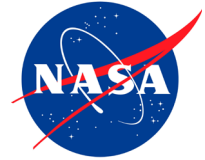


National Aeronautics and Space Administration



Headquarters

Washington, DC 20546-0001

Reply to attn. of: Office of Communications

September 27, 2022

John Greenewald, Jr.
The Black Vault, Inc.
27305 W. Live Oak Rd., Suite 1203
Castaic, CA 91384-4520
john@greenewald.com

Re: FOIA Tracking Number 21-HQ-F-00603

Dear Mr. Greenewald:

This is our fifth interim response to your Freedom of Information Act (FOIA) request to the National Aeronautics and Space Administration (NASA), the clarified version of which was received in this office on July 22, 2021. You seek the following:

ALL emails, with any level of classification (list of NASA personnel below), which contain the following keywords:

*“Unidentified Aerial” and/or
“Unidentified Flying” and/or
“UAP” and/or
“UFO” and/or
“Unidentified Spacecraft” and/or
“Unidentified aircraft” and/or
“UAPTF”*

PLEASE INCLUDE ALL ATTACHMENTS TO EMAILS FOUND . . . search the [following] e-mail boxes, with the time frames in the parentheses:

- *Mike Gold, Acting Associate Administrator, Office of International and Interagency Relations (November 2019 - May 2021)*
- *Joel Montalbano, International Space Station (ISS) Program Manager (January 1, 2020, through the date of processing the request)*

- *Margaret Kieffer, Director of the Export Control and Interagency Liaison Division (January 1, 2017 - the date of processing this request)*
- *Suzanne Gillen, Former Associate Administrator for Legislative Affairs (January 1, 2017 - January 20, 2021)*
- *Dr. Ravi Kumar Kopparapu, Research AST, Planetary Studies (August 1, 2015 - the date of processing this request)*
- *Sandra E. Connelly, Deputy Associate Administrator (January 1, 2020 - the date of processing this request)*
- *Karen Feldstein, Associate Administrator for International and Interagency Relations (January 1, 2016 - the date of processing this request)*
- *Dr. Michael New, Deputy Associate Administrator for Research (June 1, 2018 - the date of processing this request)*
- *Dr. Paul Hertz, Astrophysics Division Director (April 1, 2000 - the date of processing this request)*
- *Bhavya Lal, Senior Advisor for Budget and Finance (January 1, 2020 - the date of processing this request)*
- *Thomas Zurbuchen, NASA Science Associate Administrator (June 11, 2021 - the date of processing this request)*

Our previous responses dated October 6, 2021, January 11, 2022, March 25, 2022, and July 19, 2022, notified you that we tasked NASA's Office of Information Technology (IT) to search the email accounts of the above-named officials using the key words and date ranges you specified. That search located voluminous records as further explained in the fee section below. The July 19 response provided you with 70 pages of records from the accounts of Joel Montalbano, Suzanne Gillen, Sandra Connelly, Michael New, Paul Hertz, Bhavya Lal, and Thomas Zurbuchen, and notified you that we continue to process remaining records which will be issued to you on a rolling basis.

At this time, we have completed processing the enclosed records from the accounts of Ravi Kumar Kopparapu. We continue to process remaining records up to the agreed upon amount; however, please see the fee section below for additional information about remaining records.

As noted above, we completed processing the enclosed portion of responsive records. We reviewed them under the FOIA to determine whether they may be disclosed to you. Based on that review this office is providing the following:

182 page(s) are released in full (RIF);
161 page(s) are released in part (RIP);
0 page(s) are withheld in full (WIF);
235 page(s) are duplicate copies of material already processed.

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

Exemption 5, 5 U.S.C. § 552(b)(5)

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

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

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 unpublished NASA cell phone numbers, personal phone numbers, the names and contact information of third parties as well as any information that could identify such individuals.

Fees

Provisions of the FOIA allow us to recover part of the cost of complying with your request. The fees that may be assessed to process a FOIA request vary depending on the category into which the FOIA requester falls. 5 U.S.C. § 552(a)(4)(A)(ii)(I),(II),(III). Pursuant to the NASA implementing regulations, 14 C.F.R. § 1206.507(b), media requesters will be charged for duplication only, although the first 100 pages are free. Duplication costs thereafter are charged at a rate of \$0.15 per page. You have now been provided with a total of 602 pages. You have agreed to pay the estimated fee total of \$382.50 for the remaining records. We will continue to process the remaining records and make release to you on a rolling basis.

Appeal

Because processing is not yet complete, we ask that you defer any appeals until we complete our production of records. You do, however, have the right to appeal this response. Your appeal must be received within 90 days of the date of our final response. Please send your appeal to:

Administrator
NASA Headquarters
Executive Secretariat
ATTN: FOIA Appeals
MS 9R17
300 E Street S.W.
Washington, DC 2054

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 Alyssa.k.bias@nasa.gov or (202) 358-4664. For further assistance and to discuss any aspect of your request you may also contact:

Stephanie Fox
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 the undersigned, 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,

Alyssa Bias

Alyssa Bias
Government Information Specialist

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

The Black Vault



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

Discover the Truth at: <http://www.theblackvault.com>

From: [Lal, Bhavya \(HQ-AA000\)](#)
To: [Finley, Patrick T. EOP/WHO](#)
Subject: RE: [EXTERNAL] Presidential Statement on Covid origins
Date: Wednesday, May 26, 2021 1:43:23 PM

Just did a quick scan. Nothing weird in there... (b) (5)

From: Finley, Patrick T. EOP/WHO <b6 >
Sent: Wednesday, May 26, 2021 1:41 PM
To: Lal, Bhavya (HQ-AA000) <bhavya.lal@nasa.gov>
Subject: RE: [EXTERNAL] Presidential Statement on Covid origins

You must be prescient!

(b) (5) — so I'll have a better sense then.

From: Lal, Bhavya (HQ-AA000) <bhavya.lal@nasa.gov>
Sent: Wednesday, May 26, 2021 1:39 PM
To: Finley, Patrick T. EOP/WHO <b6 >
Subject: RE: [EXTERNAL] Presidential Statement on Covid origins

Thanks Patrick. Now what are y'all saying about the UFO report?

From: Finley, Patrick T. EOP/WHO <b6 >
Sent: Wednesday, May 26, 2021 1:32 PM
To: Lal, Bhavya (HQ-AA000) <bhavya.lal@nasa.gov>; Etkind, Marc R. (HQ-NA000) <marc.r.etkind@nasa.gov>; Feldstein, Karen C. (HQ-TA000) <karen.c.feldstein@nasa.gov>; Cremins, Tom (HQ-AJ000) <tom.cremins-1@nasa.gov>
Subject: [EXTERNAL] Presidential Statement on Covid origins

Passing along for awareness.

<https://www.whitehouse.gov/briefing-room/statements-releases/2021/05/26/statement-by-president-joe-biden-on-the-investigation-into-the-origins-of-covid-19/>

best,
Patrick

Patrick Finley
Director of Civil Space Policy
National Space Council

b6

From: [Angerhausen, Daniel \(GSFC-667.0\)\[UNIVERSITIES SPACE RESEARCH ASSOCIATION\]](#)
To: [Kopparapu, Ravi Kumar \(GSFC-699.0\)\[UNIV MARYLAND COLLEGE PARK\]](#)
Subject: RE: did you see this?
Date: Thursday, May 26, 2016 11:14:33 AM

Yeah - and I am actually not surprised given his previous behavior.
But we as a team decided (again) to not go down to that tone and react.
Even if he was right in all of his points (which he is not) its absolutely unacceptable for a professor to bash a grad student in public like that.

The pros (and some of the folks in the comments) will figure out that he is just making up things on the run (hint: Fig. 6 and 7 in Tabby's original paper) and the UFO folks believe him. Thats a fair division of the audience we can live with. ;)

I also hear that the folks he pulled into this are not amused (e.g. Grindlay was a referee on our paper and we are also talking to Ben Montet about the Kepler data).

Particularly ironic is his rant about social media and pre-acceptance releases just to spread rumors on other peoples work in progress in #3.

It's just sad that our community has no mechanisms to penalize behavior like this.

See you this afternoon.
D

From: Kopparapu, Ravi Kumar (GSFC-699.0)[UNIV MARYLAND COLLEGE PARK]
Sent: Thursday, May 26, 2016 9:24 AM
To: Angerhausen, Daniel (GSFC-667.0)[UNIVERSITIES SPACE RESEARCH ASSOCIATION]
Subject: did you see this?

<http://www.centauri-dreams.org/?p=35666>

--

Ravi kumar Kopparapu
Assistant Research Scientist
8800 Greenbelt Road
NASA Goddard Space Flight Center
Mail Code 699.0, Building 34, Room S139
Greenbelt, MD 20771
email: ravikumar.kopparapu@nasa.gov

Ph: (b) (6)
(b) (6)

From: [Jacob Haqq Misra](#)
To: [Caleb Scharf](#)
Cc: [Kopparapu, Ravi Kumar \(GSFC-6990\)](#); [Jacob Haqq Misra](#)
Subject: Re: [EXTERNAL] Re: Article for Scientific American
Date: Thursday, May 7, 2020 9:07:16 AM

Thanks Caleb, this sounds like a great plan forward. I have interacted with Lee Billings in the past, and he has been quite supportive in a number of ways.

On Thu, May 7, 2020 at 8:59 AM Caleb Scharf (b) (6) wrote:

Hi

Ok. And thanks for the kind invite, I think it would stand well without me in the mix! I'll definitely try to help get it attention though!

Cheers
Cale

Caleb Scharf
Director of Astrobiology
Columbia University, New York
caleb@astro.columbia.edu

(b) (6)

www.calebscharf.com

On Thu, May 7, 2020 at 8:54 AM Kopparapu, Ravi Kumar (GSFC-6990) <ravikumar.kopparapu@nasa.gov> wrote:

Hi Caleb,

Great! Thank you. Yes, that is good.

Best

Ravi

P.S: Would you like to be on it?

Ravi kumar Kopparapu
8800 Greenbelt Road
NASA Goddard Space Flight Center
Mail Code 690, Building 34
Greenbelt, MD 20771

email: ravikumar.kopparapu@nasa.gov

Ph: (b) (6)

From: Caleb Scharf (b) (6)
Date: Thursday, May 7, 2020 at 8:52 AM
To: "Kopparapu, Ravi Kumar (GSFC-6990)" <ravikumar.kopparapu@nasa.gov>
Cc: Jacob Haqq Misra (b) (6)
Subject: [EXTERNAL] Re: Article for Scientific American

Hi Ravi,

nice to hear from you. I just saw that piece by Katie, and yes, I think it deserves a good response/followup and your position strikes me as an

important one to voice (very much the way I see things too). So, I suggest if it's OK with you that I forward your email with a quick note to Mike Lemonick (who runs the opinions/blogs

at Sci Am) and Lee Billings (who's senior astro editor at SciAm). I would imagine they'd love to do this. Does that sound OK?

Cheers

Caleb

Caleb Scharf

Director of Astrobiology

Columbia University, New York

caleb@astro.columbia.edu

(b) (6)

www.calebscharf.com

On Thu, May 7, 2020 at 8:30 AM Kopparapu, Ravi Kumar (GSFC-6990)
<ravikumar.kopparapu@nasa.gov> wrote:

Hi Caleb,

I am hoping you are safe and doing well in this pandemic. NY seems to be the epicenter for U.S, and I am hoping you all are well sheltered until this is over (whenever it is!). I am in contact with Mike Way regularly, and it is good to see our colleagues at least virtually.

I am copying Jacob Haqq-Misra Blue Marble Space Institute of Science (BMSIS) in this email. Someone sent to us [the following scientific American article](#) regarding the recent Navy videos written by theoretical astrophysicist Katie Mack from North Carolina State University. The short summary of the author's conclusion is that it is not the job of astronomers or astrophysicists to address the UAP (Unidentified Aerial Phenomena) as it is outside their domain of expertise. Rather, it should be more in the domain of tech and equipment experts, image analysts or someone with related flight experience.

We think we can offer another point of view, coming from an interdisciplinary field of astrobiology. If someone (especially a fellow scientist) approaches us with an unsolved problem beyond our area of expertise, we usually do our best to actually contact other experts within our professional network to try and get some outside perspective. The best case outcome is that we work on a paper or a proposal with the said colleague from another discipline--the worst case is that we learn something new from a colleague in another discipline. Either way, curiosity helps me to learn more and become a better scientist. I guess our field such a cross-disciplinary one, the problems seem more collaborative to us, rather than "not-my-domain".

We are hoping to write these thoughts in a Scientific American article. We were wondering if you could let us know how we might approach the editors? Any information is greatly appreciated. And we are more than happy to invite you to co-write it with us, if you are interested, but absolutely no worries if you decide not to participate.

Best

Ravi

Ravi kumar Kopparapu

8800 Greenbelt Road

NASA Goddard Space Flight Center

Mail Code 690, Building 34

Greenbelt, MD 20771

email: ravikumar.kopparapu@nasa.gov

Ph: (b) (6)

From: [Michael Lemonick](#)
To: [Caleb Scharf](#)
Cc: [Lee Billings; Kopparapu, Ravi Kumar \(GSFC-699.0\)\[UNIV MARYLAND COLLEGE PARK\]; \(b\) \(6\)](#)
[Kopparapu, Ravi Kumar \(GSFC-6990\)](#)
Subject: [EXTERNAL] Re: Article for Scientific American
Date: Thursday, May 7, 2020 9:54:48 AM

If it's not characterized as a response, I'm much more open.

Michael D. Lemonick
Chief Opinion Editor, Scientific American
Office: (b) (6)
Mobile (b) (6)

From: Caleb Scharf (b) (6)
Date: Thursday, May 7, 2020 at 9:46 AM
To: Michael Lemonick (b) (6)
Cc: Lee Billings (b) (6); "Kopparapu, Ravi Kumar (GSFC-699.0)[UNIV MARYLAND COLLEGE PARK]" <ravikumar.kopparapu@nasa.gov>, (b) (6)
(b) (6)
Subject: Re: Article for Scientific American

Hi Mike,

I should say that I imposed my own thought of this as a 'response' - and while prompted by Katie's piece I don't know if that is quite the way Ravi and Jacob had seen this - i.e. I imagine it could also be a stand alone perspective inspired by the recent flurry of discussions around 'UFOs' and video footage etc.

Anyhow, I guess it betrays my interest in hearing something from Ravi and Jacob in any case, whether on this topic or something else!

Cheers
Caleb

Caleb Scharf
Director of Astrobiology
Columbia University, New York
caleb@astro.columbia.edu
(b) (6)
www.calebscharf.com

On Thu, May 7, 2020 at 9:37 AM Michael Lemonick (b) (6) wrote:

I don't want a piece that responds to Katie's, mostly because she wasn't prescribing what others should do. She was talking purely about her own feelings. And while Caleb thinks this would make a "nice sequence," responses to essays rarely end up as nice sequences. They tend to devolve into demands to respond to the response, which lead to demands to respond to the response to the response.

Michael D. Lemonick
Chief Opinion Editor, Scientific American
Office: (b) (6)
Mobile (b) (6)

From: Caleb Scharf (b) (6)
Date: Thursday, May 7, 2020 at 9:05 AM
To: Lee Billings (b) (6); Michael Lemonick (b) (6)
"Kopparapu, Ravi Kumar (GSFC-699 0)[UNIV MARYLAND COLLEGE PARK]"
<ravikumar.kopparapu@nasa.gov>, (b) (6)
Subject: Fwd: Article for Scientific American

Hi Mike, Lee,

Hope you are both doing well in these strange times. I wanted to forward you a message from some colleagues (below) with a suggestion for an opinion piece online at SciAm. This is in response to Katie Mack's piece on UFOs that you just published. I think Ravi and Jacob's 'response' would be extremely valuable to see (it certainly aligns with some of my thoughts on the matter) and makes for a nice sequence.

Fingers crossed that this might be of interest? I've CC'd Ravi and Jacob on this email.

Cheers
Caleb

Caleb Scharf
Director of Astrobiology
Columbia University, New York
caleb@astro.columbia.edu
(b) (6)
www.calebscharf.com

----- Forwarded message -----

From: **Kopparapu, Ravi Kumar (GSFC-6990)** <ravikumar.kopparapu@nasa.gov>

Date: Thu, May 7, 2020 at 8:30 AM

Subject: Article for Scientific American

To: Caleb Scharf (b) (6)

Cc: Jacob Haqq Misra (b) (6)

Hi Caleb,

I am hoping you are safe and doing well in this pandemic. NY seems to be the epicenter for U.S, and I am hoping you all are well sheltered until this is over (whenever it is!). I am in contact with Mike Way regularly, and it is good to see our colleagues at least virtually.

I am copying Jacob Haqq-Misra Blue Marble Space Institute of Science (BMSIS) in this email. Someone sent to us [the following scientific American article](#) regarding the recent Navy videos written by theoretical astrophysicist Katie Mack from North Carolina State University. The short summary of the author's conclusion is that it is not the job of astronomers or astrophysicists to address the UAP (Unidentified Aerial Phenomena) as it is outside their domain of expertise. Rather, it should be more in the domain of tech and equipment experts, image analysts or someone with related flight experience.

