and science experiences to the International Space Station, including NASA's

next investigation to monitor climate change, the Earth Surface Mineral Dust Source Investigation (EMIT).
    - EMIT will identify the composition of mineral dust from Earth's arid regions and analyze dust carried through the atmosphere from deserts to see what effects it has on the planet, further advancing NASA's data contributions to monitoring climate change.
- SpaceX's Dragon spacecraft will deliver other investigations, including:
    - **BeaverCube** has two objectives, one is to measure cloud properties, ocean surface temperatures and ocean color to study Earth's climate and weather systems. It will also demonstrate an application for the use of shape memory alloy technology via in-orbit calibration.
    - **Suture In Space**, an investigation from ESA (European Space Agency), examines the behavior of sutures and wound healing in microgravity. Informs understanding of suturing materials and techniques suitable for future space missions to the Moon and Mars.
    - **DynaMoS** examines how microgravity affects metabolic interactions in communities of soil microbes. Improved understanding of the function of soil microorganism communities also could reveal ways to optimize these communities to support agricultural production on Earth.
    - **Biopolymer Research for In-Situ Capabilities** looks at how microgravity affects the process of creating a concrete alternative made with an organic material and on-site materials such as lunar or Martian dust, known as a biopolymer soil composite (BPC). BPCs also could offer an environmentally-friendly concrete alternative to make lunar and Martian habitats, as well as structures on Earth.
    - A NASA Student Payload Opportunity with Citizen Science (**SPOCS**) program opportunity, which provides students enrolled in institutions of higher learning the opportunity to design and build an experiment to fly to and return from the International Space Station.
- With a June 10 launch, Dragon's arrival to the station is scheduled for 6:20 a.m. Sunday, June 12. Dragon will dock autonomously to the forward-facing port of the station's Harmony module, with NASA astronauts Kjell Lindgren and Bob Hines monitoring operations from the station.
    - The spacecraft is expected to spend about a month attached to the orbital outpost before it returns to Earth with research and return cargo, splashing down off the coast of Florida.
- The International Space Station serves as the world's leading laboratory where researchers conduct cutting-edge research and technology development that will enable human and robotic exploration of destinations beyond low-Earth orbit, including Mars.
- The International Space Station facilitates the growth of a robust commercial market in low-Earth orbit for scientific research, technology development, and human and cargo transportation. It's also the blueprint for global cooperation -- one that enables a U.S.-led multinational partnership and advances shared goals in space exploration.
- The International Space Station is a convergence of science, technology, and human innovation that demonstrates new technologies and enables research not possible on Earth. NASA recently celebrated 21 years of continuous human presence aboard the orbiting laboratory, which has hosted 258 people and a variety of international and commercial spacecraft. The space station remains the springboard to NASA's next great leaps in exploration, including future human missions to the Moon and eventually to Mars.

OTHER RECENT HOT TOPICS

Hurricanes and NASA

June 1 was the official start of the Atlantic Ocean hurricane season, which runs to Nov. 30.

NASA innovates for the benefit of humanity by improving life on Earth through climate research and making our data and innovations accessible to all.

- After 2021 brought the third-highest number of named storms on record, NASA once again is prepared to help understand and monitor these storms from its unique vantage point of space.
- Climate change is increasing the heat in the ocean basins and making it more likely that storms will intensify faster and be stronger, a phenomenon NASA scientists continue to study.
- NASA plays a foundational role in the science of hurricanes, using data from its 20-plus Earth-observing satellites, including:
    - Sentinel-6 Michael Freilich
    - Global Precipitation Measurement
    - Cyclone Global Navigation Satellite System, others,
    - and the soon-to-be launched Time-Resolved Observations of Precipitation structure and storm Intensity with a Constellation of Smallsats (TROPICS) mission.
- When it comes to operational forecasting, the agency's main role is through its crucial partnership with the National Oceanic and Atmospheric Administration (NOAA). NASA designs, builds, and launches NOAA's suite of satellites that provide the data that specifically feed numerical weather prediction models.
- NASA Administrator Bill Nelson said: "Addressing and mitigating the effects of climate change like hurricanes are at the core of NASA's mission. From the agency's upcoming TROPICS mission that will help scientists understand the factors driving storm intensification and contribute to weather forecasting models, to the creation of the Earth Information Center to ensure game-changing NASA climate data is accessible and understandable to decision-makers, NASA will continue to help communities better prepare for and recover from these weather events."
- NASA's goal for American disaster preparedness, response, mitigation, and recovery is bringing data to people who need it. Before, during, and after a hurricane makes landfall, NASA satellites are in prime positions to identify impacts.
- NASA supports risk reduction, response, and recovery for hurricanes and tropical cyclones. NASA works with local officials and first responders, federal agencies such as FEMA and the U.S. Army Corps of Engineers, and infrastructure experts to determine what information they need and supply it in usable formats in real time. Examples include information on infrastructure failures and disruptions, contaminated water supplies and other hotspots for urgent response needs.

Reported Upcoming Crew Launch to China's Space Station

Although China has not officially announced a launch date for its next crew mission to its space station in low-Earth orbit, media have been reporting it may be on June 5. Below is our response to public and media calls for comment:

- NASA uses space and science as a unifying force. Exploration is a global endeavor, each milestone contributing to humanity's understanding of the universe, and we look forward to China's contributions to increased scientific understanding.

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NASA Partners with Industry for New Spacewalking, Moonwalking Services
NASA announced June 1 that two companies were selected to move forward in developing the next generation of spacesuits for Artemis missions at the Moon and the International Space Station,
NASA explores the unknown in air and space, exploring at the Moon with the agency's Artemis program and then sending astronaut on to Mars.

- Spacewalk and Moonwalk services are a major element required to demonstrate continued American leadership in space exploration and return humans to the lunar surface under Artemis, to eventually explore Mars.
- NASA has selected Axiom Space and Collins Aerospace to advance spacewalking capabilities in low-Earth orbit and at the Moon, by buying services that provide astronauts with next generation spacesuit and spacewalk systems to work outside the International Space Station, explore the lunar surface on Artemis missions, and prepare for human missions to Mars.
- The awards leverage NASA expertise with commercial innovation to support continued science at the orbiting laboratory and long-term human exploration at the Moon under Artemis, including landing the first woman and first person of color on the lunar surface.
- The companies selected were chosen from the Exploration Extravehicular Activity Services (xEVAS) contract solicitation. The contract enables selected vendors to compete for task orders for missions that will provide a full suite of capabilities for NASA's spacewalking needs during the period of performance through 2034.
    - The indefinite delivery and indefinite quantity, milestone-based xEVAS contract has a combined maximum potential value of $3.5 billion for all task order awards. The first task orders to be competed under the contract will include the development and services for the first demonstration outside the space station in low-Earth orbit and for the Artemis III lunar landing.
- Each partner has invested a significant amount of its own money into development. Partners will own the spacesuits and are encouraged to explore other non-NASA commercial applications for data and technologies they co-develop with NASA.
- This new approach to spacewalk services encourages an emerging commercial market for a range of customers, and grants NASA the right to use the same data and technologies within the agency and on future exploration program procurements.
- NASA experts defined the technical and safety standards by which the spacesuits will be built, and the chosen companies agreed to meet these key agency requirements. The commercial partners will be responsible for design, development, qualification, certification, and production of spacesuits and support equipment to enable space station and Artemis missions.
- The agency will continue to make flight- and ground-based test data from NASA-led space station spacewalks and NASA's Exploration Extravehicular Mobility Unit (xEMU) development project available to companies through the EVA Technical Library. This will encourage an accelerated transition to industry while reducing risks and providing access to previous NASA investments in advanced exploration spacesuit development.
- NASA designed the contract to endure and evolve with needs of the agency and space industry. The contract also provides the agency with an optional mechanism to add additional vendors that were not selected in the original award announcement as the commercial space services market evolves.
- Under Artemis, new exploration spacesuits, together with human surface mobility systems, the Space Launch System rocket, the Orion Spacecraft, ground systems, Gateway lunar orbiting outpost, and human landing systems, will enable NASA to return humans to and establish a long-term astronaut presence at the Moon and to eventually explore Mars.

CAPSTONE Lunar CubeSat Update
NASA hosted a news teleconference May 25 with partners Advanced Space and Rocket Lab for the CAPSTONE launch, scheduled for no earlier than June 13.

NASA explores the unknown in air and space, leads worldwide partnerships, and explores at the Moon with the agency's Artemis program that will lead to sending astronauts on to Mars.

- CAPSTONE will be the first spacecraft to demonstrate a unique lunar orbit intended for NASA's Gateway – a planned multipurpose outpost around the Moon that will provide essential support for long-term astronaut lunar missions as part of the Artemis program.
- CAPSTONE – short for the Cislunar Autonomous Positioning System Technology Operations and Navigation Experiment – is microwave oven-size CubeSat will serve as the first spacecraft to test a unique lunar orbit that has never been flown before. The orbit, formally known as a near rectilinear halo orbit (NRHO), is an elongated orbit located at a precise balance point between the gravities of Earth and the Moon.
- CAPSTONE will help reduce risk of future long-term deep space missions – like Gateway – by validating innovative navigation technologies and verifying the dynamics of this orbit.
- CAPSTONE's mission will demonstrate multiple technologies and lay a foundation for commercial support of future lunar operations.
- CAPSTONE will launch aboard a Rocket Lab's Electron rocket from the company's Launch Complex 1 in New Zealand and spend four-months traveling to the NRHO.
    - While this gravity-driven track takes longer to reach the Moon, it will dramatically reduce the amount of fuel this pathfinder CubeSat will need to fly there.
- NASA partners will test cutting-edge tools for mission planning and operations, paving the way and expanding opportunities for small and more affordable space and exploration missions to the Moon, Mars, and other destinations throughout the solar system.
- The CAPSTONE mission is built on the capabilities of American small businesses.
    - Many of the mission's small business partners have roots in the NASA Small Business Innovation Research / Small Business Innovation Research and Small Business Technology Transfer program.
- NASA Commercial Partners:
    - Advanced Space of Westminster, Colorado
    - Tyvak Nano-Satellite Systems, a Terran Orbital Corporation, of Irvine, California
    - Stellar Exploration, Inc. of San Luis Obispo, California
    - Rocket Lab of Long Beach, California
- CAPSTONE is expected to maintain its NRHO lunar orbit for approximately six months.

Webb Telescope Update
NASA provided a public update via a media teleconference May 9 about the progress toward preparing the agency's James Webb Space Telescope for science operations. The agency also provided this written update May 26. Webb launched Dec. 25, 2021, arrived at its orbit Jan. 24, 2022, and has been undergoing checks and preps for full operations. NASA will release Webb's first full-color images and spectroscopic data on July 12, 2022

NASA explores the unknown in air and space, solving mysteries of our solar system and beyond with great observatories, such the agency's Webb Telescope.

- NASA's Webb Telescope will explore every phase of cosmic history – from within the solar system to the most distant observable galaxies in the early universe, and everything in between. Participants in the May 9 media teleconference will discuss the recent completion of

mirror alignment and preview what to expect for Webb's final months of science instrument preparations.

- NASA's James Webb Space Telescope is the largest space observatory and the most technically complex science mission NASA has ever built. It will be the world's premier space science observatory and explore every phase of 13.5 billion years of cosmic history, including our solar system, distant observable galaxies in the early universe, and everything in between.
    - Using its 21-foot (6.5 meter) mirror, Webb will see the light from the first galaxies that formed in the early universe and observe the birth of stellar systems.
    - Webb will explore distant worlds and study the atmospheres of planets orbiting other stars, known as exoplanets, searching for chemical fingerprints of habitability.
- Webb will help us understand the origins of the universe and our place in it.
- Webb is an international program led by NASA with its international agency partners, ESA (European Space Agency) and the Canadian Space Agency (CSA). The mission has been developed over two decades, with contributions from thousands of scientists, engineers, and other professionals from more than 14 countries and 29 U.S. states.
- Webb Mission Objectives: Webb's revolutionary technology will study every phase of cosmic history – from the first galaxies that formed after the big bang to newly discovered comets and moons in our solar system, and everything in space and time in between. With Webb, this rich cosmic history is now within our reach. Webb will enable the following:
    - Search for and discover some of the first galaxies in the universe, expanding our understanding of the early universe
    - Study galaxies near and far, young and old, to understand how galaxies assemble and change over time
    - Uncover the details of how stars and planets are born, by using infrared wavelengths to see through the massive clouds of dust that enshroud them
    - Reveal new details of planets, within our own solar system and beyond, to determine their formation and evolution and do comparative studies
- Webb represents NASA's largest international space science program, embodies NASA's values of teamwork and excellence, and will enable scientific breakthroughs we can't yet imagine.
- Webb has four science instruments: Near-Infrared Camera (NIRCam), Near-Infrared Spectrograph (NIRSpec), Mid-Infrared Instrument (MIRI), and Near-Infrared Imager and Slitless Spectrograph (NIRISS) with the Fine Guidance Sensor (FGS).
- Webb will complement the science achieved by other NASA space observatories, such as Hubble, Spitzer, and Chandra.
- If asked about the changing the telescope name: NASA's History Office conducted an exhaustive search through currently accessible archives on James Webb and his career. Our historians also talked to experts who previously researched this topic extensively. NASA found no evidence at this point that warrants changing the name of the telescope. The NASA Historian is wrapping up research from additional historical archives that were closed due to COVID-19. NASA plans to share information about the research after that is complete.