We think we can offer another point of view, coming from an interdisciplinary field of astrobiology. If someone (especially a fellow scientist) approaches us with an unsolved problem beyond our area of expertise, we usually do our best to actually contact other experts within our professional network to try and get some outside perspective. The best case outcome is that we work on a paper or a proposal with the said colleague from another discipline--the worst case is that we learn something new from a colleague in another discipline. Either way, curiosity helps me to learn more and become a better scientist. I guess our field such a cross-disciplinary one, the problems seem more collaborative to us, rather than "not-my-domain".

We are hoping to write these thoughts in a Scientific American article. We were wondering if you could let us know how we might approach the editors? Any information is greatly appreciated. And we are more than happy to invite you to co-write it with us, if you are interested, but absolutely no worries if you decide not to participate.

Best

Ravi

Ravi kumar Kopparapu
8800 Greenbelt Road
NASA Goddard Space Flight Center
Mail Code 690, Building 34
Greenbelt, MD 20771
email: ravikumar.kopparapu@nasa.gov

Ph: (b) (6)

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From: [Kopparapu, Ravi Kumar \(GSFC-6990\)](#)
To: [Lee Billings](#); [Michael Lemonick](#); [Caleb Scharf](#)
Cc: (b) (6)
Subject: Re: [EXTERNAL] Re: Article for Scientific American
Date: Thursday, May 7, 2020 10:30:58 AM

Great! We will send a draft to all soon.
Stay safe!
Ravi

Ravi kumar Kopparapu
8800 Greenbelt Road
NASA Goddard Space Flight Center
Mail Code 690, Building 34
Greenbelt, MD 20771
email: ravikumar.kopparapu@nasa.gov

Ph: (b) (6)

From: Lee Billings (b) (6)
Date: Thursday, May 7, 2020 at 10:28 AM
To: Michael Lemonick (b) (6) "Kopparapu, Ravi Kumar (GSFC-6990)"
<ravikumar.kopparapu@nasa.gov>, Caleb Scharf (b) (6)
Cc: (b) (6)
Subject: Re: [EXTERNAL] Re: Article for Scientific American

Chiming in to say I'm interested in this, too. Thanks!

Lee Billings
Senior Editor, Space & Physics
Scientific American
One New York Plaza, Suite 4600
New York, NY 10004-1562
Tel: (b) (6)
Twitter: @LeeBillings
www.scientificamerican.com

From: Michael Lemonick (b) (6)
Date: Thursday, May 7, 2020 at 10:26 AM
To: "Kopparapu, Ravi Kumar (GSFC-6990)" <ravikumar.kopparapu@nasa.gov>, Caleb Scharf (b) (6)
Cc: Administrator (b) (6)
Subject: Re: [EXTERNAL] Re: Article for Scientific American

OK, good. I'm interested in such an essay. FYI, I was Hynek's editor when he wrote an astronomy column (not about UFOs) for Science Digest magazine in the early 80s.

Michael D. Lemonick
Chief Opinion Editor, Scientific American
Office: (b) (6)
Mobile (b) (6)

From: "Kopparapu, Ravi Kumar (GSFC-6990)" <ravikumar.kopparapu@nasa.gov>

Date: Thursday, May 7, 2020 at 10:09 AM

To: Caleb Scharf (b) (6) Michael Lemonick (b) (6)

Cc: Lee Billings (b) (6)

Subject: Re: [EXTERNAL] Re: Article for Scientific American

Hi Caleb and Michael,

Thank you for your responses. Jacob and I have been thinking about this more broadly for a while now (not only limited to the Navy videos), even drafting a preliminary "Letter to the community" proposing multi-disciplinary expertise, highlighting the history of these events with illustrative scientists like James McDonald, Carl Sagan and Allen Hynek's participation, and stressing on strictly scientific approach with an agnostic view (absolutely no jumping to conclusions, either extra-terrestrials or debunking without any study). We just did not get enough time to finalize the draft. When we heard the DoD confirmation of these videos, we started working again to revise the draft, which is when we noticed Katie's article.

In any case, we do agree that it is Katie's personal feelings. In our article, we were not going to respond to Katie, but propose more an open view on addressing this problem as a collaborative community effort, with science as the spearhead. No speculations, no cherry picking data. We will be proposing to collect more data before any conclusions be made, and this could be an interdisciplinary field.

Hope this helps.

Thanks

Ravi

Ravi kumar Kopparapu
8800 Greenbelt Road
NASA Goddard Space Flight Center
Mail Code 690, Building 34
Greenbelt, MD 20771
email: ravikumar.kopparapu@nasa.gov

Ph: (b) (6)

From: Caleb Scharf (b) (6)

Date: Thursday, May 7, 2020 at 9:46 AM

Duplicate email chain - already processed



Deletion Page

Requester: John Greenewald

Request #: 21-HQ-F-00603

2 page(s) containing duplicate information
is/are held in the file.

From: [Kopparapu, Ravi Kumar \(GSFC-6990\)](mailto:Kopparapu, Ravi Kumar (GSFC-6990))
To: [Shekhtman, Lonnie \(GSFC-690.0\)\[ADNET SYSTEMS INC\]](mailto:Shekhtman, Lonnie (GSFC-690.0)[ADNET SYSTEMS INC])
Subject: Re: Article for Scientific American.
Date: Thursday, May 7, 2020 11:41:40 AM

Hi Lonnie,

Actually, we contacted Scientific American editors, including Lee Billings, simultaneously through another source. And they agreed to look at our article, as long as it is not a response to the original article. It should stand independent. So I am working on it. I plan to send it to Paul Mahaffy and our media contacts (that means you, I guess) to make sure it is not an "official" NASA view.

Thanks

Ravi

Ravi kumar Kopparapu
8800 Greenbelt Road
NASA Goddard Space Flight Center
Mail Code 690, Building 34
Greenbelt, MD 20771
email: ravikumar.kopparapu@nasa.gov

Ph: (b) (6)

From: "Shekhtman, Lonnie (GSFC-690.0)[ADNET SYSTEMS INC]"
<lonnie.shekhtman@nasa.gov>
Date: Thursday, May 7, 2020 at 11:39 AM
To: "Kopparapu, Ravi Kumar (GSFC-6990)" <ravikumar.kopparapu@nasa.gov>
Subject: Re: Article for Scientific American.

Hey Ravi,

Great idea. You could try reaching out to Lee Billings, senior editor space & physics:

(b) (6) (I only found a gmail address for him.)

I think you could write the same thing to him that you wrote to me below and see if he would be interested in publishing an alternative perspective to the one below.

Also, are you interested in studying these videos?

Talk soon,

Lonnie

--

Lonnie Shekhtman
Senior Science Writer
Solar System Exploration

NASA's Goddard Space Flight Center
301-614-6833

From: "Kopparapu, Ravi Kumar (GSFC-6990)" <ravikumar.kopparapu@nasa.gov>
Date: Thursday, May 7, 2020 at 7:56 AM
To: "Shekhtman, Lonnie (GSFC-690.0)[ADNET SYSTEMS INC]" <lonnie.shekhtman@nasa.gov>
Subject: Article for Scientific American.

Hi Lonnie,

Someone sent me this article in Scientific American about recent Navy videos.

<https://blogs.scientificamerican.com/observations/a-word-about-those-ufo-videos/>

The author's argument is that, because she is an astrophysicist, it is not her problem to study these UAP (Unidentified Aerial Phenomena), and it is the job of an image analyst, or aerial flight expert. That is actually a perfectly reasonable position to take, and I have heard similar opinions from my *astronomer* colleagues.

However, I (and a colleague of mine) have a different opinion. Because we are coming from an interdisciplinary field of astrobiology/exoplanets, when we encounter a new interesting problem, we seek out experts in those fields and collaborate with them to write a paper or a proposal. The best case outcome is that I work on a paper or a proposal with my colleague from another discipline--the worst case is that I learn something new from a colleague in another discipline. Either way, we learn something as scientists.

I am hoping to write this up for Scientific American, and offer a different point of view. Is there a way to do it?

Thank you

Ravi

Ravi kumar Kopparapu
8800 Greenbelt Road
NASA Goddard Space Flight Center
Mail Code 690, Building 34
Greenbelt, MD 20771
email: ravikumar.kopparapu@nasa.gov

Ph: (b) (6)

From: [Jones, Nancy N. \(GSFC-1300\)](#)
To: [Kopparapu, Ravi Kumar \(GSFC-6990\)](#)
Subject: Re: Scientific American Article
Date: Friday, May 15, 2020 9:15:55 AM

Basically, the UFO stories have died down. They felt this could bring about additional stories.

Bottom line, HQ did not tell me no, they just asked for a heads up on when the piece will come out.

On: 15 May 2020 09:01, "Kopparapu, Ravi Kumar (GSFC-6990)"
<ravikumar.kopparapu@nasa.gov> wrote:

Hi Nancy,

I am bit unsure about what they mean? Could you explain what it means by drawn back into conversation?

Thanks

Ravi

Ravi kumar Kopparapu
8800 Greenbelt Road
NASA Goddard Space Flight Center
Mail Code 690, Building 34
Greenbelt, MD 20771
email: ravikumar.kopparapu@nasa.gov

Ph: (b) (6)

From: "Jones, Nancy N. (GSFC-1300)" <nancy.n.jones@nasa.gov>
Date: Friday, May 15, 2020 at 8:50 AM
To: "Kopparapu, Ravi Kumar (GSFC-6990)" <ravikumar.kopparapu@nasa.gov>

Subject: Re: Scientific American Article

Hi Ravi,

HQ was not pleased with being drawn back into the conversation. They just asked for a heads up of when it comes out.

Nancy

On: 15 May 2020 08:47, "Kopparapu, Ravi Kumar (GSFC-6990)"
<ravikumar.kopparapu@nasa.gov> wrote:

Hi Nancy,

Do we have any response from HQ on the draft of the article? Are we supposed to wait for their approval?

Thank you

Ravi

Ravi kumar Kopparapu

8800 Greenbelt Road

NASA Goddard Space Flight Center

Mail Code 690, Building 34

Greenbelt, MD 20771

email: ravikumar.kopparapu@nasa.gov

Ph: (b) (6)

From: "Jones, Nancy N. (GSFC-1300)" <nancy.n.jones@nasa.gov>
Date: Monday, May 11, 2020 at 10:16 AM
To: "Kopparapu, Ravi Kumar (GSFC-6990)" <ravikumar.kopparapu@nasa.gov>
Subject: Re: Scientific American Article

Hi Ravi,

Besides you, who are the other writers on this article?

Thanks,

Nancy

--

Nancy Neal Jones

Senior Communications Manager

Solar System Exploration Division

NASA's Goddard Space Flight Center

Office of Communications

[301-286-0039](tel:301-286-0039)

Nancy.N.Jones@nasa.gov

From: "Kopparapu, Ravi Kumar (GSFC-6990)" <ravikumar.kopparapu@nasa.gov>
Date: Friday, May 8, 2020 at 11:05 AM
To: "Nancy N. Jones" <nancy.n.jones@nasa.gov>
Subject: Re: Scientific American Article

Hi Nancy,

We plan to send to the editors probably early next week.

Thanks

Ravi

Ravi kumar Kopparapu

8800 Greenbelt Road

NASA Goddard Space Flight Center

Mail Code 690, Building 34

Greenbelt, MD 20771

email: ravikumar.kopparapu@nasa.gov

Ph: (b) (6)

From: "Jones, Nancy N. (GSFC-1300)" <nancy.n.jones@nasa.gov>

Date: Friday, May 8, 2020 at 11:00 AM

To: "Kopparapu, Ravi Kumar (GSFC-6990)"

<ravikumar.kopparapu@nasa.gov>

Subject: Re: Scientific American Article

Hi Ravi,

When do you plan to submit the article? I would like to share your article with HQ.

Thanks,

Nancy

--

Nancy Neal Jones

Senior Communications Manager

Solar System Exploration Division
NASA's Goddard Space Flight Center
Office of Communications
[301-286-0039](tel:301-286-0039)
Nancy.N.Jones@nasa.gov

From: "Kopparapu, Ravi Kumar (GSFC-6990)"
<ravikumar.kopparapu@nasa.gov>
Date: Friday, May 8, 2020 at 10:56 AM
To: "Nancy N. Jones" <nancy.n.jones@nasa.gov>
Subject: Re: Scientific American Article

Hi Nancy,

We approached them. We were already thinking to write an article similar to this for a while now, and the recent news articles prompted us to finish the draft. We contacted Prof. Caleb Scharf from Columbia University and he put us in touch with the Scientific American editors.

Ravi

Ravi kumar Kopparapu
8800 Greenbelt Road
NASA Goddard Space Flight Center
Mail Code 690, Building 34
Greenbelt, MD 20771
email: ravikumar.kopparapu@nasa.gov

Ph: (b) (6)

From: "Jones, Nancy N. (GSFC-1300)" <nancy.n.jones@nasa.gov>
Date: Friday, May 8, 2020 at 10:55 AM
To: "Kopparapu, Ravi Kumar (GSFC-6990)"
<ravikumar.kopparapu@nasa.gov>
Subject: Re: Scientific American Article

Hi Ravi,

Can you give me a little background on how this article came to be?
Did they approach you or did you approach them?

Thanks,

Nancy

--

Nancy Neal Jones

Senior Communications Manager

Solar System Exploration Division

NASA's Goddard Space Flight Center

Office of Communications

[301-286-0039](tel:301-286-0039)

Nancy.N.Jones@nasa.gov

From: "Kopparapu, Ravi Kumar (GSFC-6990)"
<ravikumar.kopparapu@nasa.gov>
Date: Friday, May 8, 2020 at 10:53 AM
To: "Nancy N. Jones" <nancy.n.jones@nasa.gov>
Subject: Re: Scientific American Article

Hi Nancy,

Attached is the article.

Thanks

Ravi

Ravi kumar Kopparapu

8800 Greenbelt Road

NASA Goddard Space Flight Center

Mail Code 690, Building 34

Greenbelt, MD 20771

email: ravikumar.kopparapu@nasa.gov

Ph: (b) (6)

From: "Jones, Nancy N. (GSFC-1300)" <nancy.n.jones@nasa.gov>

Date: Friday, May 8, 2020 at 10:41 AM

To: "Kopparapu, Ravi Kumar (GSFC-6990)"
<ravikumar.kopparapu@nasa.gov>

Subject: Scientific American Article

Hi Ravi,

Can you send me a copy of the article?

Thanks,

Nancy

--

Nancy Neal Jones

Senior Communications Manager

Solar System Exploration Division

NASA's Goddard Space Flight Center

Office of Communications

[301-286-0039](tel:301-286-0039)

Nancy.N.Jones@nasa.gov

From: [Kopparapu, Ravi Kumar \(GSFC-6990\)](#)
To: [Michael Lemo](#)
Cc: [Lee Billings](#); (b) (6)
Subject: Re: [EXTERNAL] Re: Article for Scientific American
Date: Friday, May 15, 2020 5:51:16 PM
Attachments: [Scientific American Article.pdf](#)

Hi Michael, Lee and Caleb,
Attached is our essay on UAP. It took a while to get some approvals from my higher ups. Thanks for considering the article.
Have a good weekend.
Best
Ravi

Ravi kumar Kopparapu
8800 Greenbelt Road
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Mail Code 690, Building 34
Greenbelt, MD 20771
email: ravikumar.kopparapu@nasa.gov

Ph: (b) (6)

From: Michael Lemonick (b) (6) >
Date: Thursday, May 7, 2020 at 10:27 AM
To: "Kopparapu, Ravi Kumar (GSFC-6990)" <ravikumar.kopparapu@nasa.gov>, Caleb Scharf (b) (6)
Cc: Lee Billing (b) (6)
Subject: Re: [EXTERNAL] Re: Article for Scientific American

OK, good. I'm interested in such an essay. FYI, I was Hynek's editor when he wrote an astronomy column (not about UFOs) for Science Digest magazine in the early 80s.

Michael D. Lemonick
Chief Opinion Editor, Scientific American
Office: +1 212.451.8852
Mobile: (b) (6)

From: "Kopparapu, Ravi Kumar (GSFC-6990)" <ravikumar.kopparapu@nasa.gov>
Date: Thursday, May 7, 2020 at 10:09 AM
To: Caleb Scharf (b) (6); Michael Lemonick (b) (6)
Cc: Lee Billings (b) (6)
Subject: Re: [EXTERNAL] Re: Article for Scientific American

Hi Caleb and Michael,

Thank you for your responses. Jacob and I have been thinking about this more broadly for a while now (not only limited to the Navy videos), even drafting a preliminary "Letter to the community" proposing multi-disciplinary expertise, highlighting the history of these events with illustrative scientists like James McDonald, Carl Sagan and Allen Hynek's participation, and stressing on strictly scientific approach with an agnostic view (absolutely no jumping to conclusions, either extra-terrestrials or debunking without any study). We just did not get enough time to finalize the draft. When we heard the DoD confirmation of these videos, we started working again to revise the draft, which is when we noticed Katie's article.

In any case, we do agree that it is Katie's personal feelings. In our article, we were not going to respond to Katie, but propose more an open view on addressing this problem as a collaborative community effort, with science as the spearhead. No speculations, no cherry picking data. We will be proposing to collect more data before any conclusions be made, and this could be an interdisciplinary field.

Hope this helps.