Unidentified Aerial Phenomena and NASA

Media began reporting May 23 that NASA is in the process of establishing its own official Unidentified Aerial Phenomena (UAP) office to perform a similar function to the U.S. Department of Defense's UAP Task Force. Below is our public response:

- NASA is not part of the UAP Task Force or its successor, the Airborne Object Identification and Management Synchronization Group. NASA has, however, consulted widely across the government regarding how to apply the tools of science to shed light on the nature and origin of unidentified aerial phenomena – information that is important to the agency for a scientific perspective. The limited number of observations of UAPs, which includes reported objects that cannot be immediately identified by individuals, currently makes it difficult to draw scientific conclusions about the nature of UAPs. NASA is evaluating potential avenues for how to provide our expertise to improve understanding of UAPs.
- If asked:
    - The agency has no plans to stand up an office dedicated to this effort.
    - One of NASA's key goals is the search for life in the universe, however, the agency has yet to find any credible evidence of extraterrestrial life.

Crew Dragon Heat Shield Reported Issue
Media began reporting on May 23 that SpaceX's Axiom-1 Dragon spacecraft experienced a serious issue with its heat shield during reentry in April that could have had dangerous consequences for its crew members. Below is our response for NASA comment:

- The data associated with Dragon's recent crew reentries was normal – the system performed as designed without dispute. There has not been a hypergol leak during the return of a crewed Dragon mission nor any contamination with the heat shield causing excessive wear. SpaceX and NASA perform a full engineering review of the heat shield's thermal protection system following each return, including prior to the launch of the Crew-4 mission currently at the International Space Station. The heat shield composite structure (structure below the tile) was re-flown per normal planning and refurbishment processes. The thermal protection system on the primary heat shield for Crew-4 was new, as it has been for all human spaceflight missions. SpaceX has only demonstrated reuse of selected PICA (Phenolic-Impregnated Carbon Ablator) tiles, which is a lightweight material designed to withstand high temperatures, as part of the heat shield on cargo flights.

  NASA and SpaceX are currently in the process of determining hardware allocation for the agency's upcoming SpaceX Crew-5 mission, including the Dragon heat shield. SpaceX has a rigorous testing process to put every component and system through its paces to ensure safety and reliability. In early May, a new heat shield composite structure intended for flight on Crew-5 did not pass an acceptance test. The test did its job and found a manufacturing defect. NASA and SpaceX will use another heat shield for the flight that will undergo the same rigorous testing prior to flight.

  Crew safety remains the top priority for both NASA and SpaceX and we continue to target September 2022 for launch of Crew-5.

President Biden: NASA to Welcome Japanese Astronaut Aboard Gateway
President Joe Biden and Japan's Prime Minister Fumio Kishida met in Tokyo May 23 where they announced progress on collaboration for human and robotic lunar missions.

NASA explores the unknown in air and space, leads worldwide partnerships, and explores at the Moon with the agency's Artemis program that will lead to sending astronauts on to Mars.

- President Biden and Japan's Prime Minister Fumio Kishida have confirmed their commitment to include a Japanese astronaut aboard the lunar Gateway outpost and their shared ambition to see a future Japanese astronaut land on the Moon as part of NASA's Artemis program.
- President Biden said: "In recent years, the alliance between Japan and the United States has grown stronger, deeper, and more capable as we work together to take on new challenges – just as important as the opportunities – of a rapidly changing world. A great example of this: We viewed Japan's lunar rover... a symbol of how our space cooperation is taking off, looking towards the Moon and to Mars. And I'm excited about the work we'll do together on the Gateway station around the Moon and look forward to the first Japanese astronaut joining us in the mission to the lunar surface under the Artemis program."
- The United States and Japan are working to formalize the Japanese astronaut's inclusion on Gateway through an Implementing Arrangement later this year.
- NASA Administrator Bill Nelson said: "Our shared ambition to see Japanese and American astronauts walk on the Moon together reflects our nations' shared values to explore space responsibly and transparently for the benefit of humanity here on Earth. With this historic announcement, President Biden is once again showing nations throughout the world that America will not go alone but with like-minded partners. Under Artemis, it's our intention to invest in and explore the cosmos with countries that promote science, economic opportunity, and a common set of shared values."
- As part of ongoing collaborations on space and Earth science missions, President Biden and Prime Minister Kishida reaffirmed the United States and Japan's continued cooperation on Earth science data sharing to improve scientific understanding of the Earth's changing climate.
- In addition, the president confirmed the United States' intention to provide Japan with a sample from the asteroid Bennu in 2023, collected from NASA's OSIRIS-REx mission. Japan provided the United States with an asteroid sample collected by the Japan Aerospace Exploration Agency's (JAXA) Hayabusa2 asteroid sample-return mission in 2021.
- JAXA also is critical partner to NASA in helping the agency achieve its goals in science and human exploration, including on the International Space Station and through the Artemis. In 2020, Japan became an original signatory of the Artemis Accords and finalized an agreement with NASA to provide several capabilities for Gateway's I-HAB, which will provide the heart of Gateway life support capabilities and additional space where crew will live, work, and conduct research during Artemis missions.
    - JAXA's planned contributions include I-HAB's environmental control and life support system, batteries, thermal control, and imagery components, which will be integrated into the module by ESA (European Space Agency) prior to launch. These capabilities are critical for sustained Gateway operations during crewed and uncrewed time periods.

NASA's Boeing Orbital Flight Test-2 Mission

NASA's Boeing Orbital Flight Test-2 launched to the International Space Station May 19 and docked to the station May 20. The uncrewed OFT-2 Starliner spacecraft landed May 25.

NASA innovates for the benefit of humanity and inspires the world through discovery – increasing access to space and growing new commercial markets to serve NASA and all of America's interests through the work of NASA's Commercial Crew Program.

- NASA's Commercial Crew Program and our commercial industry partner, Boeing, are taking a major step on the path to more human spaceflight launches to the International Space Station on American rockets and spacecraft from American soil.
- NASA's Boeing Orbital Flight Test-2 (OFT-2) is the CST-100 Starliner's second uncrewed flight test and will dock to the International Space Station as part of NASA's Commercial Crew Program.
- The uncrewed OFT-2 flight will test a full mission profile, including end-to-end capabilities of Starliner and the United Launch Alliance's Atlas V rocket from launch to docking to a return to Earth in the desert of the western United States.
- OFT-2 will provide valuable data toward NASA certifying Boeing's crew transportation system.
- OFT-2 is the second orbital flight for the CST-100 Starliner, and the first for the second crew module in the Starliner fleet. Boeing proactively announced it would fly a second orbital test on its own cost to prove the Starliner system meets NASA's requirements, including docking to the space station.
- The Starliner carried more than 500 pounds of NASA cargo and crew supplies to the space station and returned to Earth with more than 600 pounds of cargo, including reusable Nitrogen Oxygen Recharge System (NORS) tanks that provide breathable air to station crew members.
- For more than 21 years, humans have continuously lived and worked aboard the International Space Station, advancing scientific knowledge and demonstrating new technologies that enable us to prepare for human exploration to the Moon and Mars. The station's design requires humans living aboard to maintain it, operate it, and upgrade it; thus, International Space Station operations, including commercial resupply and commercial crew, are essential to the mission.
- NASA is enabling economic growth in low-Earth orbit to open access to space to more people, more science, and more companies than ever before. With a robust economy in low-Earth orbit, in which NASA is one of many customers, it enables the agency to explore the Moon and Mars along with commercial and international partners.

International Space Station U.S. Spacewalks Status
During a NASA news conference May 17, media asked about the status of U.S. spacewalks aboard the International Space Station following a situation with water in the helmet of an astronaut during a March spacewalk. NASA confirmed to reporters there won't be regularly scheduled spacewalks – only emergency ones, if needed – while the situation is investigated.

- After successfully completing a spacewalk March 23 at the International Space Station, a thin layer of moisture was discovered on the inner surface of the helmet and on an absorption pad inside ESA (European Space Agency) astronaut Matthias Maurer's helmet following airlock re-pressurization. The water found was more than normal. The space station crew expedited Maurer's helmet removal and then gathered data in coordination with ground support teams.

  The space station team is looking into the cause, and any possible fixes that might be needed. The station crew members remain in good health, and they are continuing their daily activities of science and maintenance. Key objectives were completed during the spacewalk, and there are no planned U.S operating segment spacewalks in the near future as a part of normal station operations.

  Crew safety is a top priority for NASA. The agency and our international partners are constantly identifying and mitigating risks of human spaceflight.

NASA Fiscal Year 2023 Budget Proposal

On March 28, the White House released the Fiscal Year 2023 budget proposal and NASA Administrator Bill Nelson delivered the 2022 State of NASA address:

Exploring the secrets of the universe for the benefit of all.

- NASA Administrator Bill Nelson Statement on President's FY 2023 Budget Request from March 28:
  - "Greater than a number, statistic, or fact is what the president's budget request represents. This budget reflects the Biden administration's confidence in the extraordinary workforce that makes NASA the best place to work in the federal government. It's an investment in the businesses and universities that partner with NASA in all 50 states and the good-paying jobs they are creating. It's a signal of support for our missions in a new era of exploration and discovery."
- The $26 billion Fiscal Year 2023 budget request is 8% more than enacted federal spending levels from FY 2022.
- It represents the largest request for science funding in agency history.
- This budget request reflects the Biden-Harris Administration's confidence in the agency and its support for NASA's missions. It would allow NASA to fulfill the ambitions in its vision statement, "Exploring the secrets of the universe for the benefit of all," and its mission statement, "NASA explores the unknown in air and space, innovates for the benefit of humanity, and inspires the world through discovery."
- **This Budget Request Would Allow NASA to:**
  - **Keep NASA at the forefront of exploration and discovery through Artemis, Moon to Mars activities, and other efforts.** Through its leadership in exploration, science, technology and discovery, NASA has shaped innovation on a global scale. NASA's international partnerships create new possibilities for space and science agencies in other nations and bring new benefits to American researchers and explorers. This budget request will allow NASA to continue to expand the frontiers of innovation around the world.
  - **Address climate change.** For decades, NASA has worked to address climate change across its centers and offices, pursuing science that helps decision-makers and members of the public understand our changing planet and developing technology that will help society address this pressing challenge. This legacy leaves NASA well prepared to support President Biden's commitment to taking swift action on climate change.
  - **Promote diversity, equity, inclusion, and accessibility.** NASA is dedicated to promoting diversity, equity, inclusion, and accessibility in all aspects of its operations, including its workforce, its research grants, and the contracts and awards it issues. The agency also works to broaden participation among early career staff its and support career development for all employees.
  - **Provide opportunities in STEM.** This budget allows NASA to continue serving as a vital component to the nation's education system and an inspiration to the next generation of scientists, engineers, mathematicians, and explorers.
  - **Drive economic growth.** NASA stimulates local and regional economies in all 50 states, as well as the U.S. national economy through its investments in scientific research and technology, its contracts, the good-paying jobs it creates, and its

collaborations with industry. The investments in this budget will go toward economic growth that benefits Americans.

- Some Key Numbers from the Budget Request
  - The budget provides $7.6 billion for deep space exploration that will enable missions on and around the Moon through Artemis while preparing for Mars exploration. Through Artemis missions, NASA will land the first woman and person of color on the lunar surface, deepen the United States' scientific understanding of the Moon, and test technologies that will allow humans to prepare for human exploration of Mars.
  - The budget includes $4.7 billion for Common Exploration Systems Development to support lunar missions includes funding for the Orion spacecraft and Space Launch System (SLS). No other rocket has the abilities of SLS to complete early Artemis missions. The budget's $1.5 billion for astronaut Moon landers will enable NASA to continue the development of the final mode of transportation needed to take astronauts to the lunar surface and allow NASA to increase competition in lunar landing capabilities.
  - The budget would increase NASA's Earth science funding for climate and weather monitoring and measurement, including $2.4 billion for Earth-observing satellites and related research. This will enhance NASA's ability to improve the world's understanding of climate change.
  - The budget's $1.4 billion for space technology research and development will support new technologies to help the commercial space industry grow, enhance mission capabilities, and reduce costs.
  - The budget would provide $970 million for aeronautics research. This includes $500 million to reduce aviation's climate impact through efforts including a Sustainable Flight National Partnership to develop a next-generation aircraft.
- With $150 million for the Office of STEM Engagement for education and engagement activities, this budget will allow NASA to maintain and enhance its support for educational activities, including those that focus on historically underserved communities.

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 and/or new to this list:

- **SpaceX CRS-25 – Targeting June 10, 2022:** Commercial resupply services mission, including the Earth Surface Mineral Dust Source Investigation (EMIT), launch to the International Space Station from Florida
- **CAPSTONE – No earlier than June 13, 2022:** NASA CubeSat to validate new navigation technologies and verify dynamics in Gateway's planned orbit will launch to space from New Zealand
- **Artemis I Wet Dress Rehearsal – No earlier than June 19, 2022:** Teams conduct the wet dress rehearsal for NASA's Space Launch System rocket and Orion spacecraft on the launch pad at the agency's Kennedy Space Center in Florida in preparation for the Artemis I flight test. Rollout to Kennedy's Launch Pad 39B is targeted for June 6.
- **Webb Telescope – July 12, 2022:** First science images from the James Webb Space Telescope will be released.

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- **X-57 – July 2022:** First test flight for NASA's first all-electric plane, X-57, at Armstrong Flight Research Center
- **TROPICS Launches – By July 31, 2022:** Time-Resolved Observations of Precipitation structure and storm Intensity with a Constellation of Smallsats (TROPICS), a constellation of six CubeSats, will launch from Cape Canaveral Space Force Station in Florida. The satellites will be deployed in three separate launches and eventually all work together to provide near hourly updates of hurricanes and tropical cyclones
- **Artemis I Launch – Targeting August 2022:** The first integrated flight test of the uncrewed Space Launch System rocket and Orion spacecraft on a multi-week mission around the Moon
- **Orion splashdown – Pending Artemis I Launch:** NASA's Orion spacecraft splashes down on Earth following a multi-week mission around the Moon
- **Psyche – No earlier than Sept. 20, 2022:** Window opens to launch Psyche from Florida, NASA's mission to study the metal-rich asteroid 16 Psyche.
- **DART – Sept. 26 – Oct. 1, 2022:** Window when Double Asteroid Redirection Test (DART) spacecraft impacts an asteroid in world's first test of planetary defense
- **NOAA's Joint Polar Satellite System-2 (JPSS-2) Launch – Nov. 1, 2022:** NASA and the National Oceanic and Atmospheric Administration will launch NOAA's JPSS-2 weather and climate satellite mission with NASA's Low-Earth Orbit Flight Test of an Inflatable Decelerator (LOFTID) demonstration from Vandenberg Space Force Base in California
- **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)
- **Intuitive Machines' CLPS Flight – Dec. 22, 2022:** Suite of robotic NASA payloads sent to the Moon's surface as part of a Commercial Lunar Payload Services delivery. Landing takes place in the following weeks
- **Astrobotic's CLPS Flight (Peregrine Mission 1) – Fourth Quarter 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.
- **X-59 QueSST First Flight – Late 2022:** The first flight of the X-59 Quiet SuperSonic Technology (QueSST) aircraft will take place out of Lockheed flight facilities in Palmdale, California
- **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
- **Artemis II Crew Announcement – 2022:** NASA announces the astronauts that will fly on the first crewed flight of the Orion and Space Launch System for the Artemis II mission
- **Boeing's Crew Flight Test – Under review pending OFT-2 Results:** 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

- **NISAR Launch (NASA + Indian Space Research Organization + synthetic aperture radars) – 2023:** 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

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.

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-

Hold UAP Updates

From:	Nelson, Bill (HQ-AA000) </O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=3FA5333A4119409284AC2C5CF0B8534D-NELSON, C W>
To:	kayla.r.ratnasamy@nasa.gov
Sender:	Ratnasamy, Kayla R. (HQ-AA000) </O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=5ECCDC78F2064815A597591B357570F1-RATNASAMY,>
Sent:	June 6, 2022 4:43:06 PM EDT
Received:	June 6, 2022 4:43:06 PM EDT
Attachments:	Hold UAP Updates

Attachment

1. Hold UAP Updates

Type:	text/calendar
Size:	1 KB (2,016 bytes)

Attachment #1
Hold UAP Updates

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UAP Updates

From:	Nelson, Bill (HQ-AA000) </O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=3FA5333A4119409284AC2C5CF0B8534D-NELSON, C W>
To:	kayla.r.ratnasamy@nasa.gov
Sender:	Ratnasamy, Kayla R. (HQ-AA000) </O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=5ECCDC78F2064815A597591B357570F1-RATNASAMY,>
Sent:	June 8, 2022 2:27:58 PM EDT
Received:	June 8, 2022 2:27:58 PM EDT
Attachments:	UAP Updates

Attachment

1. UAP Updates

Type:	text/calendar
Size:	2 KB (2,226 bytes)

Attachment #1
UAP Updates

Thomas and Susie requested to do this today. Just spoke with him and he is free at 4pm to brief Bill today.

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UAP Updates

From:	Nelson, Bill (HQ-AA000) </O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=3FA5333A4119409284AC2C5CF0B8534D-NELSON, C W>
To:	kayla.r.ratnasamy@nasa.gov
Sender:	Ratnasamy, Kayla R. (HQ-AA000) </O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=5ECCDC78F2064815A597591B357570F1-RATNASAMY,>
Sent:	June 8, 2022 1:21:47 PM EDT
Received:	June 8, 2022 1:21:47 PM EDT
Attachments:	UAP Updates

Attachment

1. UAP Updates

Type:	text/calendar
Size:	2 KB (2,126 bytes)

Attachment #1
UAP Updates

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ADVISORY: NASA to Discuss New Unidentified Aerial Phenomena Study Today

From:	Potter, Sean (HQ-NA020) <sean.potter@nasa.gov>
To:	(b) (7)(E) @mail.nasa.gov>
Sent:	June 9, 2022 10:29:44 AM EDT
Received:	June 9, 2022 10:29:46 AM EDT
Attachments:	M22-083 NASA to Discuss New Unidentified Aerial Phenomena Study.docx

For internal heads up only; for immediate release --

MEDIA ADVISORY: M22-083

NASA to Discuss New Unidentified Aerial Phenomena Study Today

NASA will host a media teleconference at 1 p.m. EDT today – Thursday, June 9 – to discuss a new study team the agency is commissioning to examine unidentified aerial phenomena (UAPs). The purpose of the study is to examine UAPs – observations of events in the sky that cannot be identified as aircraft or known natural phenomena – from a scientific perspective.

Unidentified phenomena in the atmosphere are of interest for both national security and air safety. Establishing which events are natural provides a key first step to identifying or mitigating such phenomena, which aligns with one of NASA's goals to ensure the safety of aircraft <https://www.nasa.gov/aeroresearch/programs/aosp/description/>. There is no evidence UAPs are extra-terrestrial in origin.

Teleconference participants include:

• Thomas Zurbuchen, associate administrator of the agency's Science Mission Directorate (SMD)

• Daniel Evans, SMD assistant deputy associate administrator for research

• David Spergel, study lead and president of the Simons Foundation

Media interested in participating in the call should send their full name, media affiliation, email address, and phone number to Joshua Handal at: joshua.a.handal@nasa.gov by noon today.

For NASA's media accreditation policy, please visit:

https://go.nasa.gov/3GQpoCj

For more information about NASA's new UAP study, visit:

https://go.nasa.gov/3mAvNIF

-end-

Attachment

1. M22-083 NASA to Discuss New Unidentified Aerial Phenomena Study.docx

Type:	application/vnd.openxmlformats-officedocument.wordprocessingml.document
Size:	27 KB (27,756 bytes)

Attachment #1

M22-083 NASA to Discuss New Unidentified Aerial Phenomena Study.docx

Original view

1 page

June 9, 2022

MEDIA ADVISORY: M22-083

NASA to Discuss New Unidentified Aerial Phenomena Study Today

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https://go.nasa.gov/3GQpoCj

For more information about NASA's new UAP study, visit:

https://go.nasa.gov/3mAvNIF

-end-

Josh Handal / Karen Fox
Headquarters, Washington
202-358-1600 / 202-358-1257
joshua.a.handal@nasa.gov / karen.c.fox@nasa.gov

[EXTERNAL] Imitation is the Sincerest Form of Flattery

From: Avi Loeb <aloeb@cfa.harvard.edu>
To: Abraham Loeb <aloeb@cfa.harvard.edu>
Sent: June 11, 2022 1:44:53 PM EDT
Received: June 11, 2022 1:45:11 PM EDT

https://avi-loeb.medium.com/imitation-is-the-sincerest-form-of-flattery-1214c38427e4 <https://gcc02.safelinks.protection.outlook.com/?url=https://avi-loeb.medium.com/imitation-is-the-sincerest-form-of-flattery-1214c38427e4&data=05|01|bill.nelson@nasa.gov|dd1280e78e0f40b44dc108da4bd2212b|7005d45845be48ae8140d43da96dd17b|0|0|637905663115893174|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0=|3000|||&sdata=N/K9sWGzywNc+jF159h+sgoLjUjxe/AG5/RgQoKOjKQ=&reserved=0>

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Avi Loeb <https://gcc02.safelinks.protection.outlook.com/?url=https://medium.com/@avi-loeb?source=email-adb0e108a94b-1654968554397-newsletter.subscribeToProfile----------08fa53f8_dbfa_4e27_9a1b_64e170f1a133--------c9de49b8ef2b&data=05|01|bill.nelson@nasa.gov|dd1280e78e0f40b44dc108da4bd2212b|7005d45845be48ae8140d43da96dd17b|0|0|637905663115893174|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0=|3000|||&sdata=D2NwECxiJ6VzEQNQluHys8wwz/1jgGJIcEjhgY6Jxjw=&reserved=0>

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Imitation is the Sincerest Form of Flattery

On June 4, 2021, NASA’s leading Administrator Bill Nelson said on CNN <https://gcc02.safelinks.protection.outlook.com/?url=http://me.dm/r-I1f5MrknoO?source=email-adb0e108a94b-1654968554397-newsletter.subscribeToProfile----------08fa53f8_dbfa_4e27_9a1b_64e170f1a133--------c9de49b8ef2b&data=05|01|bill.nelson@nasa.gov|dd1280e78e0f40b44dc108da4bd2212b|7005d45845be48ae8140d43da96dd17b|0|0|637905663115893174|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0=|3000|||&sdata=7HCLuA6XjD/V8be8ArxFrw9VFPKJjiJEyYmXxxhOZx8=&reserved=0> that scientists should study the nature of Unidentified Aerial Phenomena (UAP). The following morning, I emailed Dr. Thomas Zurbuchen <https://gcc02.safelinks.protection.outlook.com/?url=http://me.dm/r-VYPd4secvw?source=email-

adb0e108a94b-1654968554397-newsletter.subscribeToProfile----------
08fa53f8_dbfa_4e27_9a1b_64e170f1a133--------
c9de49b8ef2b&data=05|01|bill.nelson@nasa.gov|dd1280e78e0f40b44dc108da4bd2212b|7005d45845be48ae8140d4
3da96dd17b|0|0|637905663115893174|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI
6Ik1haWwiLCJXVCI6Mn0=|3000|||&sdata=XA9hVGq23TN8zUip6Z9WEIdIVUplXjdfCBZTS87UHRw=&reserved=0>,
NASA's Associate Administrator for Science, about possible funding of a scientific research project that would make his boss happy. Thomas graciously called my phone and asked me to send a 2-page white paper. I followed his request within a few hours, but he never got back to me. As a result of not hearing back, I decided to establish the Galileo Project <https://gcc02.safelinks.protection.outlook.com/?url=http://me.dm/r-B_AU4aCZkq?source=email-adb0e108a94b-1654968554397-newsletter.subscribeToProfile----------
08fa53f8_dbfa_4e27_9a1b_64e170f1a133--------
c9de49b8ef2b&data=05|01|bill.nelson@nasa.gov|dd1280e78e0f40b44dc108da4bd2212b|7005d45845be48ae8140d4
3da96dd17b|0|0|637905663115893174|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI
6Ik1haWwiLCJXVCI6Mn0=|3000|||&sdata=LVDkVEfcQcG/FlMptd7biGEbCsqyKfcJjI49ERDRp1U=&reserved=0> in collaboration with Dr. Frank Laukien two months later. This scientific research project followed the narrative of my original White Paper and is supported by private donations to my research fund at Harvard University.