Thanks

Ravi

Ravi kumar Kopparapu
8800 Greenbelt Road
NASA Goddard Space Flight Center
Mail Code 690, Building 34
Greenbelt, MD 20771
email: ravikumar.kopparapu@nasa.gov

Ph: (b) (6)

From: Caleb Scharf (b) (6)
Date: Thursday, May 7, 2020 at 9:46 AM
To: Michael Lemonick (b) (6)
Cc: Lee Billings (b) (6); "Kopparapu, Ravi Kumar (GSFC-6990)"
<ravikumar.kopparapu@nasa.gov>, (b) (6)
Subject: [EXTERNAL] Re: Article for Scientific American

Hi Mike,

I should say that I imposed my own thought of this as a 'response' - and while prompted by Katie's piece I don't know if that is quite the way Ravi and Jacob had seen this - i.e. I imagine it could also be a stand alone perspective inspired by the recent flurry of discussions around 'UFOs' and video footage etc.

Anyhow, I guess it betrays my interest in hearing something from Ravi and Jacob in any case,

whether on this topic or something else!

Cheers
Caleb

Caleb Scharf
Director of Astrobiology
Columbia University, New York
caleb@astro.columbia.edu
(b) (6)
www.calebscharf.com

On Thu, May 7, 2020 at 9:37 AM Michael Lemonick (b) (6) wrote:

I don't want a piece that responds to Katie's, mostly because she wasn't prescribing what others should do. She was talking purely about her own feelings. And while Caleb thinks this would make a "nice sequence," responses to essays rarely end up as nice sequences. They tend to devolve into demands to respond to the response, which lead to demands to respond to the response to the response.

Michael D. Lemonick
Chief Opinion Editor, Scientific American
Office: (b) (6)
Mobile: (b) (6)

From: Caleb Scharf (b) (6)
Date: Thursday, May 7, 2020 at 9:05 AM
To: Lee Billings (b) (6), Michael Lemonick (b) (6)
"Kopparapu, Ravi Kumar (GSFC-699.0)[UNIV MARYLAND COLLEGE PARK]"
<ravikumar.kopparapu@nasa.gov>, (b) (6)
Subject: Fwd: Article for Scientific American

Hi Mike, Lee,

Hope you are both doing well in these strange times. I wanted to forward you a message from some colleagues (below) with a suggestion for an opinion piece online at SciAm. This is in response to Katie Mack's piece on UFOs that you just published. I think Ravi and Jacob's 'response' would be extremely valuable to see (it certainly aligns with some of my thoughts on the matter) and makes for a nice sequence.

Fingers crossed that this might be of interest? I've CC'd Ravi and Jacob on this email.

Cheers
Caleb

Caleb Scharf
Director of Astrobiology
Columbia University, New York

caleb@astro.columbia.edu

(b) (6)

www.calebscharf.com

----- Forwarded message -----

From: **Kopparapu, Ravi Kumar (GSFC-6990)** <ravikumar.kopparapu@nasa.gov>

Date: Thu, May 7, 2020 at 8:30 AM

Subject: Article for Scientific American

To: Caleb Scharf (b) (6)

Cc: Jacob Haqq Misra (b) (6)

Hi Caleb,

I am hoping you are safe and doing well in this pandemic. NY seems to be the epicenter for U.S, and I am hoping you all are well sheltered until this is over (whenever it is!). I am in contact with Mike Way regularly, and it is good to see our colleagues at least virtually.

I am copying Jacob Haqq-Misra Blue Marble Space Institute of Science (BMSIS) in this email. Someone sent to us [the following scientific American article](#) regarding the recent Navy videos written by theoretical astrophysicist Katie Mack from North Carolina State University. The short summary of the author's conclusion is that it is not the job of astronomers or astrophysicists to address the UAP (Unidentified Aerial Phenomena) as it is outside their domain of expertise. Rather, it should be more in the domain of tech and equipment experts, image analysts or someone with related flight experience.

We think we can offer another point of view, coming from an interdisciplinary field of astrobiology. If someone (especially a fellow scientist) approaches us with an unsolved problem beyond our area of expertise, we usually do our best to actually contact other experts within our professional network to try and get some outside perspective. The best case outcome is that we work on a paper or a proposal with the said colleague from another discipline--the worst case is that we learn something new from a colleague in another discipline. Either way, curiosity helps me to learn more and become a better scientist. I guess our field such a cross-disciplinary one, the problems seem more collaborative to us, rather than "not-my-domain".

We are hoping to write these thoughts in a Scientific American article. We were wondering if you

could let us know how we might approach the editors? Any information is greatly appreciated. And we are more than happy to invite you to co-write it with us, if you are interested, but absolutely no worries if you decide not to participate.

Best
Ravi

Ravi kumar Kopparapu
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Ph: (b) (6)

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Unidentified Aerial Phenomena are an Interesting Science Problem

UAP (Unidentified Aerial Phenomena) are a scientifically interesting problem. Interdisciplinary teams of scientists should study them.

Over the past few years, and even recently, UFOs have been in the news mainly because of the videos initially [leaked](#), and later confirmed, by the [U.S. Navy](#) and [officially released by Pentagon](#) that purportedly show "unidentified aerial phenomena" (UAP) in our skies. Speculation about the nature of these videos has run rampant, from extra-terrestrial hypotheses to possibly being [mundane objects like birds or balloons flying at 13,000 feet](#). It is very difficult to know what these objects are without having a context of what happened before and after these video snippets, or if there are any simultaneously observed data from other instruments or pilot observations. Judging the nature of these objects (and these seem to be "objects", as [confirmed by the Navy](#)) needs a coherent explanation that should accommodate and connect ALL the facts of the event as a whole. And this is where interdisciplinary scientific investigation is needed.

The proposal to scientifically study UAP phenomena is not new. The problem of understanding such unexplained UAP cases drew interest by scientists during the 1960s, which resulted in the US Air Force funding a group at the University of Colorado, headed by physicist Edward Condon, to study UAP from 1966 to 1968. The resulting Condon Report concluded that further study of UAP was unlikely to be scientifically interesting—a conclusion that drew mixed reactions from scientists and the public.

Concerns over the inadequacy of the methods used by the Condon Report culminated with a [congressional hearing](#) in 1968 as well as a [debate](#) sponsored by the American Association for the Advancement of Science (AAAS) in 1969 with participation by scholars such as Carl Sagan, Allen Hynek, James McDonald, Robert Hall, and Robert Baker. Allen Hynek was an astronomy professor at The Ohio State University and led the Project Blue Book investigation, while James McDonald, who was a well-known meteorologist and a member of the National Academy of Sciences (NAS) and AAAS, performed a thorough investigation of the UAP phenomena. Carl Sagan himself, a professor of astronomy at Cornell University, was one of the organizers of the AAAS debate. Sagan dismissed the extra-terrestrial hypothesis as unlikely but still considered the UAP subject worthy of scientific inquiry.

Recent UAP sightings, however, have so far failed to generate similar interest among the scientific community today. Part of the reason could be the apparent [taboo](#) of the UAP phenomena, connecting it to paranormal or pseudo-science, while ignoring the history behind it. Sagan even wrote in the afterword of the 1969 debate proceedings about "the strong opposition" by other scientists who were "convinced that AAAS sponsorship would somehow lend credence to 'unscientific' ideas." As scientists we must simply let scientific curiosity be the spearhead of understanding this phenomena. We should be cautious of outright dismissal by assuming that every UAP phenomena must be explainable.

Why should astronomers, meteorologists, or planetary scientists care about these events? Shouldn't we just let image analysts, or radar observation experts, handle the problem? All good questions, and rightly so. Why should we care? Because we are scientists. Curiosity is the reason we became scientists. In the current interdisciplinary collaborative environment, if someone (especially a fellow scientist) approaches us with an unsolved problem beyond our area of expertise, we usually do our best to actually contact other experts within our professional network to try and get some outside perspective. The best case outcome is that we work on a paper or a proposal with our colleague from another discipline--the worst case is that we learn something new from a colleague in another discipline. Either way, curiosity helps us to learn more and become scientists with broader perspectives.

So what should be the approach? If a scientific explanation is desired, one needs an interdisciplinary approach to address the combined observational characteristics of UAP, rather than isolating one aspect of the event. Furthermore, UAP phenomena are not U.S. specific events. They are a world-wide occurrence. Several other [countries](#) have already provided official statements or begun formal study of the phenomena. So shouldn't we as scientists choose to investigate and curb the speculation around this phenomena?

A systematic investigation is essential in order to bring the phenomena into mainstream science. First, collection of hard data is paramount to establishing any credibility to the explanation of the phenomena. A rigorous scientific analysis is sorely needed, by multiple independent study groups, just as we do for evaluating other scientific discoveries. We, as scientists, can not hastily dismiss any phenomenon without in-depth examination and then conclude the event itself is un-scientific. Such an approach would certainly not pass the 'smell test' in our day-to-day science duties, so these kinds of arguments similarly should not suffice to explain UAP. **We must insist on strict agnosticism.** We suggest an approach that is purely rational: UAP represent observations that are puzzling and waiting to be explained. Just like any other science discovery.

The transient nature of UAP events, and hence the unpredictability about when and where the next event will happen, is likely one of the main reasons why UAP have not been taken seriously in science circles. But, how can one identify a pattern without systematically collecting the data in the first place? In astronomy, the observations (location and timing) of Gamma-ray Bursts (GRBs), supernovae, and gravitational waves are similarly unpredictable. However, we now recognize them as natural phenomena arising from stellar evolution. How did we develop detailed and complex mathematical models that could explain these natural phenomena? By a concerted effort from scientists around the world, who meticulously collected data from each occurrence of the event and systematically observed them. We *still* can not predict when and where such astronomical events will occur in the sky. But we understand to an extent the nature of GRBs, supernovae, and gravitational waves. How? Because we have not dismissed the phenomena or the people who observed them. We studied them. Astronomers have tools, so they can share the data they collected, even if one questions their claim. Similarly, we need

tools to observe UAP: radar, thermal, and visual observations will be immensely helpful. We must repeat here that this is a *global phenomenon*. Perhaps some, or even most, UAP events are simply classified military aircraft, or strange weather formations, or other mis-identified mundane phenomena. However, there are still a number of truly puzzling cases that might be worth investigating.

Of course, not every scientist needs to make UAP investigation a part of their research portfolio. For those who do, discarding the taboo surrounding this phenomena would help in developing interdisciplinary teams of motivated individuals who can begin genuine scientific inquiry.

A template to perform a thorough scientific investigation can be found in James McDonald's paper "[Science in Default](#)." While he entertains the conclusion that these events could be extra-terrestrials (which we do not subscribe to), McDonald's methodology itself is a great example of objective scientific analysis. And this is exactly what we as scientists can do to study these events.

As Sagan concluded at the 1969 debate, "scientists are particularly bound to have open minds; this is the lifeblood of science." We do not know what UAP are, and this is precisely the reason that we as scientists should study them.

The views and opinions expressed in this article are those of the authors and are not necessarily those of NASA, their employers, or Scientific American.

Ravi Kopparapu is a planetary scientist at NASA Goddard Space Flight Center. He studies planetary habitability, climate modeling, and chemistry in the context of exoplanet atmosphere characterization. He has authored nearly 50 peer-reviewed publications in scientific journals and book chapters. He can be reached on Twitter at [@ravi_kopparapu](#).

Jacob Haqq-Misra is an astrobiologist who studies planetary habitability, the search for extraterrestrial life, and the human settlement of Mars. He is a research scientist at the Blue Marble Space Institute of Science and has authored over 50 peer-reviewed publications. You can find him on Twitter [@haqqmisra](#) or on [his website](#).

From: [Jason Wright](#)
To: [ravi kopparapu](#)
Cc: [Jacob Haqq Misra](#); [Adam Frank](#); [Gelino, Dawn](#); [Kopparapu, Ravi Kumar \(GSFC-699.0\)\[UNIV MARYLAND COLLEGE PARK\]](#); [Ryan Felton](#); [Felton, Ryan C. \(GSFC-690.0\)\[CATHOLIC UNIV OF AMERICA\]](#); [Gelino, Dawn M \(JPL-7910\)\[CalTech\]](#); [Kopparapu, Ravi Kumar \(GSFC-6990\)](#); [Felton, Ryan C. \(GSFC-693.0\)\[CATHOLIC UNIV OF AMERICA\]](#)
Subject: [EXTERNAL] Re: TechnoClimes Applications
Date: Thursday, July 2, 2020 1:49:21 PM

So, is the question whether to let him register or let him help shape the content?

If the former, I'm agnostic. I don't think there's much for him at the conference but if he's a serious academic with an interest in technosignatures then I don't see why he shouldn't be allowed to attend.

If the latter, then while I totally agree that there is lots to study about UFOs and UFOlogy legitimately (we have a faculty member at Penn State that does so), I don't see the connection to TechnoClimes. The way we pitched this to NASA, this is primarily an astronomy/planetary science/astrobiology conference, as I see it, and the study of UFOs (especially an agnostic study) is not related to any of those things. There are many aspects of the search for technological life in the universe that fall outside the scope, not just UFOs—studies of how cognition leads to tool use, philosophical questions on the nature of artifice vs. nature, legal aspects of post-detection protocols, ethnographic studies of how scientists approach SETI, the next generation of radio astronomy instrumentation, lunar farside negotiations, etc. etc. etc.

So while I agree with his philosophical point that the study of UFOs can be serious, I don't think the fact that some people connect them to extraterrestrial technology without evidence is enough of a connection to SETI to warrant inclusion of the topic in our program.

I think I'm also wary of setting the precedent that SETI conferences are places to discuss UFOs or UFOlogy in general, even if only to discuss why it's not discussed!

Jason

On Thu, Jul 2, 2020 at 1:36 PM ravi kopparapu [\(b\) \(6\)](#) wrote:
Hi Jason and all,

Regarding Alex Wendt's nomination: Alex reached out to Jacob and I several months ago and we had multiple discussions with him on this topic, to understand his point of view. From what we have heard from him, he is not a typical UFO-enthusiast. Being a well-known academic in his field of political science (I guess the closest I can think of is similar to Jill Tarter for SETI field), he is actually quite agnostic about the nature of UFOs, and does not advocate for any extra-terrestrial hypotheses similar to the evidence-free claims in the popular literature. He is also not claiming that he is attempting to explain the nature of these objects scientifically (which is probably how they should be addressed anyway). His interests are in the politics of discussing UFOs in academia, in particular the taboo surrounding the topic. For this Technosignature conference, I think his proposal is linking the recent Navy UFOs as technosignatures, as they indeed are (again, no assumption about where those signatures came from). I found that it is a reasonable topic to discuss. However, I do agree that it may not necessarily be linked to SETI search (either local or distant), as an agnostic approach does not presuppose UFOs as SETI-linked. We can approach him with this careful distinction and see if he is open to it.

Ravi

On Thu, Jul 2, 2020 at 10:57 AM Jason Wright (b) (6) wrote:

Not really 48; not all of us are on there and Jill is on there twice.

They all look fine except:

Dubey, whose application is not responsive to the call.

Wendt, who is a UFOlogist (not sure how to politely decline him, or even if we should?)

There's a high school student in there (I'm cool with that)

On Thu, Jul 2, 2020 at 10:23 AM Jacob Haqq Misra (b) (6) wrote:

Hi Adam, Jason, Dawn, Ravi, and Ryan,

We received 48 applications for our online workshop, which nicely keeps us at our expected headcount.

Applications are attached as a PDF and are also [viewable on this spreadsheet](#). Please take a look and let me know if you have any thoughts about these applicants (I will do the same). I would like to send out links for registration next week, so let's make sure we are satisfied with this pool of attendees by **Monday, July 6**.

Jacob

--

Jason T Wright
Professor of Astronomy & Astrophysics
Deputy Director, Center for Exoplanets and Habitable Worlds
[NEID Project Scientist](#)
he/him/his
<https://sites.psu.edu/astrowright/>
[@Astro_Wright](#)

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Jason T Wright
Professor of Astronomy & Astrophysics
Deputy Director, Center for Exoplanets and Habitable Worlds
[NEID Project Scientist](#)
he/him/his
<https://sites.psu.edu/astrowright/>

[@Astro_Wright](#)

From: [Michael Lemonick](#)
To: [Kopparapu, Ravi Kumar \(GSFC-6990\)](#)
Subject: Re: [EXTERNAL] OK, we're running your commentary on UAPs
Date: Thursday, July 23, 2020 11:38:29 AM

OK, thanks. Let me investigate.

Michael D. Lemonick
Chief Opinion Editor, Scientific American
Office: (b) (6)
Mobile [REDACTED]

From: "Kopparapu, Ravi Kumar (GSFC-6990)" <ravikumar.kopparapu@nasa.gov>
Date: Thursday, July 23, 2020 at 11:36 AM
To: Michael Lemonick (b) (6)
Cc: (b) (6)
Subject: Re: [EXTERNAL] OK, we're running your commentary on UAPs

[External - Use Caution]

It is about Un-identified Aerial Phenomena (UAP) that Jacob Haqq-Misra and I wrote suggesting for a scientific investigation (attached). The last we heard was that it was in copy editing back in May. We have also sent our disclosure forms to Ericka Skirpan at that time.

Best
Ravi

Ravi kumar Kopparapu
8800 Greenbelt Road
NASA Goddard Space Flight Center
Mail Code 690, Building 34
Greenbelt, MD 20771
email: ravikumar.kopparapu@nasa.gov

Ph: (b) (6)

From: Michael Lemonick (b) (6)
Date: Thursday, July 23, 2020 at 11:26 AM
To: "Kopparapu, Ravi Kumar (GSFC-6990)" <ravikumar.kopparapu@nasa.gov>
Subject: Re: [EXTERNAL] OK, we're running your commentary on UAPs

I'm sorry, I have dozens of pieces going at any one time, and I'm only on my phone. Remind me of what UAP stands for

From: Kopparapu, Ravi Kumar (GSFC-6990) <ravikumar.kopparapu@nasa.gov>
Sent: Thursday, July 23, 2020 10:28:07 AM
To: Michael Lemonick (b) (6)
Subject: Re: [EXTERNAL] OK, we're running your commentary on UAPs

[External - Use Caution]

Hi Mike,
Jacob and I were wondering about the UAP article we submitted, and if you have any update on its status?
Thanks
Ravi

Ravi kumar Kopparapu
8800 Greenbelt Road
NASA Goddard Space Flight Center
Mail Code 690, Building 34
Greenbelt, MD 20771
email: ravikumar.kopparapu@nasa.gov

Ph: (b) (6)

From: Michael Lemonick (b) (6)
Date: Tuesday, May 19, 2020 at 3:53 PM
To: "Kopparapu, Ravi Kumar (GSFC-6990)" <ravikumar.kopparapu@nasa.gov>, (b) (6)
Subject: Re: [EXTERNAL] OK, we're running your commentary on UAPs

No timescale yet; the essay hasn't gone into copy editing yet, and I can't schedule it until it emerges. But we'll give you plenty of warning.

Michael D. Lemonick
Chief Opinion Editor, Scientific American
Office: (b) (6)
Mobile: (b) (6)

From: "Kopparapu, Ravi Kumar (GSFC-6990)" <ravikumar.kopparapu@nasa.gov>
Date: Tuesday, May 19, 2020 at 3:09 PM
To: Michael Lemonick (b) (6), (b) (6) <>
Cc: Lee Billings <(b) (6)>
Subject: Re: [EXTERNAL] OK, we're running your commentary on UAPs

Hi Michael,

Thank you. Do you have a timescale for running this article? My higher ups and NASA HQ wanted a heads up before publication.

Best

Ravi

Ravi kumar Kopparapu
8800 Greenbelt Road
NASA Goddard Space Flight Center
Mail Code 690, Building 34
Greenbelt, MD 20771
email: ravikumar.kopparapu@nasa.gov

Ph: (b) (6)

From: Michael Lemonick (b) (6)
Date: Tuesday, May 19, 2020 at 11:46 AM
To: "Kopparapu, Ravi Kumar (GSFC-6990)" <ravikumar.kopparapu@nasa.gov>,
(b) (6)
Cc: Lee Billings (b) (6)
Subject: [EXTERNAL] OK, we're running your commentary on UAPs

Expect our pro forma contract shortly

Michael D. Lemonick
Chief Opinion Editor, Scientific American
Office: (b) (6)
Mobile: (b) (6)

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From: [Shekhtman, Lonnie \(GSFC-690.0\)\[ADNET SYSTEMS INC\]](#)
To: [Mahaffy, Paul R. \(GSFC-6900\)](#); [Kopparapu, Ravi Kumar \(GSFC-6990\)](#); [Jones, Nancy N. \(GSFC-1300\)](#)
Cc: [Getty, Stephanie A. \(GSFC-6900\)](#); [Malespin, Charles A. \(GSFC-6990\)](#); [Domagal-goldman, Shawn D. \(GSFC-6930\)](#)
Subject: Re: [EXTERNAL] OK, we're running your commentary on UAPs
Date: Friday, July 24, 2020 9:03:57 AM

Thanks for sending, Ravi. I was wondering what happened to this. That took a long time to publish.

Lonnie

--

Lonnie Shekhtman
Senior Science Writer
Solar System Exploration
NASA's Goddard Space Flight Center
301-614-6833

From: "Mahaffy, Paul R. (GSFC-6900)" <paul.r.mahaffy@nasa.gov>
Date: Thursday, July 23, 2020 at 7:39 PM
To: "Kopparapu, Ravi Kumar (GSFC-6990)" <ravikumar.kopparapu@nasa.gov>, "Jones, Nancy N. (GSFC-1300)" <nancy.n.jones@nasa.gov>
Cc: "Getty, Stephanie A. (GSFC-6900)" <stephanie.a.getty@nasa.gov>, "Malespin, Charles A. (GSFC-6990)" <Charles.A.Malespin@nasa.gov>, "Domagal-goldman, Shawn D. (GSFC-6930)" <shawn.goldman@nasa.gov>, "Shekhtman, Lonnie (GSFC-690.0)[ADNET SYSTEMS INC]" <lonnie.shekhtman@nasa.gov>
Subject: Re: [EXTERNAL] OK, we're running your commentary on UAPs

Excellent – thanks.

UFOs as contrasted to the IFOs that we try and stop with masks.

pm

From: "Kopparapu, Ravi Kumar (GSFC-6990)" <ravikumar.kopparapu@nasa.gov>
Date: Thursday, July 23, 2020 at 5:44 PM
To: "Jones, Nancy N. (GSFC-1300)" <nancy.n.jones@nasa.gov>
Cc: Paul Mahaffy <paul.r.mahaffy@nasa.gov>, "Getty, Stephanie A. (GSFC-6900)" <stephanie.a.getty@nasa.gov>, "Malespin, Charles A. (GSFC-6990)" <Charles.A.Malespin@nasa.gov>, "Domagal-goldman, Shawn D. (GSFC-6930)" <shawn.goldman@nasa.gov>, "Shekhtman, Lonnie (GSFC-690.0)[ADNET SYSTEMS INC]" <lonnie.shekhtman@nasa.gov>
Subject: FW: [EXTERNAL] OK, we're running your commentary on UAPs

Hi all,

Our article on UFOs is scheduled to appear this coming Sunday noon Easter time. They gave a heads up as requested by HQ.

Thank you

Ravi

From: Michael Lemonick (b) (6)
Date: Thursday, July 23, 2020 at 3:21 PM
To: "Kopparapu, Ravi Kumar (GSFC-6990)" <ravikumar.kopparapu@nasa.gov>
Cc: (b) (6)
Subject: Re: [EXTERNAL] OK, we're running your commentary on UAPs

Here's the preview. The piece is set to publish at noon Eastern time on Sunday

<https://www.scientificamerican.com/article/unidentified-aerial-phenomena-better-known-as-ufos-deserve-scientific-investigation/?previewid=14DBF8D6-AF40-4899-89012DBF3B091004>

Michael D. Lemonick
Chief Opinion Editor, Scientific American
Office: (b) (6)
Mobile: (b) (6)

From: "Kopparapu, Ravi Kumar (GSFC-6990)" <ravikumar.kopparapu@nasa.gov>
Date: Thursday, July 23, 2020 at 12:50 PM
To: Michael Lemonick (b) (6)
Cc: (b) (6)
Subject: Re: [EXTERNAL] OK, we're running your commentary on UAPs

[External - Use Caution]

Also, before it publishes, could you let us know? NASA HQ wanted a heads-up so they can prepare a response if someone asks.

Ravi kumar Kopparapu
8800 Greenbelt Road
NASA Goddard Space Flight Center
Mail Code 690, Building 34
Greenbelt, MD 20771
email: ravikumar.kopparapu@nasa.gov

Ph: (b) (6)


From: Michael Lemonick (b) (6)
Date: Thursday, July 23, 2020 at 11:45 AM
To: "Kopparapu, Ravi Kumar (GSFC-6990)" <ravikumar.kopparapu@nasa.gov>
Cc: (b) (6)
Subject: Re: [EXTERNAL] OK, we're running your commentary on UAPs

I'm glad you asked! Ever had an airline lose your luggage? Same situation. The story did go to copy editing, but got electronically mislaid. They're on it now. My apologies for this embarrassing mistake.

Michael D. Lemonick
Chief Opinion Editor, Scientific American
Office: (b) (6)
Mobile: (b) (6)

From: "Kopparapu, Ravi Kumar (GSFC-6990)" <ravikumar.kopparapu@nasa.gov>
Date: Thursday, July 23, 2020 at 11:36 AM

Duplicate email chain - already processed



Deletion Page

Requester: John Greenewald

Request #: 21-HQ-F-00603

3 page(s) containing duplicate information is/are held in the file.

From: [Kopparapu, Ravi Kumar \(GSFC-6990\)](#)
To: [Michael Lemonick](#)
Subject: Re: [EXTERNAL] OK, we're running your commentary on UAPs
Date: Monday, July 27, 2020 8:25:26 AM

Thanks!

Ravi kumar Kopparapu
8800 Greenbelt Road
NASA Goddard Space Flight Center
Mail Code 690, Building 34
Greenbelt, MD 20771
email: ravikumar.kopparapu@nasa.gov

Ph: (b) (6)

From: Michael Lemonick (b) (6)
Date: Monday, July 27, 2020 at 8:14 AM
To: "Kopparapu, Ravi Kumar (GSFC-6990)" <ravikumar.kopparapu@nasa.gov>
Subject: Re: [EXTERNAL] OK, we're running your commentary on UAPs

Great! Here's the link to the published story

<https://www.scientificamerican.com/article/unidentified-aerial-phenomena-better-known-as-ufos-deserve-scientific-investigation/>

Michael D. Lemonick
Chief Opinion Editor, Scientific American
Office: (b) (6)
Mobile (b) (6)

From: "Kopparapu, Ravi Kumar (GSFC-6990)" <ravikumar.kopparapu@nasa.gov>
Date: Monday, July 27, 2020 at 6:55 AM
To: Michael Lemonick (b) (6)
Subject: Re: [EXTERNAL] OK, we're running your commentary on UAPs

[External - Use Caution]

My bosses gave their approval back in May after seeing the finalized article. So it is a go from me.

Ravi kumar Kopparapu
8800 Greenbelt Road
NASA Goddard Space Flight Center

Mail Code 690, Building 34
Greenbelt, MD 20771
email: ravikumar.kopparapu@nasa.gov

Ph: (b) (6)

From: Michael Lemonick (b) (6)
Date: Monday, July 27, 2020 at 6:54 AM
To: "Kopparapu, Ravi Kumar (GSFC-6990)" <ravikumar.kopparapu@nasa.gov>
Subject: Re: [EXTERNAL] OK, we're running your commentary on UAPs

Not from my perspective. That's why I sent the preview link to you, in case there might be from NASA's perspective. If it looks good to you, I'm happy to publish essentially right away.

Michael D. Lemonick
Chief Opinion Editor, Scientific American
Office: +(b) (6)
Mobile: (b) (6)

From: "Kopparapu, Ravi Kumar (GSFC-6990)" <ravikumar.kopparapu@nasa.gov>
Date: Monday, July 27, 2020 at 6:52 AM
To: Michael Lemonick (b) (6)
Subject: Re: [EXTERNAL] OK, we're running your commentary on UAPs

[External - Use Caution]

Ok, is there a concern over the content?

Ravi kumar Kopparapu
8800 Greenbelt Road
NASA Goddard Space Flight Center
Mail Code 690, Building 34
Greenbelt, MD 20771
email: ravikumar.kopparapu@nasa.gov

Ph: (b) (6)

From: Michael Lemonick (b) (6)
Date: Monday, July 27, 2020 at 6:46 AM
To: "Kopparapu, Ravi Kumar (GSFC-6990)" <ravikumar.kopparapu@nasa.gov>
Subject: Re: [EXTERNAL] OK, we're running your commentary on UAPs

No, because I wasn't sure it was OK to publish. If it is, I'll make it happen this morning.

Michael D. Lemonick
Chief Opinion Editor, Scientific American
Office: (b) (6)
Mobile (b) (6)

From: "Kopparapu, Ravi Kumar (GSFC-6990)" <ravikumar.kopparapu@nasa.gov>
Date: Monday, July 27, 2020 at 6:42 AM
To: Michael Lemonick (b) (6)
Cc: (b) (6)
Subject: Re: [EXTERNAL] OK, we're running your commentary on UAPs

[External - Use Caution]

Hi Mike,
Do you have a published link for our article on UFOs?
Thanks
Ravi

Ravi kumar Kopparapu
8800 Greenbelt Road
NASA Goddard Space Flight Center
Mail Code 690, Building 34
Greenbelt, MD 20771
email: ravikumar.kopparapu@nasa.gov

Ph: (b) (6)

From: Michael Lemonick (b) (6)
Date: Thursday, July 23, 2020 at 3:21 PM
To: "Kopparapu, Ravi Kumar (GSFC-6990)" <ravikumar.kopparapu@nasa.gov>
Cc: (b) (6)
Subject: Re: [EXTERNAL] OK, we're running your commentary on UAPs

Duplicate email chain - already processed

Deletion Page

Requester: John Greenewald

Request #: 21-HQ-F-00603

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From: [Kopparapu, Ravi Kumar \(GSFC-6990\)](mailto:Kopparapu, Ravi Kumar (GSFC-6990))
To: [Domagal-goldman, Shawn D. \(GSFC-6930\)](mailto:Domagal-goldman, Shawn D. (GSFC-6930))
Cc: [Arney, Giada N. \(GSFC-6930\)](mailto:Arney, Giada N. (GSFC-6930))
Subject: Re: [EXTERNAL] OK, we're running your commentary on UAPs
Date: Monday, July 27, 2020 8:36:18 AM

Yes, he clarified that in an email later. His concern was that if NASA approved it. I mentioned that my bosses said ok. It is now published:

<https://www.scientificamerican.com/article/unidentified-aerial-phenomena-better-known-as-ufos-deserve-scientific-investigation/>

Ravi kumar Kopparapu
8800 Greenbelt Road
NASA Goddard Space Flight Center
Mail Code 690, Building 34
Greenbelt, MD 20771
email: ravikumar.kopparapu@nasa.gov

Ph: (b) (6)

From: "Domagal-goldman, Shawn D. (GSFC-6930)" <shawn.goldman@nasa.gov>
Date: Monday, July 27, 2020 at 8:35 AM
To: "Kopparapu, Ravi Kumar (GSFC-6990)" <ravikumar.kopparapu@nasa.gov>
Cc: "Arney, Giada N. (GSFC-6930)" <giada.n.arney@nasa.gov>
Subject: Re: [EXTERNAL] OK, we're running your commentary on UAPs

I don't think he was commenting on the quality of your work, rather you getting permission to publish it...

shawn

--

Shawn D. Domagal-Goldman
Branch Chief, Planetary Systems Lab (code 693)
Solar System Exploration Division
NASA Goddard Space Flight Center
Pronouns: He, him, his
Work cell: (b) (6)

--

Programming note: With schools and summer camps closed due to the COVID-19 pandemic, I am on spending much of my "work-day" on child-care responsibilities, and am shifting some of my work to nights/weekends, including email. So if you receive an email from me outside of my or your normal business hours please do not feel obligated to send a response until it's "work time" where ever you are. If it is urgent or an emergency, I'll let you know.

From: "Kopparapu, Ravi Kumar (GSFC-6990)" <ravikumar.kopparapu@nasa.gov>

Date: Monday, July 27, 2020 at 6:48 AM

To: "Domagal-goldman, Shawn D. (GSFC-6930)" <shawn.goldman@nasa.gov>

Cc: "Arney, Giada N. (GSFC-6930)" <giada.n.arney@nasa.gov>

Subject: FW: [EXTERNAL] OK, we're running your commentary on UAPs

opparapu,♂


From: Michael Lemonick (b) (6)

Date: Monday, July 27, 2020 at 6:46 AM

To: "Kopparapu, Ravi Kumar (GSFC-6990)" <ravikumar.kopparapu@nasa.gov>

Subject: Re: [EXTERNAL] OK, we're running your commentary on UAPs

Duplicate email chain - already processed



Deletion Page

Requester: John Greenewald

Request #: 21-HQ-F-00603

6 page(s) containing duplicate information
is/are held in the file.

From: [Ramses Ramirez](#)
To: [Ravi kumar Kopparapu](#); [Jacob Haqq-Misra](#); [Kopparapu, Ravi Kumar \(GSFC-6990\)](#)
Subject: [EXTERNAL] Your Scientific American article on UAPs/UFOs
Date: Monday, July 27, 2020 11:36:08 AM

Hello Ravi and Jacob,

I like your brave Scientific American op-ed this very sensitive UAP/UFOs topic. This is a subject that's been a hobby of mine for much of my life, and it is quite fascinating. A couple of points..

Although most scientists won't dare come close to this topic, a minority of scientists do and have (e.g. J. Allen Hynek, the late Stanton Friedman..etc) worked on this for many decades and continue to do so (e.g. MUFON). MUFON, for instance, has a science review board (consisting of scientists from several disciplines) that reviews tons of these sightings. Scientists (I'd include aerospace engineers) have been using the scientific method to evaluate this phenomenon for a long while. It is true that we could use more though. Unfortunately, the taboo nature of this topic scares away most scientists.

To me, it seems that we need more governmental disclosure to make any real headway on this topic (I'd love to be proven wrong though). The recently disclosed "tic tac" military UFOs have certainly generated buzz, but I do not think we have enough information to definitively solve these cases. Plus, many researchers have put forth their own hypotheses for these cases.