The first time I learned about the outcome of my exchange with Dr. Z was through a press conference held a year later, on June 9, 2022. I became aware of the pending announcement thanks to an email from the Galileo Project <https://gcc02.safelinks.protection.outlook.com/?url=http://me.dm/r-B_AU4aCZkq?source=email-adb0e108a94b-1654968554397-newsletter.subscribeToProfile----------08fa53f8_dbfa_4e27_9a1b_64e170f1a133--------
c9de49b8ef2b&data=05|01|bill.nelson@nasa.gov|dd1280e78e0f40b44dc108da4bd2212b|7005d45845be48ae8140d4
3da96dd17b|0|0|637905663115893174|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI
6Ik1haWwiLCJXVCI6Mn0=|3000|||&sdata=LVDkVEfcQcG/FlMptd7biGEbCsqyKfcJjI49ERDRp1U=&reserved=0>
member, Dr. Alan Stern <https://gcc02.safelinks.protection.outlook.com/?url=http://me.dm/r-D5KL7VLdco?source=email-adb0e108a94b-1654968554397-newsletter.subscribeToProfile----------
08fa53f8_dbfa_4e27_9a1b_64e170f1a133--------
c9de49b8ef2b&data=05|01|bill.nelson@nasa.gov|dd1280e78e0f40b44dc108da4bd2212b|7005d45845be48ae8140d4
3da96dd17b|0|0|637905663115893174|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI
6Ik1haWwiLCJXVCI6Mn0=|3000|||&sdata=2gOubD7o1LatFKv2WhpbiIb1NaO2Y9JjgVpCoNlB7cI=&reserved=0>, who wrote: "I can't imagine you aren't aware of this, but just in case …". Contrary to Alan's expectation, I did not know in advance about NASA's press conference, so I immediately notified the rest of the Galileo Project <https://gcc02.safelinks.protection.outlook.com/?url=http://me.dm/r-B_AU4aCZkq?source=email-adb0e108a94b-1654968554397-newsletter.subscribeToProfile----------08fa53f8_dbfa_4e27_9a1b_64e170f1a133--------
c9de49b8ef2b&data=05|01|bill.nelson@nasa.gov|dd1280e78e0f40b44dc108da4bd2212b|7005d45845be48ae8140d4
3da96dd17b|0|0|637905663115893174|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI
6Ik1haWwiLCJXVCI6Mn0=|3000|||&sdata=LVDkVEfcQcG/FlMptd7biGEbCsqyKfcJjI49ERDRp1U=&reserved=0>
community—which by now contains more than a hundred members.

In the press release <https://gcc02.safelinks.protection.outlook.com/?url=http://me.dm/r-uM--qtn_No?source=email-adb0e108a94b-1654968554397-newsletter.subscribeToProfile----------
08fa53f8_dbfa_4e27_9a1b_64e170f1a133--------
c9de49b8ef2b&data=05|01|bill.nelson@nasa.gov|dd1280e78e0f40b44dc108da4bd2212b|7005d45845be48ae8140d4
3da96dd17b|0|0|637905663115893174|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI
6Ik1haWwiLCJXVCI6Mn0=|3000|||&sdata=sQAkFyF5aoKWIwBuTRXZuu1iD1XKBZg7tHCWQIxrf7M=&reserved=0>,
NASA announced a new independent study on UAP from a scientific perspective. The study will focus on identifying available data, how best to collect future data, and how NASA can use that data to move the scientific understanding of UAP forward. The study is not part of the Department of Defense's Airborne Object Identification and Management Synchronization Group <https://gcc02.safelinks.protection.outlook.com/?url=http://me.dm/r-k802kAQ4PQ?source=email-adb0e108a94b-1654968554397-newsletter.subscribeToProfile----------
08fa53f8_dbfa_4e27_9a1b_64e170f1a133--------

c9de49b8ef2b&data=05|01|bill.nelson@nasa.gov|dd1280e78e0f40b44dc108da4bd2212b|7005d45845be48ae8140d43da96dd17b|0|0|637905663115893174|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0=|3000|||&sdata=+xyWgSoI0+tTc3dTmzVZPcen+PlpGd5vYX9j1kRLTmM=&reserved=0>, and is expected to take about nine months to complete. It will secure the counsel of experts in the scientific, aeronautics, and data analytics communities to focus on how best to collect new data and improve observations of UAP.

I was delighted to see that some of the statements made at the press conference and the resulting news reports, echoed my writings. For example, the Guardian <https://gcc02.safelinks.protection.outlook.com/?url=http://me.dm/r-G0Up2mEWOo?source=email-adb0e108a94b-1654968554397-newsletter.subscribeToProfile----------08fa53f8_dbfa_4e27_9a1b_64e170f1a133--------c9de49b8ef2b&data=05|01|bill.nelson@nasa.gov|dd1280e78e0f40b44dc108da4bd2212b|7005d45845be48ae8140d43da96dd17b|0|0|637905663115893174|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0=|3000|||&sdata=G6yVQoNd0IZOvImlH5+YHDARk2UXiZPKsJKVd8x1C68=&reserved=0> quote: “We have to approach all these questions with a sense of humility,” echoes the theme of my book, “Extraterrestrial <https://gcc02.safelinks.protection.outlook.com/?url=http://me.dm/r-hVEymkE5SL?source=email-adb0e108a94b-1654968554397-newsletter.subscribeToProfile----------08fa53f8_dbfa_4e27_9a1b_64e170f1a133--------c9de49b8ef2b&data=05|01|bill.nelson@nasa.gov|dd1280e78e0f40b44dc108da4bd2212b|7005d45845be48ae8140d43da96dd17b|0|0|637905663115893174|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0=|3000|||&sdata=ZQbyRMpZuX2mqSwB31gD+HN2tBX9X/pjeLedOgF4OrA=&reserved=0>”. As Oscar Wilde noted <https://gcc02.safelinks.protection.outlook.com/?url=http://me.dm/r-YnHAKqVCS8?source=email-adb0e108a94b-1654968554397-newsletter.subscribeToProfile----------08fa53f8_dbfa_4e27_9a1b_64e170f1a133--------c9de49b8ef2b&data=05|01|bill.nelson@nasa.gov|dd1280e78e0f40b44dc108da4bd2212b|7005d45845be48ae8140d43da96dd17b|0|0|637905663115893174|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0=|3000|||&sdata=uswTmMf9Cp/qv2RRPMILF3ZmR8qPwkWuPaQN2MZByoM=&reserved=0>: “Imitation is the sincerest form of flattery.”

Overall, this outcome is gratifying and represents a “win-win” development. The Galileo Project <https://gcc02.safelinks.protection.outlook.com/?url=http://me.dm/r-B_AU4aCZkq?source=email-adb0e108a94b-1654968554397-newsletter.subscribeToProfile----------08fa53f8_dbfa_4e27_9a1b_64e170f1a133--------c9de49b8ef2b&data=05|01|bill.nelson@nasa.gov|dd1280e78e0f40b44dc108da4bd2212b|7005d45845be48ae8140d43da96dd17b|0|0|637905663115893174|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0=|3000|||&sdata=LVDkVEfcQcG/FlMptd7biGEbCsqyKfcJjI49ERDRp1U=&reserved=0> is now likely to receive a boost to its funding from wealthy individuals and foundations with which I am in close contact. But most importantly, the Project’s scientific mission narrative <https://gcc02.safelinks.protection.outlook.com/?url=http://me.dm/r-B_AU4aCZkq?source=email-adb0e108a94b-1654968554397-newsletter.subscribeToProfile----------08fa53f8_dbfa_4e27_9a1b_64e170f1a133--------c9de49b8ef2b&data=05|01|bill.nelson@nasa.gov|dd1280e78e0f40b44dc108da4bd2212b|7005d45845be48ae8140d43da96dd17b|0|0|637905663115893174|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0=|3000|||&sdata=LVDkVEfcQcG/FlMptd7biGEbCsqyKfcJjI49ERDRp1U=&reserved=0> is now echoed within the government.

It does not matter who tells the truth as long as it is being told. As I mentioned to the Jerusalem Post <https://gcc02.safelinks.protection.outlook.com/?url=http://me.dm/r-eb2ndy15RB?source=email-adb0e108a94b-1654968554397-newsletter.subscribeToProfile----------08fa53f8_dbfa_4e27_9a1b_64e170f1a133--------c9de49b8ef2b&data=05|01|bill.nelson@nasa.gov|dd1280e78e0f40b44dc108da4bd2212b|7005d45845be48ae8140d43da96dd17b|0|0|637905663115893174|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0=|3000|||&sdata=QoQc/rZPI3WuYi6AbHinMEJurjagf8UrqurQmY2XLAw=&reserved=0> on the morning of NASA’s press release: “It is wonderful that NASA and scientists will be engaged in unraveling the

nature of UAP … It is a fishing expedition and we will end up with a mixed bag of natural and human-made objects. But even if we have high-quality data on just a single object that demonstrates something else, such as an extraterrestrial technological origin, it would represent the most important discovery in human history."

A day later, I received an email from the leadership team of NASA's Science Mission Directorate, explaining that I was not selected to serve on this study because it represents a non-advocate review that will be conducted in accordance with the principles of the Federal Advisory Committee Act (FACA). In other words, my role in leading the Galileo Project <https://gcc02.safelinks.protection.outlook.com/?url=http://me.dm/r-B_AU4aCZkq?source=email-adb0e108a94b-1654968554397-newsletter.subscribeToProfile----------08fa53f8_dbfa_4e27_9a1b_64e170f1a133--------c9de49b8ef2b&data=05|01|bill.nelson@nasa.gov|dd1280e78e0f40b44dc108da4bd2212b|7005d45845be48ae8140d43da96dd17b|0|0|637905663115893174|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0=|3000|||&sdata=LVDkVEfcQcG/FlMptd7biGEbCsqyKfcJjI49ERDRp1U=&reserved=0> would constitute an apparent conflict of interest. Being true to the words of my White Paper after not getting a response from NASA, led me to establish a new scientific Project on UAP, but it now blocks me from contributing directly to NASA's planning exercise on exactly the same research frontier. Perhaps it is a blessing in disguise, since the Galileo Project <https://gcc02.safelinks.protection.outlook.com/?url=http://me.dm/r-B_AU4aCZkq?source=email-adb0e108a94b-1654968554397-newsletter.subscribeToProfile----------08fa53f8_dbfa_4e27_9a1b_64e170f1a133--------c9de49b8ef2b&data=05|01|bill.nelson@nasa.gov|dd1280e78e0f40b44dc108da4bd2212b|7005d45845be48ae8140d43da96dd17b|0|0|637905663115893174|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0=|3000|||&sdata=LVDkVEfcQcG/FlMptd7biGEbCsqyKfcJjI49ERDRp1U=&reserved=0> has currently no strings attached to the government. In the future, the Project will be able to apply to any relevant funds as they become available.

In gratitude for NASA's explanatory email, I mentioned that I will be delighted to provide any input that could help NASA's study, because it shares the intellectual DNA of the Galileo Project <https://gcc02.safelinks.protection.outlook.com/?url=http://me.dm/r-B_AU4aCZkq?source=email-adb0e108a94b-1654968554397-newsletter.subscribeToProfile----------08fa53f8_dbfa_4e27_9a1b_64e170f1a133--------c9de49b8ef2b&data=05|01|bill.nelson@nasa.gov|dd1280e78e0f40b44dc108da4bd2212b|7005d45845be48ae8140d43da96dd17b|0|0|637905663115893174|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0=|3000|||&sdata=LVDkVEfcQcG/FlMptd7biGEbCsqyKfcJjI49ERDRp1U=&reserved=0>. Government agencies and academia should be working together towards the collection of new evidence-based knowledge on UAP.