That said, I would not dismiss the notion that some of these **might** be extraterrestrial in origin. However, I personally lean towards some of them being craft for some sort of governmental secret space program. Either way, the military would never admit to it and they may have no other choice but to silence you. :)

Thank you for your contribution!

--

Ramses Ramirez, Ph.D.
Tokyo Institute of Technology
Earth-Life Science Institute (Room 315)
Space Science Institute Affiliate Scientist
Research Scientist
<https://habitableplanets.wordpress.com>

From: [Kopparapu, Ravi Kumar \(GSFC-6990\)](#)
To: [Domagal-goldman, Shawn D. \(GSFC-6930\)](#)
Cc: [Arney, Giada N. \(GSFC-6930\)](#)
Subject: FW: [EXTERNAL] UFO
Date: Monday, July 27, 2020 6:50:11 PM

Ravi kumar Kopparapu
8800 Greenbelt Road
NASA Goddard Space Flight Center
Mail Code 690, Building 34
Greenbelt, MD 20771
email: ravikumar.kopparapu@nasa.gov

Ph: (b) (6)

From: Jose G A (b) (6)
Date: Monday, July 27, 2020 at 6:42 PM
To: "Kopparapu, Ravi Kumar (GSFC-6990)" <ravikumar.kopparapu@nasa.gov>
Subject: [EXTERNAL] UFO

Hi!: thanks for your UFO (OVNI in Spanish) remarks. You may like watching (sorry, only Spanish) a YouTube video from series 'Más allá', about OVNI, featuring the late Madrid practising psychiatrist Jiménez del Oso, he uses a 'Sophronization' voice, very expensive to learn, this told me Miguel Angel Jiménez-Arriero, once head of psychiatry service at Madrid teaching hospital '12 de Octubre'. Summary is easy: different origins, different tecnologías, different intentions, some contacted said being warned about UFO: 'There are some that when we meet them, we destroy them'

About the Kenneth Arnold case, some drawings point similarity to Horten Parabola, but it never went airborne, I'd say the round part is the machine, 'wings', contrails from propulsion system, the weather that day, that place, must be recorded somewhere, and feasibility of contrails showing ascertained.

If you consider the possibility of 'saucers' also travelling in time, the 'Venusians' who contacted Adamski may not be lying.

Another Spanish autor, JJ Benítez, described around 1976, in '100000 km tras los ovni', what looks similar to open nuclear magnetic resonance; an 'abducted' - you may like the site: www.stopabductions.com indicated being warned 'A catastrophe is about to happen', beign show in a flat screen, planet changed into a desert.

In my last year of primary school (b) (6) at May or June Day, I heard a 'rumble', looked through the open window, and watched an slowly flying silvered ovale, let's say a bit in planform as Rome coliseum, surrounded by an small halo, with a minimal trail same in color, moving from West to East, perpendicular to 'paseo Sagasta', I've heard same noise in 2 occasions, saw nothing, I was inside a room, also in a couple of movies dealing with UFOs.

An Italian newspaper report of these days indicated an Italian soccer game was interrupted upon sighting something similar.

They said 'field propulsion' will generate a rumble; a nearly identical or identical noise is in YouTube as 'Tao's hum'

Is it true that metal sheets in remains of capt Mantell P-51 had many small holes, as reported years later in SciAm from 'Particle beam weapons'?

What about flame keeper and bulb onboard computer of Mig-25 being resistant to saucer's electromagnetic pulse?

The most amazing experience I had was in a folk holiday, st Agustín?-, Bujaraloz, Zaragoza, I was born 1952, had less than 10 yo, a wafer peddler, their machine, existing in Spain and in India, named here barquillera, looks to me similar to space weapon in Arthur C Clarke 'Rendezvous with Rama', peddler offered us 'Flying through space after death in one like that, but much bigger', for this, requirement was saying an awful blasphemy; thanks the Lord, I didn't, after this, peddler offered extracting somebody from tin barquillera, by eating a wafer, a 'communion', I told my family about incident, me and 2 other Kids involved, don't remember their names, they went to parish, the priest mosen José went to guardia civil, head was mr Barrios, GC did not provide me further info, peddler was put under arrest; as they considered him insane, was sent to Zaragoza in a van. He escaped or was released, never arrived to destination.

No need saying this episode antecedes the publication of Clarke novel, 1972 or so.

You know 'Hombres de negro', 'Men in black', an Spanish book from late 60s or early 70s, is an US movie.

Thanks for your attention. Blessings +

Jose

(b) (6)

(b) (6)

From: (b) (6)
To: (b) (6) ravikumar.kopparapu@nasa.gov; (b) (6) [Kopparapu, Ravi Kumar \(GSFC-6990\)](#)
Subject: [EXTERNAL] UFO's crash - My personal experience
Date: Tuesday, July 28, 2020 12:02:03 AM

Hi Ravi and Jacob,

I recently saw your article in Scientific America, and would like to thank you for being involved.

Since the US Navy acknowledged the ufo reality I have begun sharing my own experience in the hope to move the conversation beyond the "believe it or not" debate. I would like to support people, including yourself in bringing this phenomenon into the public awareness. It seems to me that this is a very important topic which is desperately lacking real discussion.

In Feb 1980 my brother and I witnessed a chase between two hostile craft that resulted in one of those craft crashing into a tree. A third witness who lived near the crash site was able to have a close look and described the craft as resembling an 8m long yellow speed boat from the under side.

I have included a link to a video which I made, and a website. They include other links to supporting documents. I hope the information is useful to you.

Kind regards

Phil Tindale

YouTube video of my experience

https://urldefense.proofpoint.com/v2/url?u=https-3A__www.youtube.com_watch-3Fv-3D9pbE87Z1bS8-26feature-3Dyoutu.be&d=DwIDaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=t0gzjcFa1-Ler_1m6-XLzAaDFB46Qf6319HOGsbkiCg&m=9r5gLCFMbvCvArwLKE5GkbNVv9RkmKJtI4mpDB4xpSE&s=FCcEJBEBIbAOwzwp-RX1TegdRrz9BXOpB_qNILmYHcc&e=

The Extra-terrestrial Presence – Stirling UFO Crash Information

https://urldefense.proofpoint.com/v2/url?u=https-3A__dawwsley100.wixsite.com_website&d=DwIDaQ&c=ApwzowJNAKKw3xye91w7BE1XMRKi2LN9kiMk5Csz9Zk&r=t0gzjcFa1-Ler_1m6-XLzAaDFB46Qf6319HOGsbkiCg&m=9r5gLCFMbvCvArwLKE5GkbNVv9RkmKJtI4mpDB4xpSE&s=BDPLDy916d5yj2pKYbFDH6H8Ny97K6mNXOc7J1SE50&e=

From: [Swenson, Christina \(GSFC-699.0\)\[ASRC FEDERAL SYSTEM SOLUTIONS\]](#)
To: [Kopparapu, Ravi Kumar \(GSFC-6990\)](#)
Subject: RE: PEL Activities and Highlights: July 20 - July 24
Date: Tuesday, July 28, 2020 12:03:21 PM

Amazing! This looks great Ravi. Thanks for all that you do.

Christina Swenson

Project Support Specialist, PAAC V

Solar System Exploration Division

W: 301-614-6983 | C: (b) (6)

NASA GSFC, Bldg. 33, Room C211

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From: Kopparapu, Ravi Kumar (GSFC-6990) <ravikumar.kopparapu@nasa.gov>
Sent: Tuesday, July 28, 2020 11:37 AM
To: Swenson, Christina (GSFC-699.0)[ASRC FEDERAL SYSTEM SOLUTIONS] <christina.swenson@nasa.gov>
Cc: Malespin, Charles A. (GSFC-6990) <Charles.A.Malespin@nasa.gov>; Guzewich, Scott D. (GSFC-6990) <scott.d.guzewich@nasa.gov>
Subject: Re: PEL Activities and Highlights: July 20 - July 24

Hi Christina,
Thanks. Here is the info:

Ravi Kumar Kopparapu (699) attended a week long virtual exoplanets meeting ([Exoplanets 3](#)), where he presented a poster. (Snowball in Hell: The Potential Steam Atmosphere of TOI-1266c)

Ravi Kumar Kopparapu (699) wrote an article with Jacob Haqq-Misra (Blue Marble Space Institute of Science) on UFOs, advocating for a scientific investigation rather than speculation. <https://www.scientificamerican.com/article/unidentified-aerial-phenomena-better-known-as-ufos-deserve-scientific-investigation/>

Ravi Kumar Kopparapu (699) attended a high school NASA interns meeting (virtual) to talk about the career paths leading to become a scientist.

Ravi

From: "Swenson, Christina (GSFC-699.0)[ASRC FEDERAL SYSTEM SOLUTIONS]" <christina.swenson@nasa.gov>
Date: Tuesday, July 28, 2020 at 11:11 AM
To: "Kopparapu, Ravi Kumar (GSFC-6990)" <ravikumar.kopparapu@nasa.gov>
Cc: "Malespin, Charles A. (GSFC-6990)" <Charles.A.Malespin@nasa.gov>, "Guzewich, Scott D. (GSFC-6990)" <scott.d.guzewich@nasa.gov>
Subject: FW: PEL Activities and Highlights: July 20 - July 24

Hi Ravi,

Thanks for sending these over! I believe all could be highlights to submit this week – very awesome!

I slightly reworded and may need to add a few additional details. What are your thoughts?

Ravi Kumar Kopparapu (699) attended a week long virtual exoplanets meeting ([Exoplanets 3](#)), where he presented a poster. (name of poster?)

Ravi Kumar Kopparapu (699) wrote an article with Jacob Haqq-Misra (Blue Marble Space Institute of Science) on UFOs, advocating for a scientific investigation rather than speculation. <https://www.scientificamerican.com/article/unidentified-aerial-phenomena-better-known-as-ufos-deserve-scientific-investigation/>

Ravi Kumar Kopparapu (699) attended a high school interns meeting (**what high school?**) to talk about the career paths leading to become a scientist.

Best regards,
Christina

Christina Swenson

Project Support Specialist, PAAC V

Solar System Exploration Division

W: 301-614-6983 | C: (b) (6)

NASA GSFC, Bldg. 33, Room C211

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From: Kopparapu, Ravi Kumar (GSFC-6990) <ravikumar.kopparapu@nasa.gov>

Sent: Monday, July 27, 2020 8:14 AM

To: Malespin, Charles A. (GSFC-6990) <Charles.A.Malespin@nasa.gov>

Cc: Guzewich, Scott D. (GSFC-6990) <scott.d.guzewich@nasa.gov>; Swenson, Christina (GSFC-699.0)[ASRC FEDERAL SYSTEM SOLUTIONS] <christina.swenson@nasa.gov>

Subject: Re: PEL Activities and Highlights: July 20 - July 24

Hi Charles, Scott and Christina,

This week I will be attending a week long virtual exoplanets meeting ([Exoplanets 3](#)), where I am presenting a poster. I will also be attending the high school interns meeting to talk about the career paths leading to become a scientist.

I don't know if this is a highlight or not, but here is an article that I wrote with Jacob Haqq-Misra (Blue Marble Space Institute of Science) on UFOs, advocating for a scientific investigation rather than speculation.

<https://www.scientificamerican.com/article/unidentified-aerial-phenomena-better-known-as-ufos-deserve-scientific-investigation/>

Thanks
Ravi

Ravi kumar Kopparapu
8800 Greenbelt Road
NASA Goddard Space Flight Center
Mail Code 690, Building 34
Greenbelt, MD 20771
email: ravikumar.kopparapu@nasa.gov

Ph: (b) (6)

From: (b) (6) on behalf of "Malespin, Charles A. (GSFC-6990)"
<Charles.A.Malespin@nasa.gov>

Date: Sunday, July 26, 2020 at 7:02 PM

To: 699 Staff (b) (6)

Subject: PEL Activities and Highlights: July 20 - July 24

Hi PEL,

A few items of note for this week:

- Reminder, we will ask that you send your weekly plans and highlights to Christina, myself, and Scott. **This is expected from EVERYONE. We have had a reduced response recently, please make sure to update the google doc and provide Scott and myself with your weekly plans.**
- Another reminder to please make sure to fill out Juri's spreadsheet if you have done anything related to flood work (eg, going on center to check equipment, zoom call to check lab/office, etc).

<https://nasa->

my.sharepoint.com

(b) (6)

(b) (6)

- In an effort to keep in touch with everyone, we will have a staff meeting on every Tuesday (9 am). Everyone should have received a Teams invite from Christina for this meeting, so let me know if you did not get it

Reminder of the required for next week:

1. **Activities and Plans** – Please send a few brief bullets on your activities this week to me, with a cc to Scott.
2. **Highlights** – These would fall into the categories below and should be sent to me, with a cc to Scott and Christina, by [11:00am Wednesday](#). They are open to submissions by everyone working on PEL projects, and these updates are extremely helpful to representing the activities in the PEL, as they are reported up (and read!) through the management chain. For those supported by FLare, GIFT, EIMM, SEEC, and/or Geodesy, please include an attribution to any highlight that is associated with work package support.
3. **Where can we find you?** -- Don't forget to let us know your whereabouts by shared spreadsheet or email!

<https://docs.google.com>

(b) (6)

<https://docs.google.com>

Let me know if you have any additions to the list of announcements, and have a great week!

Charles

-----Highlight categories-----

[Science Discovery](#)

[Science Awards](#)

[Mission and Project News \(also include NTR submissions\)](#)

[Published Papers \(only submit the week published online\)](#)

Author1, A. B. (6xx), Author2, A. B. (6xx), Author3, A. B. (6xx), Year: "This is the title of the paper," Journal Name, citation (if available), doi (if available), url (if available). Lastly, there should be a sentence or more that explains what this paper is about. e.g. This papers describes some great new results. Goddard played a primary role etc. etc.

[Submitted Papers \(for Lonnie Shekhtman only\)](#)

[Proposals](#)

[Significant Events/Presentations](#)

[External Interactions](#)

[Communication/media](#)

[Community Service](#)

[Education and Outreach](#)

Staff Changes

Charles A Malespin

Chief, Planetary Environments Lab (Code 699)

NASA Goddard Space Flight Center

301-614-6042 (o) (b) (6) (c)

<https://science.gsfc.nasa.gov/solarsystem/atmosenvironments/>

From: (b) (6)
To: ravikumar.kopparapu@nasa.gov; [Kopparapu, Ravi Kumar \(GSFC-6990\)](#)
Subject: [EXTERNAL] 'Unidentified Aerial Phenomena,' Better Known as UFOs, Deserve Scientific Investigation
Date: Friday, July 31, 2020 3:59:29 AM

<https://www.scientificamerican.com/article/unidentified-aerial-phenomena-better-known-as-ufos-deserve-scientific-investigation/?fbclid=IwAR0DUk1A15I21vlldjFU1QVmGfAQkBxA7zYZGTnlMF1kJvtfKMdUMjp2kXE>

Good day Ravi,

I saw the above article in SCIENTIFIC AMERICAN that you co-authored and thought you might be interested in the scientific evidence of UFOs that can be seen in this video of Space Shuttle Columbia Mission STS-75 in Feb/Mar 1996 that had an ultra-violet camera aboard, which showed many very large UFOs maneuvering around that were estimated to be "2 to 3 nautical miles in diameter", consequently, not a "little debris" as described by one of the astronauts. Some of them de-materialize & materialize, which shows their apparent inter-dimensional capability.

<https://www.youtube.com/watch?v=t-KYzVSVsI>

Best regards,

Q. Dean Sloan – Theosophical Metaphysicist

<http://www.qdeansloan.com>

From: [Jacob Haqq Misra](#)
To: [John Curcio](#)
Cc: [Kopparapu, Ravi Kumar \(GSFC-699.0\)\[UNIV MARYLAND COLLEGE PARK\]](#); [Kopparapu, Ravi Kumar \(GSFC-6990\)](#)
Subject: [EXTERNAL] Re: Scientific American Article - UAP's
Date: Monday, August 10, 2020 11:58:24 AM

Thank you for sending this, I will take a read when I can.

On Tue, Aug 4, 2020 at 11:26 PM John Curcio <(b) (6)> wrote:

The attached article is must reading for some background on NASA's involvement (or lack thereof) in the investigation of UAP.

John J. Curcio, Ph.D.

On Aug 3, 2020, at 9:26 PM, Jacob Haqq Misra <(b) (6)> wrote:

Hi John,

Thank you for your encouraging comments and for reading our article. Change can be slow, but perhaps now is the time we will see at least a little bit of change.

Jacob

On Sun, Aug 2, 2020 at 11:37 PM John Curcio <(b) (6)> wrote:

I applaud you both for advocating for a serious, scientific, interdisciplinary and agnostic study of the UAP/UFO phenomenon. I agree that this phenomenon has once again made its way back into the news because of the recently released U.S. Navy videos that purportedly show "unidentified aerial phenomena" (UAP) in our skies.

As you state in your article, the proposal to scientifically study the UAP phenomena is not new. Over the last 60 years some real brave and brilliant individuals have staked their careers and reputations by publicly proclaiming the need for a serious scientific investigation of this phenomena, however, the scientific establishment (including NASA) didn't permit or tolerate the

slightest ray of sunlight to shine upon this taboo subject. Fast forward to the year 2020 and we find ourselves in almost the same predicament. Maybe things will change, but I'm not sure.