It is possible that by the time NASA's study completes its nine-month pregnancy and delivers its independent "baby", the Galileo Project <https://gcc02.safelinks.protection.outlook.com/?url=http://me.dm/r-B_AU4aCZkq?source=email-adb0e108a94b-1654968554397-newsletter.subscribeToProfile----------08fa53f8_dbfa_4e27_9a1b_64e170f1a133--------c9de49b8ef2b&data=05|01|bill.nelson@nasa.gov|dd1280e78e0f40b44dc108da4bd2212b|7005d45845be48ae8140d43da96dd17b|0|0|637905663115893174|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0=|3000|||&sdata=LVDkVEfcQcG/FlMptd7biGEbCsqyKfcJjI49ERDRp1U=&reserved=0> will discover evidence that will change the charter of NASA's report. The Galileo Project <https://gcc02.safelinks.protection.outlook.com/?url=http://me.dm/r-B_AU4aCZkq?source=email-adb0e108a94b-1654968554397-newsletter.subscribeToProfile----------08fa53f8_dbfa_4e27_9a1b_64e170f1a133--------c9de49b8ef2b&data=05|01|bill.nelson@nasa.gov|dd1280e78e0f40b44dc108da4bd2212b|7005d45845be48ae8140d43da96dd17b|0|0|637905663115893174|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0=|3000|||&sdata=LVDkVEfcQcG/FlMptd7biGEbCsqyKfcJjI49ERDRp1U=&reserved=0> is currently assembling <https://gcc02.safelinks.protection.outlook.com/?url=http://me.dm/r-9jX9KZ34KI?source=email-adb0e108a94b-1654968554397-newsletter.subscribeToProfile----------08fa53f8_dbfa_4e27_9a1b_64e170f1a133--------

c9de49b8ef2b&data=05|01|bill.nelson@nasa.gov|dd1280e78e0f40b44dc108da4bd2212b|7005d45845be48ae8140d43da96dd17b|0|0|637905663115893174|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0=|3000|||&sdata=ZHXR9I8l0HrSGSQFcbZb9zMonAmrkpmcNnm91e17hiU=&reserved=0> its first telescope system on the roof of the Harvard College Observatory <https://gcc02.safelinks.protection.outlook.com/?url=http://me.dm/r-7c33t1qwJU?source=email-adb0e108a94b-1654968554397-newsletter.subscribeToProfile----------08fa53f8_dbfa_4e27_9a1b_64e170f1a133--------c9de49b8ef2b&data=05|01|bill.nelson@nasa.gov|dd1280e78e0f40b44dc108da4bd2212b|7005d45845be48ae8140d43da96dd17b|0|0|637905663115893174|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0=|3000|||&sdata=t6ya/+D2SPjIEDpfLfKpqkuBp5JdHM/eA6Ems3Dadws=&reserved=0>, planning an expedition <https://gcc02.safelinks.protection.outlook.com/?url=http://me.dm/r-m1rnaI1Rv4?source=email-adb0e108a94b-1654968554397-newsletter.subscribeToProfile----------08fa53f8_dbfa_4e27_9a1b_64e170f1a133--------c9de49b8ef2b&data=05|01|bill.nelson@nasa.gov|dd1280e78e0f40b44dc108da4bd2212b|7005d45845be48ae8140d43da96dd17b|0|0|637905663115893174|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0=|3000|||&sdata=sFGE/18377o1W/kOPzZ8cujbxHbaC96MgxCyAUC+EIE=&reserved=0> to retrieve fragments from the first interstellar meteor <https://gcc02.safelinks.protection.outlook.com/?url=http://me.dm/r-smdZsrIpBb?source=email-adb0e108a94b-1654968554397-newsletter.subscribeToProfile----------08fa53f8_dbfa_4e27_9a1b_64e170f1a133--------c9de49b8ef2b&data=05|01|bill.nelson@nasa.gov|dd1280e78e0f40b44dc108da4bd2212b|7005d45845be48ae8140d43da96dd17b|0|0|637905663115893174|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0=|3000|||&sdata=hTsJHf16s/Tlpwc8csje7A130AAej6Q28eFbRyU4T5I=&reserved=0>, studying satellite <https://gcc02.safelinks.protection.outlook.com/?url=http://me.dm/r-Pc25KsmB9N?source=email-adb0e108a94b-1654968554397-newsletter.subscribeToProfile----------08fa53f8_dbfa_4e27_9a1b_64e170f1a133--------c9de49b8ef2b&data=05|01|bill.nelson@nasa.gov|dd1280e78e0f40b44dc108da4bd2212b|7005d45845be48ae8140d43da96dd17b|0|0|637905663116049411|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0=|3000|||&sdata=1x66KpOxBwrxpGgabatuO8ycbl/w6/HVzz951sweOKw=&reserved=0> data on UAP from above, and designing <https://gcc02.safelinks.protection.outlook.com/?url=http://me.dm/r-49zuweRS4G?source=email-adb0e108a94b-1654968554397-newsletter.subscribeToProfile----------08fa53f8_dbfa_4e27_9a1b_64e170f1a133--------c9de49b8ef2b&data=05|01|bill.nelson@nasa.gov|dd1280e78e0f40b44dc108da4bd2212b|7005d45845be48ae8140d43da96dd17b|0|0|637905663116049411|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0=|3000|||&sdata=as9emQqnhOB23Q/0A+E+31ZH4zIoNG696KZNs4XwO1Y=&reserved=0> a space mission to rendezvous with the next anomalous (`Oumuamua <https://gcc02.safelinks.protection.outlook.com/?url=http://me.dm/r-jZtaP4L7Bk?source=email-adb0e108a94b-1654968554397-newsletter.subscribeToProfile----------08fa53f8_dbfa_4e27_9a1b_64e170f1a133--------c9de49b8ef2b&data=05|01|bill.nelson@nasa.gov|dd1280e78e0f40b44dc108da4bd2212b|7005d45845be48ae8140d43da96dd17b|0|0|637905663116049411|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0=|3000|||&sdata=iujydnVRF+fQFuSKFr5CEguY/rJxIGOTKIhmb29HpVs=&reserved=0>-like) interstellar object.

Before NASA’s announcement, it was common practice among scientists to ridicule the scientific study of UAP. The ridicule was surprisingly strong and public <https://gcc02.safelinks.protection.outlook.com/?url=http://me.dm/r-xclXP_WDFn?source=email-adb0e108a94b-1654968554397-newsletter.subscribeToProfile----------08fa53f8_dbfa_4e27_9a1b_64e170f1a133--------c9de49b8ef2b&data=05|01|bill.nelson@nasa.gov|dd1280e78e0f40b44dc108da4bd2212b|7005d45845be48ae8140d43da96dd17b|0|0|637905663116049411|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0=|3000|||&sdata=XpuZzmyu2BSaYfEHTyHoyfSpGCYfEqq6JwFEfGjDVVI=&reserved=0> within the traditional SETI community, with one exception—Seth Shostak who joined the Galileo Project <https://gcc02.safelinks.protection.outlook.com/?url=http://me.dm/r-B_AU4aCZkq?source=email-adb0e108a94b-1654968554397-newsletter.subscribeToProfile----------08fa53f8_dbfa_4e27_9a1b_64e170f1a133--------

c9de49b8ef2b&data=05|01|bill.nelson@nasa.gov|dd1280e78e0f40b44dc108da4bd2212b|7005d45845be48ae8140d43da96dd17b|0|0|637905663116049411|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0=|3000|||&sdata=y4hzfYxz25FA4KLNZLps2vp7oouyloQqrGcjkBw6y/Q=&reserved=0> after publishing a brave supportive article <https://gcc02.safelinks.protection.outlook.com/?url=http://me.dm/r-9nv7hRK7ax?source=email-adb0e108a94b-1654968554397-newsletter.subscribeToProfile----------08fa53f8_dbfa_4e27_9a1b_64e170f1a133--------c9de49b8ef2b&data=05|01|bill.nelson@nasa.gov|dd1280e78e0f40b44dc108da4bd2212b|7005d45845be48ae8140d43da96dd17b|0|0|637905663116049411|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0=|3000|||&sdata=qovne9mbe2pxAARvpz5IkA0em4RzqykFDJZXqR10vtQ=&reserved=0> in Scientific American.

Perhaps hope can be drawn from the story about a congressman <https://gcc02.safelinks.protection.outlook.com/?url=http://me.dm/r-50PN7w9JPq?source=email-adb0e108a94b-1654968554397-newsletter.subscribeToProfile----------08fa53f8_dbfa_4e27_9a1b_64e170f1a133--------c9de49b8ef2b&data=05|01|bill.nelson@nasa.gov|dd1280e78e0f40b44dc108da4bd2212b|7005d45845be48ae8140d43da96dd17b|0|0|637905663116049411|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0=|3000|||&sdata=zFJNt8AHsehHt8yiez+OC+APLfWnAi4pln5R/ws72hM=&reserved=0> who made anti-gay statements until he confessed that he is gay. The only people who appear “normal” to us are those that we do not know very well.

Open mindedness applies also to scientific research. We should explore the unknown by seeking evidence agnostically and not assuming what we might find. Gladly, we now know that both the Galileo Project <https://gcc02.safelinks.protection.outlook.com/?url=http://me.dm/r-B_AU4aCZkq?source=email-adb0e108a94b-1654968554397-newsletter.subscribeToProfile----------08fa53f8_dbfa_4e27_9a1b_64e170f1a133--------c9de49b8ef2b&data=05|01|bill.nelson@nasa.gov|dd1280e78e0f40b44dc108da4bd2212b|7005d45845be48ae8140d43da96dd17b|0|0|637905663116049411|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0=|3000|||&sdata=y4hzfYxz25FA4KLNZLps2vp7oouyloQqrGcjkBw6y/Q=&reserved=0> and NASA agree on following this principle.

ABOUT THE AUTHOR

Avi Loeb is the head of the Galileo Project, founding director of Harvard University’s—Black Hole Initiative, director of the Institute for Theory and Computation at the Harvard-Smithsonian Center for Astrophysics, and the former chair of the astronomy department at Harvard University (2011–2020). He chairs the advisory board for the Breakthrough Starshot project, and is a former member of the President’s Council of Advisors on Science and Technology and a former chair of the Board on Physics and Astronomy of the National Academies. He is the bestselling author of “Extraterrestrial: <https://gcc02.safelinks.protection.outlook.com/?url=http://me.dm/r-Ei84mwIx_w?source=email-adb0e108a94b-1654968554397-newsletter.subscribeToProfile----------08fa53f8_dbfa_4e27_9a1b_64e170f1a133--------c9de49b8ef2b&data=05|01|bill.nelson@nasa.gov|dd1280e78e0f40b44dc108da4bd2212b|7005d45845be48ae8140d43da96dd17b|0|0|637905663116049411|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0=|3000|||&sdata=w4lgqm/zgdnhetK4XxZ9AfnZce93aPkeMEDIcx+prdk=&reserved=0>The First Sign of Intelligent Life Beyond Earth <https://gcc02.safelinks.protection.outlook.com/?url=http://me.dm/r-Ei84mwIx_w?source=email-adb0e108a94b-1654968554397-newsletter.subscribeToProfile----------08fa53f8_dbfa_4e27_9a1b_64e170f1a133--------c9de49b8ef2b&data=05|01|bill.nelson@nasa.gov|dd1280e78e0f40b44dc108da4bd2212b|7005d45845be48ae8140d43da96dd17b|0|0|637905663116049411|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0=|3000|||&sdata=w4lgqm/zgdnhetK4XxZ9AfnZce93aPkeMEDIcx+prdk=&reserved=0>” and a co-author of the textbook “Life in the Cosmos <https://gcc02.safelinks.protection.outlook.com/?url=http://me.dm/r-nVUotn4yw6?source=email-adb0e108a94b-1654968554397-newsletter.subscribeToProfile----------08fa53f8_dbfa_4e27_9a1b_64e170f1a133--------

c9de49b8ef2b&data=05|01|bill.nelson@nasa.gov|dd1280e78e0f40b44dc108da4bd2212b|7005d45845be48ae8140d43da96dd17b|0|0|637905663116049411|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0=|3000|||&sdata=S/7hQx/+2OaI7zatALJG+EEvoZOrbBGM3h+6azYudGE=&reserved=0>", both published in 2021.

Respond on Medium <https://gcc02.safelinks.protection.outlook.com/?url=https://medium.com/p/1214c38427e4?responsesOpen=true&source=email-adb0e108a94b-1654968554397-newsletter.subscribeToProfile----------08fa53f8_dbfa_4e27_9a1b_64e170f1a133--------c9de49b8ef2b&data=05|01|bill.nelson@nasa.gov|dd1280e78e0f40b44dc108da4bd2212b|7005d45845be48ae8140d43da96dd17b|0|0|637905663116049411|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0=|3000|||&sdata=pMCrPPpUFjE4pb6lkZ+rvH2qSiStn7mLv5GUXeRoHFA=&reserved=0>

View story <https://gcc02.safelinks.protection.outlook.com/?url=https://medium.com/p/1214c38427e4?source=email-adb0e108a94b-1654968554397-newsletter.subscribeToProfile----------08fa53f8_dbfa_4e27_9a1b_64e170f1a133--------c9de49b8ef2b&data=05|01|bill.nelson@nasa.gov|dd1280e78e0f40b44dc108da4bd2212b|7005d45845be48ae8140d43da96dd17b|0|0|637905663116049411|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0=|3000|||&sdata=y+IE6+YTY9Jv8/YI6s3N4FdcyCOvFbJ2ykdJVJzpYiM=&reserved=0>

WEEKLY MESSAGING & NASA INTERVIEW PREP DOCUMENT - as of 6-10-22 (internal distribution only)

From: Beutel, Allard (HQ-NA000) <allard.beutel@nasa.gov>
Sent: June 11, 2022 12:47:21 AM EDT
Received: June 11, 2022 12:48:23 AM EDT
Attachments: NASA INTERVIEW PREP DOCUMENT - as of 6-10-22.docx

Good evening, attached is the latest weekly messaging and NASA interview prep document.

UPCOMING SCHEDULED/EXPECTED KEY EVENTS WEEK OF JUNE 12

• TROPICS Mission Launch

• LOFTID Media Day

OTHER RECENT HOT TOPICS

• International Space Station Integrated Crew Agreement Reports (new)

• NASA Establishes Independent Study on Unidentified Aerial Phenomena (new)

• Mobile Launcher 2 OIG Report (new)

• NASA SpaceX CRS-25 w/ Climate Research EMIT Launch to International Space Station Status (updated)

• Artemis I on Launch Pad for Testing (updated)

• CAPSTONE Lunar CubeSat Update (updated)

• France Artemis Accords Signing (updated)

• Crew Launch to China’s Space Station (updated)

• Webb Telescope Update (updated)

The Upcoming Events Public Dates section also is updated.

-Allard

Attachment

1. NASA INTERVIEW PREP DOCUMENT - as of 6-10-22.docx

Type:	application/vnd.openxmlformats-officedocument.wordprocessingml.document
Size:	66 KB (67,983 bytes)

Attachment #1

NASA INTERVIEW PREP DOCUMENT - as of 6-10-22.docx

Original view

14 pages (displayed on pages 4 to 17)

INTERNAL DISTRIBUTION ONLY
Updated 6/10/22

NASA INTERVIEW PREP DOCUMENT

Quick Reference

Upcoming Events
Public Dates

UPCOMING SCHEDULED/EXPECTED KEY EVENTS WEEK OF JUNE 12

- **TROPICS Mission Launch**
- **LOFTID Media Day**

TROPICS Mission Launch

NASA and Astra Space are targeting no earlier than Sunday, June 12, for the first launch of NASA's Time-Resolved Observations of Precipitation structure and storm Intensity with a Constellation of Smallsats (TROPICS) mission. The launch window opens at noon EDT. The first two of six NASA small satellites will launch aboard Astra's Rocket 3.3 from Space Launch Complex 46 at Cape Canaveral Space Force Station in Florida.

NASA innovates for the benefit of humanity, improving life on Earth through climate and technological innovations, such as the agency's TROPICS mission.

- NASA and Astra Space are launching the first two of six small satellites no earlier than June 12 that will study the formation and development of tropical cyclones almost every hour – that's about four to six times more often than is possible with current satellites.
- This is the first of three CubeSat launches for NASA's Time-Resolved Observations of Precipitation structure and storm Intensity with a Constellation of Smallsats (TROPICS) mission.
    - The remaining satellites will be placed into their low-Earth orbits during two subsequent launches this year. When all CubeSats are launched, the TROPICS satellites will be spread across three orbital planes to cover more of the globe more frequently.
- The CubeSats, each about the size of a loaf of bread, will work in concert to provide microwave observations of a storm's precipitation, temperature, and humidity as quickly as every 50 minutes.
- Scientists expect the data will help them understand the factors driving tropical cyclone intensification by filling in current observational gaps that could lead to improved weather forecast models, helping decision makers and first responders.
- TROPICS is an Earth Venture-Instrument mission – science-driven, competitively selected, low-cost missions that provide opportunity for investment in innovative Earth science to enhance our capability to better understand the current state of the Earth system and to enable continual improvement in the prediction of future changes.
- The TROPICS team is led by Bill Blackwell at MIT's Lincoln Laboratory in Lexington, Massachusetts, and includes researchers from NASA, NOAA, and several universities and commercial partners. NASA's Launch Services Program, based at the agency's Kennedy Space Center in Florida, will manage the launch service.

LOFTID Media Day - NASA to Inflate Heat Shield on Earth Before Spaceflight Demo

NASA is inviting media to see the agency's Low-Earth Orbit Flight Test of an Inflatable Decelerator (LOFTID) after it is inflated for the final time on Earth before its spaceflight demonstration later this year. The event will take place beginning 2 p.m. EDT Wednesday, June 15, at NASA's Langley Research Center in Hampton, Virginia.

NASA explores the unknown in air and space, and develops technological innovations, such as the agency's Low-Earth Orbit Flight Test of an Inflatable Decelerator heat shield, for the benefit of humanity.

- The Low-Earth Orbit Flight Test of an Inflatable Decelerator (LOFTID) is a cross-cutting aeroshell – a type of heat shield – for atmospheric re-entry that could one day help land astronauts on Mars.
- It's scheduled to launch with the National Oceanic and Atmospheric Administration's Joint Polar Surveyor System-2 (JPSS-2) polar-orbiting satellite from Vandenberg Space Force Base in California on Nov. 1.
- After hitching a ride to space inside a United Launch Alliance (ULA) Atlas V rocket, LOFTID will be deployed, inflate, and then begin a re-entry trajectory from low-Earth orbit to demonstrate the inflatable heat shield's ability to slow down and survive re-entry.
    - For destinations with an atmosphere, one of the challenges NASA faces is how to deliver heavy payloads (experiments, equipment, and people) because current rigid aeroshells are constrained by a rocket's shroud size. One answer is an inflatable aeroshell that can be deployed to a scale much larger than the shroud.
    - This technology could be used for both crewed and large robotic missions to Mars, in addition to enabling a variety of proposed NASA missions to destinations such as Mars, Venus, Titan, as well as return to Earth.
- Engineers at NASA's Langley Research Center are completing work to ensure LOFTID is flight-ready before it is shipped to NASA's Goddard Space Flight Center in Greenbelt, Maryland, for final acceptance testing, then to Vandenberg for launch.
- Participants in the LOFTID media day include:
    - Jim Reuter, associate administrator for the Space Technology Mission Directorate (STMD), NASA Headquarters
    - Trudy Kortes, director of technology demonstrations for STMD, NASA Headquarters
    - Joe Del Corso, LOFTID project manager, NASA Langley
    - John Reed, ULA chief rocket scientist
- NASA and United Launch Alliance (ULA) are dedicating the LOFTID mission in honor of Bernard Kutter, manager of advanced programs at ULA, who passed away in August 2020.

OTHER RECENT HOT TOPICS

International Space Station Integrated Crew Agreement Reports
On June 10, media began reporting Russia's government approved the request from the Russian space agency Roscosmos to conduct negotiations with NASA on signing an integrated crew agreement to routinely fly integrated astronauts and cosmonauts to the International Space Station aboard Soyuz and commercial crew spacecraft. Below is our response for comment:

- NASA continues working toward an agreement with Roscosmos whereby we would routinely fly integrated crews to the International Space Station aboard Soyuz and the commercial crew spacecraft.

NASA Establishes Independent Study on Unidentified Aerial Phenomena
NASA announced on June 9 a new science study on Unidentified Aerial Phenomena.

- Consistent with NASA's mission to explore the unknown in air and in space, NASA is commissioning an Unidentified Aerial Phenomena Independent Study Team in order to examine Unidentified Aerial Phenomena (UAP) from a scientific perspective.
    - It will focus on how NASA can use data and the tools of science to move our understanding of UAPs forward.

- The study is expected to take nine months. NASA will commission the team to deliver an independent, unclassified report that we will subsequently publish.
    - The study will gather data from a wide range: civilians, government, non-profits, and companies. It will secure the counsel of experts in the scientific, aeronautics, and data analytics communities to focus on how best to collect new data and improve observations of UAPs.
- Unidentified phenomena in the atmosphere are of interest for both national security and air safety. Establishing which events are natural provides a key first step to identifying or mitigating such phenomena.
- Most UAP sightings result in very limited data, making it difficult to draw scientific conclusions about the nature of UAPs. There is no evidence UAPs are extra-terrestrial in origin.
    - One of NASA's key goals is the search for life in the universe, however, the agency has yet to find any credible evidence of extraterrestrial life.
- The agency is not part of the Department of Defense's Unidentified Aerial Phenomena Task Force or its successor, the Airborne Object Identification and Management Synchronization Group. However, NASA has coordinated widely across the government regarding how to apply the tools of science to shed light on the nature and origin of unidentified aerial phenomena.

Mobile Launcher 2 OIG Report
On June 9, the NASA Office of Inspector General issued a report on NASA's management of Artemis' Mobile Launcher 2 contract. NASA's official response is on pages 43 to 47 in the report. Below is our public statement:

- NASA is implementing recommendations from several recent internal and external reviews to improve oversight and management of the contract to develop and build a second mobile launcher capable of launching more powerful versions of the SLS rocket. NASA is working closely with Bechtel on a forward plan to achieve the best performance, cost, and schedule outcome. NASA also is taking steps to ensure all major acquisitions and contract management practices are reviewed at the highest levels of leadership. This includes designating an agency chief acquisition officer to improve transparency with external stakeholders and ensure recommendations are implemented.

NASA SpaceX CRS-25 w/ Climate Research EMIT Launch to International Space Station Status
NASA and SpaceX are targeting no earlier than Tuesday, June 28 for the launch of the cargo Dragon spacecraft flight, designated CRS-25, to the International Space Station, pending variables, including availability on the Eastern Range and space station scheduling. The joint teams stood down from a launch attempt on June 10 from Launch Complex 39A at NASA's Kennedy Space Center in Florida. after elevated vapor readings were measured during propellant loading of the Dragon.

NASA explores the unknown in air and space, innovates for the benefit of humanity, and inspires the world through discovery.

- SpaceX's 25th contract resupply mission under the second Commercial Resupply Services contract (CRS-2) will deliver more than 4,500 pounds of cargo, hardware, technology demonstrations, and science experiences to the International Space Station, including NASA's next investigation to monitor climate change, the Earth Surface Mineral Dust Source Investigation (EMIT).

  - EMIT will identify the composition of mineral dust from Earth's arid regions and analyze dust carried through the atmosphere from deserts to see what effects it has on the planet, further advancing NASA's data contributions to monitoring climate change.
- SpaceX's Dragon spacecraft will deliver other investigations, including:
  - **BeaverCube** has two objectives, one is to measure cloud properties, ocean surface temperatures and ocean color to study Earth's climate and weather systems. It will also demonstrate an application for the use of shape memory alloy technology via in-orbit calibration.
  - **Suture In Space**, an investigation from ESA (European Space Agency), examines the behavior of sutures and wound healing in microgravity. Informs understanding of suturing materials and techniques suitable for future space missions to the Moon and Mars.
  - **DynaMoS** examines how microgravity affects metabolic interactions in communities of soil microbes. Improved understanding of the function of soil microorganism communities also could reveal ways to optimize these communities to support agricultural production on Earth.
  - **Biopolymer Research for In-Situ Capabilities** looks at how microgravity affects the process of creating a concrete alternative made with an organic material and on-site materials such as lunar or Martian dust, known as a biopolymer soil composite (BPC). BPCs also could offer an environmentally-friendly concrete alternative to make lunar and Martian habitats, as well as structures on Earth.
  - A NASA Student Payload Opportunity with Citizen Science (**SPOCS**) program opportunity, which provides students enrolled in institutions of higher learning the opportunity to design and build an experiment to fly to and return from the International Space Station.
- The spacecraft is expected to spend about a month attached to the orbital outpost before it returns to Earth with research and return cargo, splashing down off the coast of Florida.
- The International Space Station serves as the world's leading laboratory where researchers conduct cutting-edge research and technology development that will enable human and robotic exploration of destinations beyond low-Earth orbit, including Mars.
- The International Space Station facilitates the growth of a robust commercial market in low-Earth orbit for scientific research, technology development, and human and cargo transportation. It's also the blueprint for global cooperation -- one that enables a U.S.-led multinational partnership and advances shared goals in space exploration.
- The International Space Station is a convergence of science, technology, and human innovation that demonstrates new technologies and enables research not possible on Earth. NASA recently celebrated 21 years of continuous human presence aboard the orbiting laboratory, which has hosted 258 people and a variety of international and commercial spacecraft. The space station remains the springboard to NASA's next great leaps in exploration, including future human missions to the Moon and eventually to Mars.