I agree that the transient nature of UAP events, and hence the unpredictability about when and where the next event will happen, is likely one of the main reasons why the UAP phenomena has not been taken seriously in scientific circles. However, the scientific community will never be able to identify any pattern at all without the ability to systematically collect this special type of data. But collecting this type of data will require much more sophisticated instruments than the typical academic scientist has at their disposal. The type of resources necessary for this endeavor are assets owned and operated by our government. Unless hard evidence crash lands on the roof of some university lab, we will no doubt need to keep looking up into the sky for usable data. For that reason, we would need the cooperation and assistance of the government agencies that operate and control the many constellations of space satellites that orbit the planet. Whether from the Dept. of Defense, or National Reconnaissance Office, imaging technology must be utilized to provide continuous surveillance of our skies. Fat chance of that happening, right? I wouldn't hold my breath waiting for that to occur.

I firmly believe that this phenomena will ultimately be explained as either being assets from unacknowledged special access programs run by one or more of our own agencies, OR, it's something extraterrestrial. If its the case of the former, than shame on our government for perpetuating decades of confusion and frustration. However, if it's the case of the latter, than let's disclose once and for-all, and begin a brand new chapter in human history!

Keep writing on this topic, and getting traditionally silent and

taboo-perpetuating magazines like Scientific American to publish your opinions. Ravi, as for NASA, that's a another problem all together (NASA - Never A Straight Answer).

John J. Curcio, Ph. D.

INVITED ESSAY

UFOs and NASA

RICHARD C. HENRY

Department of Physics and Astronomy, The Johns Hopkins University, Baltimore, MD 21218

Abstract—In 1977 President Carter's Science Advisor recommended that a small panel of inquiry be formed by NASA to see if there had been any new significant findings on UFOs since the US Air Force-sponsored investigation of UFOs ("Condon Report") a decade earlier. Five months later, NASA responded to that recommendation by proposing "to take no steps to establish a research activity in this area or to convene a symposium on the subject." This article offers a partial inside look at how that decision was made at NASA.

Introduction

Forty years ago Kenneth Arnold's sighting of "flying saucers" inaugurated the modern era of observation of Unidentified Flying Objects, or UFOs. The possibility that some UFOs are actually spacecraft, bearing intelligent beings from another world, has focused intense public interest on the subject.

While only a very small number of reputable scientists has ever taken UFOs seriously, the related search for radio signals from other civilizations has slowly increased in "respectability" over the decades following the pioneering suggestion of such searches by Cocconi and Morrison (1959). A turning point occurred, however, when Hart (1975), and Tipler (1980), argued convincingly that an intelligent civilization in the galaxy would rapidly physically colonize the galaxy (see also Jones, 1981). Their suggested conclusion is that we are in fact the only civilization in our galaxy, if not the Universe.

An alternative conclusion is that one should perhaps take more seriously the possibility that some UFO reports do represent manifestations of galactic intelligence.

The canonical study of that possibility is "Scientific Study of Unidentified Flying Objects" (Condon & Gillmor, 1968), the so-called "Condon Report," which concluded, despite Condon's clearly negative feelings about the value of UFO study, that of 59 cases studied, two involved "probable UFOs" and two "possible UFOs" (Sturrock, 1987).

Over the second half of the year 1977, the National Aeronautics and Space Administration found itself, as a result of a letter from the White House, considering whether more should be done on the subject of UFOs, and in particular, whether NASA should do it.

NASA's final response, which came at the end of 1977, was worded cautiously, but in effect said "no" to the White House. The present paper bears on how NASA coped with the White House request.

Acceptance by the establishment of the notion that alien intelligences are active in the vicinity of the Earth, would involve a profound change in a fundamental paradigm that governs our activity as a society. (For example, President Reagan has remarked, to Mikhail Gorbachev, that American and Soviet societies would bury their differences if the world were threatened by an alien intelligence.)

Also, NASA has a large science constituency. According to a *Science Magazine* report (16 December, 1977, p. 1128) "NASA seems to fear that the reopening of the question of the genuineness of visitors from outer space will legitimize a subject most establishment scientists consider phony and a waste of time."

How exactly did NASA cope with this "hot potato," and why did NASA decline the White House request? In the next section I describe NASA's interaction with the White House, and in the following section I specify more completely the aim of the present paper. The remainder of the paper details aspects of NASA's activity in dealing with the White House request.

UFOs: NASA and the White House

On July 21, 1977, Dr. Frank Press, Science Advisor to President Jimmy Carter, sent a "Dear Bob" letter to Dr. Robert Frosch, Administrator of the National Aeronautics and Space Administration.

The letter opens by indicating that the White House "is becoming a focal point for an increasing number of inquiries concerning UFO's," and Press suggests that NASA should instead become the focal point for general correspondence, and that those inquiries which come to the White House henceforth be sent to the designated desk at NASA.

Press goes on, however, to say that "since it has been nearly a decade since the Condan (sic) report, I believe that a small panel of inquiry could be formed to see if there are any new significant findings" on the subject of UFOs. He suggested that the panel of inquiry "could be formed by NASA," and stated that "since this is a public relations problem as much as anything else, people who are known to be interested in the problem and also highly known, such as Carl Sagan, ought to be involved."

His letter is reproduced at the end of the paper as Appendix 1.

NASA, and the country, were aware that President Carter himself had once reported a UFO sighting. In an early draft of an Information Sheet (Number 78-1), prepared in early 1978 (that is, following NASA's responses to Press's letters), NASA described Carter's sighting as follows:

PRESIDENT CARTER'S UFO SIGHTING — While serving as Governor of Georgia, Mr. Carter reported to NICAP that he had seen a bright, moving object in the sky over Leary, GA in October 1969. He said the object was visible for 10 to 12 minutes

and, at one point, shone as brightly as the Moon. The regional NICAP representative investigated the sighting and reported there was no evidence to support anything beyond placing what Mr. Carter saw in its "unidentified" category.

Thus, it could not be completely clear to Dr. Frosch exactly what the significance of Press's letter was—simply an attempt to clear Press's desk of mail that he was not equipped to answer, or a White House expression of real interest in UFOs.

Frosch responded to Press on September 6, 1977 (Appendix 2), indicating that NASA was "inclined to agree with your recommendation," but indicating that "there are a number of questions that need to be resolved before any formal program is undertaken." In particular he noted that "a panel of inquiry such as you suggest . . . would require some additional resources [money] for the inquiry and for follow on activity . . . we should assure ourselves that an inquiry is justified. I believe we could do this by naming a NASA project officer to review reports of the last ten years and to provide a specific recommendation relative to any further inquiry by the end of this year. If you concur, I will initiate this action." He enclosed, for Press's information, a NASA Information Sheet (76-6) on "Unidentified Flying Objects" (Appendix 3). Press gave the requested concurrence on September 14, 1977 (Appendix 4).

Then, on December 21, 1977, Frosch, in a remarkable letter to Press, "proposed" that "NASA take no steps to establish a research activity in this area [UFO's] or to convene a symposium on the subject" (Appendix 5). There is no mention of a project officer, or of any review "of reports of the last ten years," but Frosch indicates that "we have given considerable thought to the question of what else the United States might and should do in the area of UFO research. There is an absence of tangible or physical evidence available for thorough laboratory analysis," and he indicates that "we stand ready to respond to any *bona fide* physical evidence . . ."

Purpose of This Paper

What happened within NASA, resulting in the two letters that Frosch wrote to Press? How does a government agency formulate a response to, in effect, the President of the United States, on a topic of the peculiar sensitivity, interest, and controversial nature, as UFOs? It is the purpose of the present paper not to actually answer that question, but to provide information bearing on that question. To actually answer the question, as we shall see, would require substantial additional information from many individuals. Thus, the present paper represents an "interim report" that might be followed in the future by a more global inquiry by others.

In order to understand why this paper is not more comprehensive, it is necessary to understand how NASA works, and its structure.

NASA

NASA is a large organization, with Centers in various parts of the country. In 1976 (but to a much lesser extent today) the Directors of the various Centers played a powerful role in NASA policy making. Apart from those specific individuals, however, NASA policy making was concentrated entirely in persons at NASA Headquarters in Washington, DC.

The structure of NASA Headquarters, as of January 1978, is shown in Figure 1. From October 1976, to August 1978, I was Deputy to Mr. Bland Norris, Director of the Astrophysics Division, which was part of the Office of Space Science; that Office was directed by the Associate Administrator for Space Science, Dr. Noel W. Hinners; his Deputy was Mr. Tony Calio. Hinners reported directly to the Administrator, as did Dr. John Naugle, Science Advisor. Policy making stopped with Hinners, all of us below being providers of information and advice, and executors of policy.

NASA Headquarters was an interesting and, to an academic person, strange place. It had a great degree of vertical structure. Hinners would occasionally, and in an almost embarrassed manner, stroll around the fifth floor from the "front office" he inhabited. The Administrator (on the seventh floor) was even more inhibited—an Administrator's ramble in the building was a formal, prepared, activity. Such things did not happen often. This was not a reflection of the personalities of the two men (in fact both are personally warm, intelligent, and charming); it was a product of the institutional structure of NASA itself.

Coherence of policy and activity was maintained in a clever, effective way, best illustrated by an example. Suppose that scientist John Doe writes an angry letter to someone at some level in NASA. The letter is immediately copied (often without the recipient even seeing it) and sent to all the lowest levels in Headquarters that the secretary deems relevant, considering the content of the letter (Naugle joked that he had once received a letter from an old girlfriend, "and it had gone everywhere, since the subjects were so general!"). A draft reply is generated by the lowest-level person on the distribution, and this draft works its way up through the entire organization for, finally, signature and mailing by the original recipient (who now reads the letter perhaps for the first time). At any point in the chain, the draft reply letter may be rewritten by the higher official. Each level must concur with the version sent higher, by initialing in the appropriate place.

This system works extremely well. Everyone in NASA Headquarters who needs to know about the letter knows it, and attempts from outside to set the system against itself are doomed. This same mechanism is often used in areas of policy, to obtain comment from many levels.

The result of this vertical structure, however, is that it often is not clear in the end just where the policy that is "signed off on" by the responsible senior official actually originated, or what precisely motivated specific items or changes in items. Each individual sees only what flows up or down through

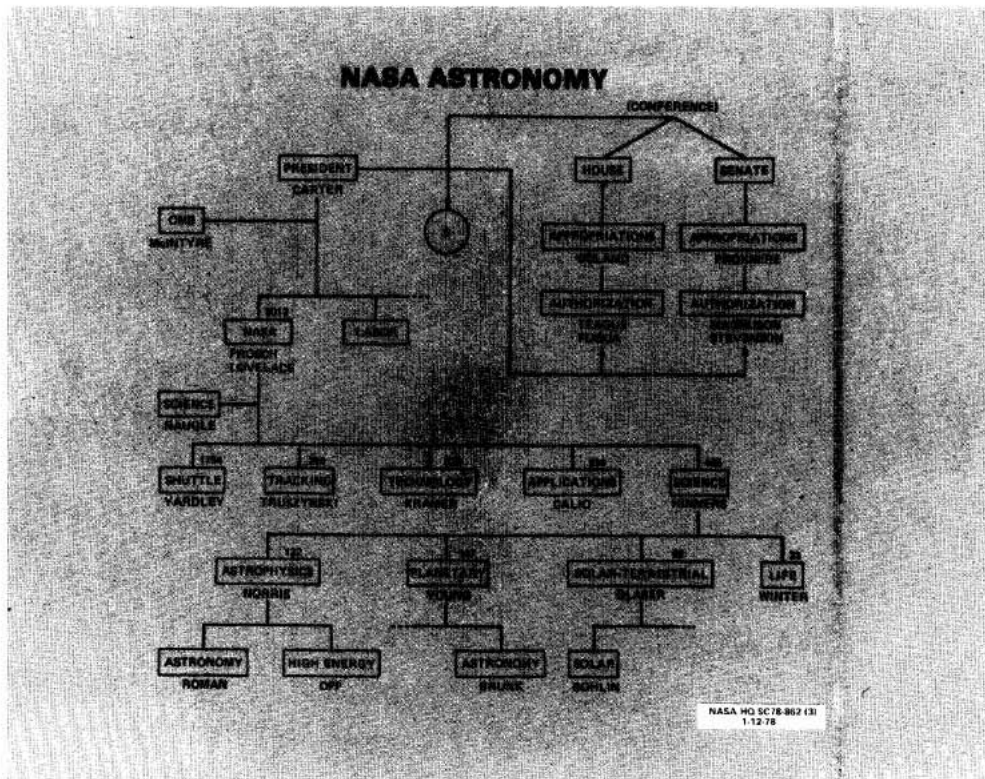


Fig. 1. The structure of policy making, policy administration, and funding, with regard to NASA, in January 1978. Numbers indicate annual budget in hundreds of millions of dollars.

his or her level, not the total picture, which is seen by no one. This of course holds true in the case of my personal perspective on the NASA-White House UFO activity. Thus, in the present paper on NASA's activity regarding the UFO question, I can only present certain documents, and attempt a little detective work toward the question of "who shot John?", that is, who made the basic NASA decision concerning UFOs, a decision apparently still in force today. Let us begin.

The Author at NASA

Bland Norris telephoned me (I was an Associate Professor at The Johns Hopkins University) from Woods Hole during the summer of 1976, and in effect offered me the position of his Deputy. He was almost certainly influenced to do this by George Field, the eminent astronomer who was then head of the Physical Science Committee (PSC) (the internal NASA Committee advisory to Hinners). At Woods Hole a high-level group was studying the Hornig Committee report on the proposed management structure for the proposed Space Telescope, and some of the group apparently felt that having a scientist (such as myself) from the astrophysics community move to NASA Headquarters for a few years would help in "selling" the Space Telescope to the Office of Management and Budget, and Congress. Norris, an excellent engineer and administrator, had no knowledge of astrophysics (although he did take a Community College night course in astronomy during my period at NASA). On my arrival at Headquarters, I found that in fact Space Telescope was in excellent hands with Warren Keller and Nancy Roman. Indeed, a pleasant surprise was the uniformly excellent quality of people I found in the Office of Space Science.

At about the same time that I arrived, David Morrison, a well-known scientist from the University of Hawaii, came to occupy a roughly similar position in the Planetary Division. Morrison was to try to sell Galileo (a mission to the planet Jupiter), while I sold Space Telescope, and there was friendly rivalry between us. (Both Space Telescope and Galileo did succeed in becoming approved missions but—a decade later—neither has been launched.)

Shortly after my arrival at NASA, Hinners' Deputy, Tony Calio, strolled down the hall to my office with something on his mind. I did not know, yet, how unusual this was. He wanted someone to handle SETI, the "Search for Extraterrestrial Intelligence," and he had fixed on me. As this subject is clearly relevant to NASA's attitude toward UFOs, I will expand on this, my earlier (and later) involvement with SETI.

John Billingham, at NASA's Ames Research Center, was the person who was focusing an attempt to get NASA to fund, and indeed to carry out, a radio search for extraterrestrial intelligence. A detailed report, funded by NASA (Morrison, Billingham, & Wolfe, 1977) was in preparation. Calio asked me to look into the matter and recommend whether the Office of

Space Science should fund SETI, and at what level. An interesting complication was that NASA's Jet Propulsion Laboratory (JPL) had a different approach to SETI than had Ames, and wanted to carry out its program. In essence, Ames wanted to look with very great sensitivity at small numbers of nearby stars, at specific frequencies which Ames had somehow deduced would be used by other civilizations, while JPL wanted to survey the whole sky at a vast number of frequencies, paying the price, of course, of greatly reduced sensitivity. I quickly became convinced that the JPL approach was the right one, and that the Ames approach was a waste of money. It seemed to me that it was not right for the young, new, poor civilization (us) to have to spend taxpayers' money to get great receiving sensitivity; instead, the old, experienced, rich civilization (them) should spend the money to get great transmitting power. Also, I felt that if there were civilizations broadcasting from nearby stars, we would already know it; that in fact they would be aware of us and might even be here (UFOs?).

A good indication of my attitude on these matters is given by the letter I wrote (Appendix 6) to Major Ret. Colman S. Von Keviczky, in reply to his letter (Appendix 7) to Ichtiaque Rasool (who was Hinners' personal science advisor).

Billingham pressed me hard to come up with some immediate funding for his SETI activity and, quite remarkably, I was able to do so. Someone had told me that the front office had some few hundred thousand dollars available, as a result of some reprogramming. This was unusual; normally only the lowest level people at NASA Headquarters actually had money, and if you tried to take it from them, they made you very aware of how much damage you were doing. Ed Wash, Hinners' excellent financial man, told me in his usual worried way that he had wanted to reserve the reprogramming money for solar sailing (which was about to enter a "shoot-out" with the solar electric propulsion over which was to become the planetary program propulsion "new technology" of the 1980's—rather pathetic in retrospect!). However, he gave me half the money, which I gave to Ames.

In formulating our budget for the next fiscal year, Norris and I placed the JPL program adjacent to, but above, the Ames program, with both of them right at the very bottom of our Astrophysics Budget priorities, and then we sent the budget up to Hinners for possible re-prioritization and for merging of our budget with those of the Planetary, Solar-Terrestrial, and Life Sciences (see Figure 1) Divisions.