Artemis I on Launch Pad for Testing

NASA is targeting Saturday, June 18, for the beginning of the next wet dress rehearsal test of the agency's Space Launch System (SLS) rocket and Orion spacecraft at the Kennedy Space Center in Florida with tanking operations on Monday, June 20.

NASA explores the unknown in air and space, exploring at the Moon with the agency's Artemis program and then sending astronaut on to Mars.

- NASA's lunar exploration program is called Artemis. Artemis missions will turn science fiction into science fact as we make new discoveries, advance technologies, and learn to live and work on another world.
- Wet dress rehearsal is the final major test of the integrated Space Launch System rocket and Orion spacecraft system before the Artemis I flight test launch.
    - During the test, launch teams will rehearse operations to load propellant into the rocket's tanks, conduct a full launch countdown, demonstrate the ability to recycle the countdown clock, and drain the tanks to give them an opportunity to practice the timelines and procedures they will use for launch.
- Artemis I is an uncrewed flight test, the first in a series of increasingly complex missions to the Moon in preparation for human missions to Mars. The flight test, targeted for no earlier than August, will allow NASA to check out rocket and spacecraft systems before crew fly aboard on Artemis II. NASA will target a more specific launch date after wet dress rehearsal.
- Prior to landing astronauts on the lunar surface, NASA is focused on the Artemis I uncrewed and Artemis II crewed flights around the Moon. Those missions, as well as a future uncrewed lander demonstration mission with SpaceX, will precede the Artemis III mission, when astronauts will land on the Moon for new scientific exploration.
- With Artemis missions, NASA will land the first woman and first person of color on the Moon, using innovative technologies to explore more of the lunar surface than ever before for the benefit of all. We will collaborate with commercial and international partners and establish the first long-term presence on the Moon. Then, we will use what we learn on and around the Moon to take the next giant leap: sending the first astronauts to Mars.

CAPSTONE Lunar CubeSat Update

NASA provided the following update June 8: NASA, Rocket Lab, and Advanced Space are no longer targeting June 13 for the launch of the CAPSTONE mission to the Moon. Flight software is being updated. A revised schedule will be provided as soon as possible. Since arriving in New Zealand, CAPSTONE was successfully fueled and integrated with the Lunar Photon upper stage by teams from Rocket Lab, Terran Orbital, and Stellar Exploration. CAPSTONE and Photon have been encapsulated in the payload fairing.

NASA explores the unknown in air and space, leads worldwide partnerships, and explores at the Moon with the agency's Artemis program that will lead to sending astronauts on to Mars.

- CAPSTONE will be the first spacecraft to demonstrate a unique lunar orbit intended for NASA's Gateway – a planned multipurpose outpost around the Moon that will provide essential support for long-term astronaut lunar missions as part of the Artemis program.
- CAPSTONE – short for the Cislunar Autonomous Positioning System Technology Operations and Navigation Experiment – is microwave oven-size CubeSat will serve as the first spacecraft to test a unique lunar orbit that has never been flown before. The orbit, formally known as a near rectilinear halo orbit (NRHO), is an elongated orbit located at a precise balance point between the gravities of Earth and the Moon.
- CAPSTONE will help reduce risk of future long-term deep space missions – like Gateway – by validating innovative navigation technologies and verifying the dynamics of this orbit.
- CAPSTONE's mission will demonstrate multiple technologies and lay a foundation for commercial support of future lunar operations.
- CAPSTONE will launch aboard a Rocket Lab's Electron rocket from the company's Launch Complex 1 in New Zealand and spend four-months traveling to the NRHO.

  - While this gravity-driven track takes longer to reach the Moon, it will dramatically reduce the amount of fuel this pathfinder CubeSat will need to fly there.
- NASA partners will test cutting-edge tools for mission planning and operations, paving the way and expanding opportunities for small and more affordable space and exploration missions to the Moon, Mars, and other destinations throughout the solar system.
- The CAPSTONE mission is built on the capabilities of American small businesses.
  - Many of the mission's small business partners have roots in the NASA Small Business Innovation Research / Small Business Innovation Research and Small Business Technology Transfer program.
- NASA Commercial Partners:
  - Advanced Space of Westminster, Colorado
  - Tyvak Nano-Satellite Systems, a Terran Orbital Corporation, of Irvine, California
  - Stellar Exploration, Inc. of San Luis Obispo, California
  - Rocket Lab of Long Beach, California
- CAPSTONE is expected to maintain its NRHO lunar orbit for approximately six months.

France Artemis Accords Signing

On June 7, France signed the Artemis Accords during an event at the Ambassador of France to the United States' residence in Washington, D.C.

NASA inspires the world through discovery, leading worldwide partnerships, such as the Artemis Accords, aligned with our values and vision.

- The Artemis Accords, signed by 20 countries so far, establish a practical set of principles to guide space exploration cooperation on and around the Moon among nations participating in the agency's 21st century lunar exploration plans.
- While NASA is leading Artemis, which includes sending the first woman and first person of color to the Moon, international partnerships will play a key role in achieving a sustainable and robust presence on the Moon later this decade while preparing to conduct a historic human mission to Mars.
- The Artemis Accords reinforce and implement the 1967 Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies, otherwise known as the Outer Space Treaty. They also reinforce the commitment by the U.S. and partner nations to the Registration Convention, the Agreement on the Rescue of Astronauts, and other norms of behavior that NASA and its partners have supported, including the public release of scientific data.
- The principles of the Artemis Accords are:
  - Peaceful Exploration: All activities conducted under Artemis must be for peaceful purposes
  - Transparency: Artemis Accords signatories will conduct their activities in a transparent fashion to avoid confusion and conflicts
  - Interoperability: Nations participating in the Artemis program will strive to support interoperable systems to enhance safety and sustainability
  - Emergency Assistance: Artemis Accords signatories commit to rendering assistance to personnel in distress
  - Registration of Space Objects: Any nation participating in Artemis must be a signatory to the Registration Convention or become a signatory with alacrity
  - Release of Scientific Data: Artemis Accords signatories commit to the public release of scientific information, allowing the whole world to join us on the Artemis journey

  - Preserving Heritage: Artemis Accords signatories commit to preserving outer space heritage
  - Space Resources: Extracting and utilizing space resources is key to safe and sustainable exploration and the Artemis Accords signatories affirm that such activities should be conducted in compliance with the Outer Space Treaty
  - Deconfliction of Activities: The Artemis Accords nations commit to preventing harmful interference and supporting the principle of due regard, as required by the Outer Space Treaty
  - Orbital Debris: Artemis Accords countries commit to planning for the safe disposal of debris
- NASA, in coordination with the U.S. Department of State, announced the establishment of the Artemis Accords in 2020. The Artemis Accords reinforce and implement the 1967 Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies, otherwise known as the Outer Space Treaty. They also reinforce the commitment by the United States and partner nations to the Registration Convention, the Agreement on the Rescue of Astronauts, and other norms of behavior that NASA and its partners have supported, including the public release of scientific data.
- Additional countries will join the Artemis Accords in the months and years ahead, as NASA continues to work with its international partners to establish a safe, peaceful, and prosperous future in space. Working with both new and existing partners will add new energy and capabilities to ensure the entire world can benefit from our journey of exploration and discovery.

Crew Launch to China's Space Station
On June 5 (local time), China launched its next crew mission to its space station in low-Earth orbit. Below is our response to public and media calls for comment:

- NASA uses space and science as a unifying force. Exploration is a global endeavor, each milestone contributing to humanity's understanding of the universe, and we look forward to China's contributions to increased scientific understanding.

Webb Telescope Update
NASA's James Webb Space Telescope launched Dec. 25, 2021, arrived at its orbit Jan. 24, 2022, and has been undergoing checks and preps for full operations. NASA will release Webb's first full-color images and spectroscopic data on July 12, 2022. The agency also provided this written update June 9.

NASA explores the unknown in air and space, solving mysteries of our solar system and beyond with great observatories, such the agency's Webb Telescope.

- NASA's Webb Telescope will explore every phase of cosmic history – from within the solar system to the most distant observable galaxies in the early universe, and everything in between.
- NASA's James Webb Space Telescope is the largest space observatory and the most technically complex science mission NASA has ever built. It will be the world's premier space science observatory and explore every phase of 13.5 billion years of cosmic history, including our solar system, distant observable galaxies in the early universe, and everything in between.
  - Using its 21-foot (6.5 meter) mirror, Webb will see the light from the first galaxies that formed in the early universe and observe the birth of stellar systems.

  - Webb will explore distant worlds and study the atmospheres of planets orbiting other stars, known as exoplanets, searching for chemical fingerprints of habitability.
- Webb will help us understand the origins of the universe and our place in it.
- Webb is an international program led by NASA with its international agency partners, ESA (European Space Agency) and the Canadian Space Agency (CSA). The mission has been developed over two decades, with contributions from thousands of scientists, engineers, and other professionals from more than 14 countries and 29 U.S. states.
- Webb Mission Objectives: Webb's revolutionary technology will study every phase of cosmic history – from the first galaxies that formed after the big bang to newly discovered comets and moons in our solar system, and everything in space and time in between. With Webb, this rich cosmic history is now within our reach. Webb will enable the following:
  - Search for and discover some of the first galaxies in the universe, expanding our understanding of the early universe
  - Study galaxies near and far, young and old, to understand how galaxies assemble and change over time
  - Uncover the details of how stars and planets are born, by using infrared wavelengths to see through the massive clouds of dust that enshroud them
  - Reveal new details of planets, within our own solar system and beyond, to determine their formation and evolution and do comparative studies
- Webb represents NASA's largest international space science program, embodies NASA's values of teamwork and excellence, and will enable scientific breakthroughs we can't yet imagine.
- Webb has four science instruments: Near-Infrared Camera (NIRCam), Near-Infrared Spectrograph (NIRSpec), Mid-Infrared Instrument (MIRI), and Near-Infrared Imager and Slitless Spectrograph (NIRISS) with the Fine Guidance Sensor (FGS).
- Webb will complement the science achieved by other NASA space observatories, such as Hubble, Spitzer, and Chandra.
- If asked about the changing the telescope name: NASA's History Office conducted an exhaustive search through currently accessible archives on James Webb and his career. Our historians also talked to experts who previously researched this topic extensively. NASA found no evidence at this point that warrants changing the name of the telescope. The NASA Historian is wrapping up research from additional historical archives that were closed due to COVID-19. NASA plans to share information about the research after that is complete.

Hurricanes and NASA

June 1 was the official start of the Atlantic Ocean hurricane season, which runs to Nov. 30.

NASA innovates for the benefit of humanity by improving life on Earth through climate research and making our data and innovations accessible to all.

- After 2021 brought the third-highest number of named storms on record, NASA once again is prepared to help understand and monitor these storms from its unique vantage point of space.
- Climate change is increasing the heat in the ocean basins and making it more likely that storms will intensify faster and be stronger, a phenomenon NASA scientists continue to study.
- NASA plays a foundational role in the science of hurricanes, using data from its 20-plus Earth-observing satellites, including:
  - Sentinel-6 Michael Freilich
  - Global Precipitation Measurement
  - Cyclone Global Navigation Satellite System, others,

  - and the soon-to-be launched Time-Resolved Observations of Precipitation structure and storm Intensity with a Constellation of Smallsats (TROPICS) mission.
- When it comes to operational forecasting, the agency's main role is through its crucial partnership with the National Oceanic and Atmospheric Administration (NOAA). NASA designs, builds, and launches NOAA's suite of satellites that provide the data that specifically feed numerical weather prediction models.
- NASA Administrator Bill Nelson said: "Addressing and mitigating the effects of climate change like hurricanes are at the core of NASA's mission. From the agency's upcoming TROPICS mission that will help scientists understand the factors driving storm intensification and contribute to weather forecasting models, to the creation of the Earth Information Center to ensure game-changing NASA climate data is accessible and understandable to decision-makers, NASA will continue to help communities better prepare for and recover from these weather events."
- NASA's goal for American disaster preparedness, response, mitigation, and recovery is bringing data to people who need it. Before, during, and after a hurricane makes landfall, NASA satellites are in prime positions to identify impacts.
- NASA supports risk reduction, response, and recovery for hurricanes and tropical cyclones. NASA works with local officials and first responders, federal agencies such as FEMA and the U.S. Army Corps of Engineers, and infrastructure experts to determine what information they need and supply it in usable formats in real time. Examples include information on infrastructure failures and disruptions, contaminated water supplies and other hotspots for urgent response needs.