Tony Calio himself was quite enthusiastic on the subject of SETI. Hinners was considerably less enthusiastic; in fact Calio told me at one point "this is the only thing Noel and I have ever come apart on." Possibly Hinners did lack belief in the reasonableness of SETI, but I suspect that his greatest concern was for the stature of his science program and its prospects. At a public lecture at Princeton, Hinners asked the audience to "vote" as to whether SETI represented a proper use of public funds (they agreed it did).

It was my understanding, some weeks after budget submission, that I had

won a victory, albeit a Pyrrhic one: The NASA budget that emerged, and was sent to the President's Office of Management and Budget (OMB), contained only the JPL program, but unfortunately at too low a priority level to survive OMB. I was astonished that when the budget was returned from OMB, SETI was still included; that is, it had been moved to a sufficiently higher position in the Carter "zero-based budgeting" priority that it had survived OMB's financial knife.

This is a vivid example of how one can seldom be certain of "who shot John." For example, at whose level was the JPL program separated from the Ames program? Hinnners? Frosch? And who at OMB did the reprioritizing, and why? On the latter question, I was able to obtain some information, much later. On May 17, 1978, Alan Lovelace, Frosch's Deputy, wrote to W. Bowman Cutter, Executive Associate Director for Budget, Office of Management and Budget, inviting him to come over to NASA Headquarters some evening for dinner, and an informal briefing on astronomy by me and David Morrison. Cutter had apparently expressed an interest in such a briefing some time in April. The dinner took place on July 13, 1978. Frosch was not able to be present, and neither was Hinnners: The senior NASA person present was Adrienne Timothy, who had replaced Rasool, who had left NASA. The dinner and subsequent slide shows went very well; in particular, Morrison did his usual brilliant job expounding the spectacular NASA planetary images. At dinner things were sufficiently informal that I felt able to mildly enquire about how it had happened that SETI had survived OMB. Cutter replied "I took astronomy at Harvard from Carl Sagan, and I did it for Carl."

The subsequent history of SETI on Capitol Hill, was the award of a Golden Fleece by Senator Proxmire (February 16, 1978), and the rejection by Congress of initiation of a SETI program. I was the person who was invited to the Hill to expound the program to Proxmire's aide, in preparation for the Fleece—rather fun, but sad for SETI. (After I left NASA, SETI was given to Life Sciences, and Proxmire's acquiescence was somehow obtained. A SETI program—JPL and Ames—is moving forward today.)

Our presence at the Cutter dinner is an example of the special role that Morrison and I played while at NASA, as active scientists with much greater technical knowledge of our fields than almost anyone else at Headquarters (but, I must add, negligible administrative ability, at least in my case, compared with almost anyone else at Headquarters). We were called on when technical substance and scientific depth were needed. I will end this section with another example of this, which is of special interest because President Carter was directly involved.

On November 15, 1977, I found on my desk a note for Bland Norris from David Williamson, Jr. I later learned that Williamson was "Code AX," Special Projects (Hinnners was Code S, Science, and I was Code SAD, Science Astrophysics Deputy; the reader can use these Codes to track "who saw what," in certain of the appendices). Williamson was located on the

seventh floor, with the Administrator (Code A). (Williamson will play a prominent role in the discussion, below, of the UFO situation.) The note said "Bland . . . Jeff is expected to be calling Dick starting November 16 in the morning . . . Jeff has a 3" reflector . . . Frank Press hopes we can come up with a 7" Questar electric . . . the 7th floor offers its appreciation to the 5th floor for such an effective and controlled reaction." Bland let me know that my guess was right: "Jeff" was Jeff Carter, son of President Carter.

At Bland's request, I telephoned Frank Press, who let me know that the President and/or his son (it was not clear which) wanted to borrow a small telescope to take to Camp David over Thanksgiving.

To NASA Headquarters, "telescope" is a budget item that the astronomers want too many of. What it is physically, and where one might be obtained, was unknown. I exaggerate, but certainly, Headquarters contained only paper; no telescopes. The request had been routed from Frosch (an oceanographer) to Hinners (a geologist) to Henry (an astronomer). Someone found out that Marshall Spaceflight Center, in Huntsville, Alabama, had a 7" Questar telescope, and that furthermore, by great luck, a NASA plane was flying from Huntsville to Washington the next day (Press was emphatic that the President wanted no special flights or other waste of taxpayer dollars). I called Jeff, and later I had my wife, Dr. Rita Mahon, meet me at National Airport with my car. We loaded the large wooden crate in the trunk, and arrived at the White House about seven p.m. on Friday, November 18, 1977.

Rita and I spent about half an hour with President and Mrs. Carter, Amy Carter, and Jeff and Annette Carter, assembling the Questar and trying it out on the upper floor balcony of the south side of the White House. The night was mostly cloudy, but the moon was visible. President Carter kept the telescope for about a week, and then Bland Norris and I retrieved it from Jeff, who said that his father had made good use of it at Camp David.

UFOs

The reader now has some understanding of the environment at NASA Headquarters at the time that Frosch's letter of July 21, 1977 (Appendix 1), was received. Action (see Appendix 1) was assigned to Code F, but I don't recall a Code F, and my August 1978 Headquarters telephone book does not include any Code F. On July 29, Herbert J. Rowe, Associate Administrator for External Affairs (Code L), sent a note, confirming a meeting to be held August 3, 1977, 3:30-4:00 p.m., "to discuss the position NASA should take in regards to Dr. Press' recommendation," to the following persons: Gen. Crow, Dr. Hinners, Mr. Chapman, Mr. Newman, a person representing Joe Allen, and Dr. Henry. Dr. Joseph P. Allen, who was Director of the Office of Legislative Affairs (Code C), is the well-known astronaut ("we deliver"). Duward L. Crow was Assistant to the Deputy Administrator, Alan M.

Lovelace. Robert A. Newman was the Director of the Public Affairs Division, located in Code L. I am not certain what Chapman's position was; possibly he was Deputy to Rowe. My memory of the meeting is of desultory conversation, including General Crow saying in a bemused manner that his daughter believed implicitly that as a former Air Force General, he knew all about UFOs and was keeping it secret from the public. I believe that the only result of the meeting was that action (jargon for responsibility) was handed to Dr. Hinnners, to formulate a recommendation to the Administrator.

After the meeting, I spoke in the hall with Hinnners, letting him know that for many years I had been Astrophysics consultant to the Aerial Phenomena Research Organization (APRO), a private UFO research group that was located in Tucson, Arizona. My motivation was partly to let Hinnners know that I had some specific relevant expertise on the subject at hand, but also to "wam" him that I was not a completely disinterested neutral party on the controversial question of UFOs.

From that point on, the only meetings on the subject that I recall attending were one or two very small (or even one-on-one) meetings in his office with David Williamson Jr. Williamson impressed me as being the most intelligent person in the building. He discoursed on UFOs to me at some length, and in an extremely knowledgeable way, and, as we shall see, he formulated for Hinnners' signature the recommendation that finally went to Frosch.

In the meantime, it had leaked out to the world that Henry might be designated the NASA project officer for UFOs (in the end, no one was). For example, on September 22, 1977, Alan C. Holt, of VISIT, Inc., wrote to me "We understand that your assignment as Project Officer is forthcoming and that the 2-3 month study will begin approximately October 1." I sent the letter up to Hinnners, with that sentence highlighted. Hinnners replied "you sure do draw 'em in, SAD. I suspect they got word of this from out there somewhere." I received a November 7, 1977 newsletter from Stanton T. Friedman which contained the item "NASA will be taking a look at the UFO question in response to a lot of pressure on the White House which in turn pressured the Science Advisor which then pushed NASA. The scientist in charge of the inquiry is Dr. Richard Henry, Department of Astrophysics at NASA Headquarters." On November 1, 1977, someone in Senator Hatfield's office telephoned NASA, and Herbert Rowe (Code L) wrote, on November 3, to Senator Hatfield, in response ". . . NASA at this time is conducting a study of the literature for approximately the last ten years to determine whether it might be worthwhile to conduct any further investigation of UFO's at this time. A project officer has been assigned to the task of reviewing the UFO literature and he is presently organizing this task . . ." Of course, by this time Frosch and Press had had an exchange of letters (Appendices 2 and 4), and Rowe surely believed that a project officer must by now have been designated. Blind copies of Rowe's letter went to two Code L files (chronological and subject) . . . and to "SA/Henry." A type-

written note was attached: "Who is the project officer? He should be informed that a number of definitive overview documents have been (sic) by investigators at the request of the Committee on the subject of UFO's and these studies would be of help to him in compiling this information." A blue mark appeared at the disjoint point in the second sentence, and in blue the first sentence was crossed out and "Info for Dr. Henry fr Code C." inserted.

In addition to a certain number of letters from "pro^w-UFO types, I had received two communications from "debunkers^w—Phil Klass sent me (October 1, 1977) a copy of his book, *UFOs Explained* (Klass, 1976) marked "To Richard Henry with the hope this may shed useful light on an old controversy—And help you and NASA avoid the fate of "Tar Baby" and the late Dr. Ed Condon!" And Robert Scheaffer wrote to me on letterhead of the Committee for the Scientific Investigation of Claims of the Paranormal, ". . . be prepared to be deluged by mail from every kook and crackpot in the country, and even worse, be prepared for letters from the 'scientific' UFO investigators, who will appear reasonable and sane enough, yet are true believers in every sense of the word . . .". I replied (October 5, 1977) "I have not yet been assigned . . . you are very kind to warn me about other people who may write to me with views that differ from your own."

Of course, at this time I was attempting to think through what NASA's response to Press should be. However, Hinnners had not asked me to do anything at all, much less prepare options or recommendations.

On October 20, 1977, I apparently saw for the first time Frosch's September 6 letter to Press (Appendix 2), and I immediately communicated my concern to Hinnners (Appendix 8). My concern was that Frosch had promised more than he could deliver. I took the opportunity to recommend that "the NASA Project Officer chosen be given the highest U.S. security clearance, and also be provided with a letter from President Carter establishing his need to know regarding unidentified aerial phenomena." I went on to say that "If this procedure in not followed, there will be a hole as big as a barn door in any NASA "specific recommendation" that is *negative* on UFO's."

On October 21, 1977, I received a telephone call from Phil Klass, mildly enquiring whether I was indeed the project officer, and whether I had had any previous association with UFOs. I answered him frankly, and subsequently I decided to put down formally on paper for Hinnners what I had previously explained to him verbally. My memo is reproduced as Appendix 9. The only part of the memo that needs clarification is item 3B; I did not literally mean "other dimensions"; this phrase is a result of having read John Keel's book, *Operation Trojan Horse* (Keel, 1970). The book impressed me as nonsense, but left me with an openness to the possibility that our present world-view is *fundamentally wrong*; it is this possibility that I intended to convey succinctly.

About this time, I must have learned of Press' concurrence on naming a project officer (Appendix 4) and I was surely expecting to either be named

project officer, or at least asked for advice as to who should be named. It appeared to me that Frosch was now committed to naming a project officer.

I expressed my thoughts as to what I would recommend be done, if I were named, in a draft memo for Hinnners to send to Frosch, but it was never typed or submitted to Hinnners for consideration, because I wasn't asked. According to the draft, Hinnners would ask Henry to ask Dr. Stephen P. Maran (of NASA's Goddard Spaceflight Center, in Greenbelt, Maryland) to be the Project Officer. Maran would spend "two months full time" assembling information on "post-Condon" UFO reports, from APRO and other "pro"-UFO organizations, and obtain comment on these reports from Klass and Schaeffer. Maran would then draft a conclusion "as to whether or not further investigation of these incidents is warranted. He will not attempt to come to a specific conclusion on any one incident; that would be the goal of a full investigation. Rather, he will examine the whole pattern of incidents and ask, and suggest an answer to, the global question, is further work indicated. In the event that he feels that the answer is yes, he will sketch the nature of such an investigation, and indicate how it might come to some definite conclusion. His report will be reviewed by Dr. Henry, myself, and David Williamson, and presented to you on January 2, 1978."

At this point, I had not spoken with Maran, but the question was moot. The request from Hinnners never came.

We now reach what, to my best information, is the critical point in NASA's efforts to deal with the UFO/White House situation. On October 31, 1977, Dave Williamson generated and distributed a draft memorandum, to be from Hinnners to the Administrator. My copy arrived in an envelope marked "EYES ONLY SA/Dr. Henry." Despite the dramatics, the document, like all documents that I read at NASA, was not classified, even so much as "Confidential."

The draft memorandum is reproduced as Appendix 10, and as far as I recollect is identical to what I finally concurred in (verbally to Hinnners) and that was sent by Hinnners to Frosch. I will not summarize Appendix 10 here, as it needs to be read in its entirety at this point.

I thought the draft masterful. I also felt that while the draft recommended Option 2, anyone reading it would instantly grab for Option 1.

There was one thing that was wrong in the memo: the claim of lack of "tangible or physical evidence." There is in fact plenty of such evidence (for what it is worth). In the event, the Administrator's final decision, clearly based on this memo, dealt directly with that defect by stating to Press (Appendix 5) "we stand ready to respond to any bona fide physical evidence from credible sources." Frosch's letter to Press in fact combines parts of each of the two options, and was drafted by Williamson (see the last line of Appendix 5).

I had mixed feelings about the situation, before and after Frosch wrote his final letter to Press. A clear anomaly in the draft memo is the recommendation that the first phases of Option 2 be run out of Headquarters, and particularly at an extraordinarily high level (Hinnners, Williamson, Chap-

man). NASA did *nothing* substantive at Headquarters itself. There is simply not sufficient manpower for Headquarters to carry out its administrative/budget/policy activity *and* projects as well (although of course Williamson's title was Assistant Administrator for "Special Projects").

This fact was rapidly brought into focus by a letter (Appendix 11) from Stanford University astrophysicist Peter A. Sturrock to Frosch, immediately following public release of Frosch's final letter to Press. Sturrock wanted to know, in effect, where to send the tangible evidence. The problem that this presented to Headquarters was nicely summarized in a memorandum by O. B. Lloyd, Jr. (Chief, Public Services Branch, Code L; Appendix 12). I received this memorandum with a copy of a "buck slip" from Bob Newman to Ken Chapman reading "Bill raises some good points here. Comments?" Chapman replied on the same form, "the original science problem was worked by Naugle/Hinners—I suggest we ask them for a position on handling any evidence. There are now two letters in suggesting or offering material evidence. Send a note to Naugle/Hinners asking how they plan to proceed." The slip is then marked "S-1 1. Hinners," and "P-1 2. Naugle," and finally scrawled on it is "Action to SC-Henry."

This finally gave me a chance to lay out my views to Hinners in some detail, and I did so in a memorandum on January 17, 1978 (Appendix 13). I thought that (a) NASA should be active, not passive, and (b) the substantive activity should take place at a NASA Center, as with any other NASA activity. I had by now spoken briefly, on one occasion, with my friend Steve Maran at Goddard, and he had not declined the role I envisaged for a Project Scientist. As my memo makes clear, I thought he would be ideal for the job.

And this is the end of the story. There was no response from Hinners to my memo. Sturrock, I understand, pursued an attempt to have NASA analyse a sample of material believed by some to be from a UFO. My file on UFOs, marked by me (for better or for worse), "The Secret NASA UFO file," contains a letter (Appendix 14) indicating that I did a little work supporting Hinners' and Williamson's handling of the follow-up, but I certainly did not do much. The final version of Information Sheet 78-1 (Appendix 15) represents to the world NASA's official position on UFOs. I had no hand in generating it. The draft of it that I have, indicates that the information on UFO groups was provided to Code L by Williamson. There is mention in 78-1 of Frosch's offer to respond to *bona fide* physical evidence, but no suggestion as to how to go about this.

I left NASA in the fall of 1978 to resume my academic position at The Johns Hopkins University.

Conclusion

Why did NASA turn down the President of the United States on UFOs? There is only fragmentary evidence, and so no definite conclusion is possible. We can, however, look at various possibilities.

a) Inhibition by Aliens

A reason that I have maintained an interest in UFOs since graduate school is that they are a perfectly possible "unscientific" element in the world. By "unscientific," I mean the following. Einstein's famous dictum, "Raffiniert ist der Herrgott, aber Boschaft ist Er Nicht,"* clearly does not apply to aliens, who might be very "Boschaft" ("malicious, spiteful, mischievous, malignant, wicked") indeed. With perhaps a billion years of biotechnology behind them, they could, if so inclined, insert agents at will into our society. You might not even be aware that you are an alien agent, if you are.

No conclusion on this possibility seems possible.

b) Inhibition by the US Government

Does the US government know all about UFOs and did a carefully placed person within NASA act to deflect/discourage any NASA investigation of UFOs?

There is some evidence, although it may well be fraudulent, of a US government "cover up" on UFOs (Moseley, 1987).

The person who "shot John" on UFOs, at NASA, surely was Dave Williamson (although he clearly had aid from others, including the author). His role in doing so was not at all hidden. On Saturday, November 26, 1977, while President Carter was using the Questar at Camp David, I was in a swimming pool in Florida. I happened to glance at a newspaper vending machine, and an eerie feeling of unreality swept over me. Staring at me was Dave Williamson, in a front-page photograph.