NASA Partners with Industry for New Spacewalking, Moonwalking Services
NASA announced June 1 that two companies were selected to move forward in developing the next generation of spacesuits for Artemis missions at the Moon and the International Space Station,
NASA explores the unknown in air and space, exploring at the Moon with the agency's Artemis program and then sending astronaut on to Mars.

- Spacewalk and Moonwalk services are a major element required to demonstrate continued American leadership in space exploration and return humans to the lunar surface under Artemis, to eventually explore Mars.
- NASA has selected Axiom Space and Collins Aerospace to advance spacewalking capabilities in low-Earth orbit and at the Moon, by buying services that provide astronauts with next generation spacesuit and spacewalk systems to work outside the International Space Station, explore the lunar surface on Artemis missions, and prepare for human missions to Mars.
- The awards leverage NASA expertise with commercial innovation to support continued science at the orbiting laboratory and long-term human exploration at the Moon under Artemis, including landing the first woman and first person of color on the lunar surface.
- The companies selected were chosen from the Exploration Extravehicular Activity Services (xEVAS) contract solicitation. The contract enables selected vendors to compete for task orders for missions that will provide a full suite of capabilities for NASA's spacewalking needs during the period of performance through 2034.
  - The indefinite delivery and indefinite quantity, milestone-based xEVAS contract has a combined maximum potential value of $3.5 billion for all task order awards. The first task orders to be competed under the contract will include the development and services for the first demonstration outside the space station in low-Earth orbit and for the Artemis III lunar landing.

- Each partner has invested a significant amount of its own money into development. Partners will own the spacesuits and are encouraged to explore other non-NASA commercial applications for data and technologies they co-develop with NASA.
- This new approach to spacewalk services encourages an emerging commercial market for a range of customers, and grants NASA the right to use the same data and technologies within the agency and on future exploration program procurements.
- NASA experts defined the technical and safety standards by which the spacesuits will be built, and the chosen companies agreed to meet these key agency requirements. The commercial partners will be responsible for design, development, qualification, certification, and production of spacesuits and support equipment to enable space station and Artemis missions.
- The agency will continue to make flight- and ground-based test data from NASA-led space station spacewalks and NASA's Exploration Extravehicular Mobility Unit (xEMU) development project available to companies through the EVA Technical Library. This will encourage an accelerated transition to industry while reducing risks and providing access to previous NASA investments in advanced exploration spacesuit development.
- NASA designed the contract to endure and evolve with needs of the agency and space industry. The contract also provides the agency with an optional mechanism to add additional vendors that were not selected in the original award announcement as the commercial space services market evolves.
- Under Artemis, new exploration spacesuits, together with human surface mobility systems, the Space Launch System rocket, the Orion Spacecraft, ground systems, Gateway lunar orbiting outpost, and human landing systems, will enable NASA to return humans to and establish a long-term astronaut presence at the Moon and to eventually explore Mars.

International Space Station U.S. Spacewalks Status
During a NASA news conference May 17, media asked about the status of U.S. spacewalks aboard the International Space Station following a situation with water in the helmet of an astronaut during a March spacewalk. NASA confirmed to reporters there won't be regularly scheduled spacewalks – only emergency ones, if needed – while the situation is investigated.

- After successfully completing a spacewalk March 23 at the International Space Station, a thin layer of moisture was discovered on the inner surface of the helmet and on an absorption pad inside ESA (European Space Agency) astronaut Matthias Maurer's helmet following airlock re-pressurization. The water found was more than normal. The space station crew expedited Maurer's helmet removal and then gathered data in coordination with ground support teams.

  The space station team is looking into the cause, and any possible fixes that might be needed. The station crew members remain in good health, and they are continuing their daily activities of science and maintenance. Key objectives were completed during the spacewalk, and there are no planned U.S operating segment spacewalks in the near future as a part of normal station operations.

  Crew safety is a top priority for NASA. The agency and our international partners are constantly identifying and mitigating risks of human spaceflight.

NASA Fiscal Year 2023 Budget Proposal

On March 28, the White House released the Fiscal Year 2023 budget proposal and NASA Administrator Bill Nelson delivered the 2022 State of NASA address:

Exploring the secrets of the universe for the benefit of all.

- NASA Administrator Bill Nelson Statement on President's FY 2023 Budget Request from March 28:
    - "Greater than a number, statistic, or fact is what the president's budget request represents. This budget reflects the Biden administration's confidence in the extraordinary workforce that makes NASA the best place to work in the federal government. It's an investment in the businesses and universities that partner with NASA in all 50 states and the good-paying jobs they are creating. It's a signal of support for our missions in a new era of exploration and discovery."
- The $26 billion Fiscal Year 2023 budget request is 8% more than enacted federal spending levels from FY 2022.
- It represents the largest request for science funding in agency history.
- This budget request reflects the Biden-Harris Administration's confidence in the agency and its support for NASA's missions. It would allow NASA to fulfill the ambitions in its vision statement, "Exploring the secrets of the universe for the benefit of all," and its mission statement, "NASA explores the unknown in air and space, innovates for the benefit of humanity, and inspires the world through discovery."
- **This Budget Request Would Allow NASA to:**
    - **Keep NASA at the forefront of exploration and discovery through Artemis, Moon to Mars activities, and other efforts.** Through its leadership in exploration, science, technology and discovery, NASA has shaped innovation on a global scale. NASA's international partnerships create new possibilities for space and science agencies in other nations and bring new benefits to American researchers and explorers. This budget request will allow NASA to continue to expand the frontiers of innovation around the world.
    - **Address climate change.** For decades, NASA has worked to address climate change across its centers and offices, pursuing science that helps decision-makers and members of the public understand our changing planet and developing technology that will help society address this pressing challenge. This legacy leaves NASA well prepared to support President Biden's commitment to taking swift action on climate change.
    - **Promote diversity, equity, inclusion, and accessibility.** NASA is dedicated to promoting diversity, equity, inclusion, and accessibility in all aspects of its operations, including its workforce, its research grants, and the contracts and awards it issues. The agency also works to broaden participation among early career staff its and support career development for all employees.
    - **Provide opportunities in STEM.** This budget allows NASA to continue serving as a vital component to the nation's education system and an inspiration to the next generation of scientists, engineers, mathematicians, and explorers.
    - **Drive economic growth.** NASA stimulates local and regional economies in all 50 states, as well as the U.S. national economy through its investments in scientific research and technology, its contracts, the good-paying jobs it creates, and its collaborations with industry. The investments in this budget will go toward economic growth that benefits Americans.
- Some Key Numbers from the Budget Request
    - The budget provides $7.6 billion for deep space exploration that will enable missions on and around the Moon through Artemis while preparing for Mars exploration.

Through Artemis missions, NASA will land the first woman and person of color on the lunar surface, deepen the United States' scientific understanding of the Moon, and test technologies that will allow humans to prepare for human exploration of Mars.
  - The budget includes $4.7 billion for Common Exploration Systems Development to support lunar missions includes funding for the Orion spacecraft and Space Launch System (SLS). No other rocket has the abilities of SLS to complete early Artemis missions. The budget's $1.5 billion for astronaut Moon landers will enable NASA to continue the development of the final mode of transportation needed to take astronauts to the lunar surface and allow NASA to increase competition in lunar landing capabilities.
  - The budget would increase NASA's Earth science funding for climate and weather monitoring and measurement, including $2.4 billion for Earth-observing satellites and related research. This will enhance NASA's ability to improve the world's understanding of climate change.
  - The budget's $1.4 billion for space technology research and development will support new technologies to help the commercial space industry grow, enhance mission capabilities, and reduce costs.
  - The budget would provide $970 million for aeronautics research. This includes $500 million to reduce aviation's climate impact through efforts including a Sustainable Flight National Partnership to develop a next-generation aircraft.
- With $150 million for the Office of STEM Engagement for education and engagement activities, this budget will allow NASA to maintain and enhance its support for educational activities, including those that focus on historically underserved communities.

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 and/or new to this list:

- **TROPICS First Launch – No earlier than June 12, 2022:** Time-Resolved Observations of Precipitation structure and storm Intensity with a Constellation of Smallsats (TROPICS), a constellation of six CubeSats, will launch from Cape Canaveral Space Force Station in Florida. The satellites will be deployed in three separate launches and eventually all work together to provide near hourly updates of hurricanes and tropical cyclones
- **Artemis I Wet Dress Rehearsal Tanking – June 20, 2022:** Teams conduct the wet dress rehearsal for NASA's Space Launch System rocket and Orion spacecraft on the launch pad at the agency's Kennedy Space Center in Florida in preparation for the Artemis I flight test.
- **CAPSTONE – Flight software is being updated. A revised launch schedule will be provided as soon as possible:** NASA CubeSat to validate new navigation technologies and verify dynamics in Gateway's planned orbit will launch to space from New Zealand
- **SpaceX CRS-25 – No earlier than June 28, 2022:** Commercial resupply services mission, including the Earth Surface Mineral Dust Source Investigation (EMIT), launch to the International Space Station from Florida
- **Webb Telescope – July 12, 2022:** First science images from the James Webb Space Telescope will be released.
- **X-57 – July 2022:** First test flight for NASA's first all-electric plane, X-57, at Armstrong Flight Research Center

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- **Artemis I Launch – Targeting August 2022:** The first integrated flight test of the uncrewed Space Launch System rocket and Orion spacecraft on a multi-week mission around the Moon
- **Orion splashdown – Pending Artemis I Launch:** NASA's Orion spacecraft splashes down on Earth following a multi-week mission around the Moon
- **Psyche – No earlier than Sept. 20, 2022:** Window opens to launch Psyche from Florida, NASA's mission to study the metal-rich asteroid 16 Psyche.
- **DART – Sept. 26 – Oct. 1, 2022:** Window when Double Asteroid Redirection Test (DART) spacecraft impacts an asteroid in world's first test of planetary defense
- **NOAA's Joint Polar Satellite System-2 (JPSS-2) Launch – Nov. 1, 2022:** NASA and the National Oceanic and Atmospheric Administration will launch NOAA's JPSS-2 weather and climate satellite mission with NASA's Low-Earth Orbit Flight Test of an Inflatable Decelerator (LOFTID) demonstration from Vandenberg Space Force Base in California
- **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)
- **Intuitive Machines' CLPS Flight – Dec. 22, 2022:** Suite of robotic NASA payloads sent to the Moon's surface as part of a Commercial Lunar Payload Services delivery. Landing takes place in the following weeks
- **Astrobotic's CLPS Flight (Peregrine Mission 1) – Fourth Quarter 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.
- **X-59 QueSST First Flight – Late 2022:** The first flight of the X-59 Quiet SuperSonic Technology (QueSST) aircraft will take place out of Lockheed flight facilities in Palmdale, California
- **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
- **Artemis II Crew Announcement – 2022:** NASA announces the astronauts that will fly on the first crewed flight of the Orion and Space Launch System for the Artemis II mission
- **Boeing's Crew Flight Test – Under review pending OFT-2 Results:** 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
- **NISAR Launch (NASA + Indian Space Research Organization + synthetic aperture radars) – 2023:** 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

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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.

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-

Thomas and Susie requested to do this today. Just spoke with him and he is free at 4pm to brief Bill today.

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[EXTERNAL] Ufo

From:	Horst Leskau (b) (6) @(b) (6) >
To:	bill.nelson@nasa.gov, Nelson, Bill (HQ-AA000) <bill.nelson@nasa.gov>
Sent:	June 14, 2022 1:16:00 PM EDT
Received:	June 14, 2022 1:16:21 PM EDT
Attachments:	Nasa Starcruiser.mp4, STS-114 Original.mp4

hello dear administrator mr nelson, what do you think about these two videos I would be very grateful for a feedback. kind regards h.l.

Attachment

1. Nasa Starcruiser.mp4

Type:	video/mp4
Size:	5 MB (6,113,144 bytes)

2. STS-114 Original.mp4

Type:	video/mp4
Size:	5 MB (6,004,672 bytes)

Attachment #1
Nasa Starcruiser.mp4

Attachment #2
STS-114 Original.mp4