The notion that Williamson, or someone else at NASA, knowing that UFOs do include clear evidence for alien intelligence, deflected the inquiry to protect this government-held secret, can, I think, probably be rejected, simply because if it were true, why would the President or his science advisor have made the request in the first place? Of course, one could still imagine a "John Poindexter"-type isolation of the President, but this seems unlikely.

c) Belief by NASA That UFOs Are Nonsense

All I can say regarding this possibility is that I myself do not think that UFOs are nonsense, and no one at NASA Headquarters ever expressed such views in my presence. The general attitude seemed to me to be what I might call "repressed open mindedness."

d) Fear of Ridicule

I felt this myself, and expressed it to Hinners (Appendix 9).

NASA Headquarters scientists and administrators had no fear of the scientific community. As no man is a hero to his valet, so no Nobel Prize

* "The Lord God is subtle, but He is not malicious."

winner is a hero to his grant administrator. But the negative reputation of UFO studies clearly had its effect on NASA.

e) More Important Things To Do

I have a note, dated November 29, 1977, from "Noel" [Hinners] to "Dave" [Williamson] reading "A sampler! It's obvious that going route of Option 1 will buy us neg. kudos but let's just be prepared. An Option 1 decision based on *no* look is fraught with the difficulties we've been discussing."

The Option 1 that is mentioned is presumably that in the Williamson draft memorandum (Appendix 10).

This suggests that Hinners favored Option 1. Just as in the case of Hinners' attitude on SETI, I speculate that his fundamental motivation was a desire not to cloud his extremely effective NASA space science program with activity that might detract in some way. I felt the same way. Perhaps in this affair, having a positive attitude to UFO study, I should have taken a more aggressive stance than I did, but I was worried about having to pay for it: If you are the one who wants it, generally you are the one who pays for it, and I considered it wrong to spend astrophysics funds on UFO study, despite feeling that UFO study was a worthy use of public funds. Also, I did not feel that a Goddard project was very likely to produce a more substantial result than did Condon's Colorado project. The only real defect in the Colorado project was in the Director's inaccurate summary, not the substance of the investigation itself. If the UFO phenomenon includes an element that is due to the presence of an alien intelligence in our vicinity, it was doubtful to me that that fact could ever be established by a "Blue Book" or "Colorado" or my proposed "Goddard" and its follow-up, that is, by incremental investigation and accumulation of cases of varying degrees of credibility. Carl Sagan has said that extraordinary claims require extraordinary proof, and he is right. Extraordinary proof of the "reality" of UFOs cannot easily come from us; it must surely come from the UFOs, if it will.

Postscript

The manuscript of this paper was sent to President Carter, Frank Press, David Williamson, and Noel Hinners for comment. Williamson, responding for himself and Hinners, made clear that the NASA program of analysis of hard evidence was considerably more extensive than I had realized: "We entertained a great number of inquiries and ran a number of analyses . . . we developed a simple procedure for anyone's getting a suspect sample to NASA (with a quitclaim so we could cut, drill holes, and so on) . . . I am glad we had the courage to do the right thing for the right reason." Press responded but had no comment to make. Carter returned my letter and marked it "I don't have any comment, except below"; and below, beside my sentence "The most important point that you could clarify, if you will, is

whether you yourself were behind Frank Press' letter of July 21, 1977, to NASA," is the word "no."

Author's Note. Photo reproduction (rather than typesetting) has been used for the Appendices, in order to leave clear and apparent all of the tracking notes and approvals that are on the original documents. Some price is paid, of course, in terms of legibility.

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Appendix 1

July 21, 1977, Letter From Dr. Frank Press to Dr. Robert Frosch

EXECUTIVE OFFICE OF THE PRESIDENT
OFFICE OF SCIENCE AND TECHNOLOGY POLICY

WASHINGTON, D.C. 20500

July 21, 1977

Dear Bob:

We have discovered that the White House is becoming the focal point for an increasing number of inquiries concerning UFO's. As you know, there appears to be a national revival of interest in the matter with a younger generation becoming involved. Those of us in the Executive Office are ill-equipped to handle these kinds of inquiries.

It seems to me that the focal point for the UFO question ought to be in NASA. I recommend two things: since it has been nearly a decade since the Condon report, I believe that a small panel of inquiry could be formed to see if there are any new significant findings. Since this is a public relations problem as much as anything else, people who are known to be interested in the problem and also highly known, such as Carl Sagan, ought to be involved. This is a panel of inquiry that could be formed by NASA.

The second thing I would like to suggest is that NASA become the focal point for general correspondence and that those inquiries which come to the White House be sent to the designated desk at NASA.

Yours sincerely,

*Frank*Frank Press
Director

Robert Frosch
Administrator
National Aeronautics and
Space Administration
Washington, D.C. 20546

Action Copy to E
Info Copy to ADA, AA, AK, L
A34611

Rec'd in NASA 7-25-77Date 8-8-77

Signature of A

R. C. Henry

Appendix 2

September 6, 1977, Letter From Dr. Robert Frosch to Dr. Frank Press

by: SA/Dr. Henry

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~~2-50~~
~~3-50~~

SEP 6 1977

Honorable Frank Press
 Director
 Office of Science and Technology Policy
 Executive Office of the President
 Washington, DC 20500

Dear Frank:

In your letter of July 21 you expressed the view that NASA should be the focal point for UFO matters, and specifically recommended that a panel of inquiry be formed by NASA to see if there are any significant new findings since the Condon report and that NASA become **the focal point** for general correspondence and inquiries.

While we are inclined to agree with your recommendation, there are a number of questions which need to be resolved before any formal program is undertaken. You may know that the Air Force served **as** the focal point for UFO matters during the 1960's and devoted considerable resources to the program. It, however, concluded, in the absence of significant findings, that the program warranted no more than routine **form** letter answers to inquiries and has been handling the program in that manner since about 1970. It now handles a small number of inquiries, perhaps 10 to 12 monthly. NASA, likewise, handles routine inquiries by **form** letter response, 10 to 12 formal inquiries and a somewhat larger number of public inquiries monthly. NASA uses the information sheet attached in its responses. **The** Air Force uses similar data.

From the point of view of the Administration **as** a whole, this is economical. However, it fails to provide a recognized focal point for technical appraisal of sightings and understandably results in some frustration to individuals making what they consider to be serious inquiries.

A panel of inquiry such as you suggest might possibly discover new significant findings. It would certainly generate current

interest and could lead to the designation of NASA as the focal point for UFO matters. It would require some additional resources for the inquiry and for follow-on activity. Before committing to this, I feel that we should assure ourselves that an inquiry is justified. I believe we could do this by naming a NASA project officer to review reports of the last ten years and to provide a specific recommendation relative to any further inquiry by the end of this year. If you concur, I will initiate this action.

Very truly yours,

Original Signed By
Robert A. Frosch

Robert A. Frosch
Administrator

Enclosure

cc: AA
AC
ADA
S
F
L
W
C
AE

F/RA Newman:elt:8/18/77 A-34611
Rewritten:ADA/L:Rowe/Crow:8/25/77
Rewritten:ADA/Crow:aom:9/1/77

Appendix 3

NASA Information Sheet 76-6, "Unidentified Flying Objects"



INFORMATION SHEET

FGM 76-6

Prepared by

FGM/Office of Public Affairs
NASA Headquarters
Washington, D.C. 20546UNIDENTIFIED FLYING OBJECTS

NASA is not involved in research concerning unidentified flying objects. Reports of unidentified objects entering U.S. air space are of interest to the U.S. military as a regular part of defense surveillance, but no government agency is conducting an ongoing investigation of UFOs at this time.

An extensive study known as Project Blue Book was undertaken in the 1960's by the U.S. Air Force through a contract with the University of Colorado. Based on the findings of this study as reviewed by the National Academy of Sciences, the Air Force terminated the project December 17, 1969.

The University of Colorado report, entitled Scientific Study of Unidentified Flying Objects, was published in paperback by Bantam Books. A three-volume photoduplication (AD 680:975-6-7) may be purchased for \$18 from the National Technical Information Service, U.S. Department of Commerce, Springfield, Virginia 22151. The complete reports were transferred from Air Force storage in July 1976 to The National Archives, 8th Street and Pennsylvania Avenue, N.W., Washington, DC 20408. Those wishing to view the report must obtain a researcher's permit from the National Archives and Records Service.

The University of Colorado study reached the following conclusions: (1) there was no evidence that the subject of UFOs had been "shrouded in official **security**"; (2) UFOs did not constitute any hazard to national security; (3) two decades of UFO study had made no significant contribution to scientific knowledge; and (4) further extensive study of the general topic could not be expected to contribute meaningfully to the advancement of science.

2

The panel of the National Academy of Sciences agreed with these conclusions and further commented, "On the basis of present knowledge the least likely explanation of UFOs is the hypothesis of extraterrestrial visitations by intelligent beings."

Although the U.S. government no longer dedicates funds and personnel to the study of UFOs, investigations are continuing under private auspices. The Center for UFO Studies, P.O. Box 11, Northfield, Illinois 60093 (telephone 312/491-1870) is a source for publications and information on UFO phenomena. The National Investigating Committee on Aerial Phenomena, Suite 23, 3535 University Boulevard, Kensington, Maryland 20795 (telephone 301/949-1267) also replies to requests for general information. Both organizations investigate reported sightings of unidentified flying objects.

July 1976

NASA-HQ

R. C. Henry

Appendix 4

September 14, 1977, Letter From Dr. Frank Press to Dr. Robert Frosch

Cy: SA 35 9/20/77 SA cy

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3

EXECUTIVE OFFICE OF THE PRESIDENT
OFFICE OF SCIENCE AND TECHNOLOGY POLICY
WASHINGTON D C 20500

September 14, 1977

Dear Bob:

I have your letter of September 6 responding to my letter of July 21 recommending that NASA become a focal point for Federal activity in UFO matters.

I am pleased that you agree that NASA can handle the public inquiries on UFOs. The fact that my Office and the White House can direct such inquiries to NASA will relieve my small staff of a responsibility we are not equipped to handle. Therefore, I have asked my assistant, Stan Schneider, who has discussed this matter with your Executive Officer, Ed Andrews, to forward all our UFO inquiries to NASA.

Regarding the recommendation for NASA to become a focal point for the scientific and technical appraisal of the UFO phenomenon, I can understand your reluctance to commit the agency to a formal program before evaluating the current status and recent history of UFO activity and determining what might be involved in conducting a serious study on this matter. Therefore, I concur with your idea of assigning a project officer at NASA to review the situation before deciding whether to undertake a more formal inquiry.

By copy of this letter, I am informing Jim Purks of the White House Media Liaison Office of our exchange of ideas on this subject so that they are in the communications loop on this situation. I will suggest that he forward all public inquiries on UFOs to the White House to NASA (Code 4) for response.

I would appreciate it if NASA could keep my office, through Stan Schneider, informed of any progress the agency makes toward a decision on a possible UFO study.

Yours sincerely,

Frank Press
Frank Press
Director

Honorable Robert A. Frosch
Administrator
National Aeronautics and
Space Administration
Washington, D.C. 20546

Copy to F
Info Copy to A, AA, ADR, AS, L.S., W., C. A. Andrews
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Held in NASA 9-19-77
Reason Date NONE
Prep. Party for _____
Signature of _____
9-21-77

Appendix 5

December 21, 1977, Letter From Dr. Robert Frosch to Dr. Frank Press



December 21, 1977

Honorable Frank Press
Director
Office of Science and Technology
Policy
Executive Office of the President
Washington, DC 20500

Dear Frank:

In response to your letter of September 14, 1977, regarding NASA's possible role in UFO matters, we are fully prepared at this time to continue responding to public inquiries along the same lines as we have in the past. If some new element of hard evidence is brought to our attention, in the future, it would be entirely appropriate for a NASA laboratory to analyze and report upon an otherwise unexplained organic or inorganic sample; we stand ready to respond to any bona fide physical evidence from credible sources. We intend to leave the door clearly open for such a possibility.

We have given considerable thought to the question of what else the United States might and should do in the area of UFO research. There is an absence of tangible or physical evidence available for thorough laboratory analysis. And because of the absence of such evidence, we have not been able to devise a sound scientific procedure for investigating these phenomena. To proceed on a research task without a disciplinary framework and an exploratory technique in mind would be wasteful and probably unproductive. I do not feel that we could mount a research effort without a better starting point than we have been able to identify thus far. I would therefore propose that NASA take no steps to establish a research activity in this area or to convene a symposium on this subject.

I wish in no way to indicate that NASA has come to any conclusion about these phenomena as such: **institutionally**, we retain an open mind, a **keen** sense of scientific **curiosity**, and a willingness to **analyze** technical problems within our competence.

Very truly yours,

Robert A. Frosch
Administrator

bcc: A, AD, S-1, L-1, AX, NHS-23
LF/Waggoner, NHS/Lichty

AX-1/D.Williamson, Jr.:djs:12-20-77

Appendix 6

August 17, 1977, Letter From Dr. Richard Henry to Major Ret. Colman
S. Von Keviczky

AUG 17 1977

SA(RCH:jb)

Major Ret. Colman S. VonKevicsky, MMSE
Director of ICUFON
35-40 75 Street, Suite 4G
Jackson Heights, NY 11372

Dear Major VonKeviczky:

Dr. Ichtiaque Rasool has asked me to reply to your
letter of August 9, 1977.

NASA's Office of Space Science is indeed considering,
at the present time, whether to go ahead with a radio
search for intelligent extraterrestrial signals.

If there were clear evidence that extraterrestrials were
presently in the vicinity of the earth, we would certainly
cast our investigation in that direction instead. However,
such a clear evidence does not exist. Instead, what exists
is a baffling collection of intriguing anecdotal evidence
for mysterious phenomena, usually referred to as "UFO's."
I have personally followed the UFO phenomenon for many
years, as Astrophysics consultant to a major UFO investigation
group. I have been disappointed, as the years have gone by,
that nothing substantial has emerged from the intensive
research efforts of several very competent independent
research group. This does not mean that the phenomenon
is not real, but it does mean that extracting verifiable
information from it is a formidable problem.

The Office of Space Science is charged with exploring the space
environment of the earth, and studying the universe. We place first
priority on straightforward scientific investigations of the cosmos.
Even a radio search for intelligent signals is considered very
speculative, and I am sure the we will have our work cut out for us
in selling the concept.

I fully recognize that the possibility exists that we are
taking the wrong approach. It is a matter of management
judgement. I am personally convinced that the radio
search is a very worthwhile undertaking.

Yours sincerely,

(original very faint; re-typed May 1988)

Richard C. Henry

R. C. Henry

Appendix 7

August 9, 1977, Letter From Major Ret. Colman S. Von Keviczky to
Dr. Ichtiague Rasool

• ICUFON •

INTERCONTINENTAL U.F.O. GALACTIC SPACECRAFT - RESEARCH AND ANALYTIC NETWORK[®]

DIR OF PROJECT COLMAN VONKEVICZKY, MMSE, MEMBER OF THE AMERICAN INSTITUTE OF
AERONAUTICS AND ASTRONAUTICS (AIAA)

OFFICE OF THE
DIRECTOR OF PROJECT

HEADQUARTERS
35-40 75TH STREET, SUITE 4G
JACKSON HEIGHTS N. Y. 11372
TEL. (212) 672-7948 U. S. A.

August 9, 1977

Dr. Ichtiague Rasool, Chief Scientist
NASA Office of Space Science
Washington D.C., 20546

Dear Dr. Rasool:

It is my obligation to inform you about our memorandum addressed to the United Nations Secretary General and the member **nations' Permanent Representatives** regarding the taped messages which will be launched by the Voyager I and II sounds to contact possible extraterrestrial intelligence within the solar system and beyond.

I am sorry to express our firm belief resulted of our 25 years of military, scientific and technological research and their evidences, that the time urge the NASAs scientific community to change their views upon the project **SETI** and seek rather communication with the exploring galactic forces and their operation authorities, than wasting time and \$ billions to search ETI in the depth of the Universe.

Existence of Galactic Powers and their earthbound operation has been officially verified from the year of 1947 by the highest responsible authorities of the US national defense and security: as the Presidents and their Chiefs of Staff, Disposals for armed and retorting confrontation by the strategic defense global emergency are still in effect up to date, which should constitute also a logical explanation of the radio astronomy contact's **fiascos**, - why are we ignored by the ETI.

In deliberation, that the UFO problem is above all an international security problem, your orthodox scientists should pay serious attention that their wilfull negligence and further habitual **polem**y on the UFOs, in case of a fatal impact - which is a step from open **hostilities** - could easily lead not to a "Scientific Watergate" but to a "Nuremberg Trial". Namely the crime against the peace and humanity is qualified as a "**supreme war crime**" in the Charter of the United Nations, adopted by the General Assembly on February 14, 1946.

Your kind attention to the enclosures would be gratefully appreciated.

Yours respectfully,

Colman S. Von Keviczky
Major Ret. Colman S. VonKeviczky, MMSE
Director of ICUFON

Enclosures.

Appendix 8

October 20, 1977, Memorandum, Dr. Richard Henry to Dr. Noel Hinners

NASANational Aeronautics and
Space AdministrationWashington, D.C.
20546

OCT 20 1977

Reply to Attn of SA (RCH:abw)

MEMORANDUM

TO: S/Associate Administrator for Space Science

FROM: SAD/Deputy Director of Astrophysics Programs

SUBJECT: UFO's

I have now seen A's letter of September 6, 1977, to Frank Press, on the subject of UFO's, and I am a bit concerned on a few points. Frosch has agreed to ". . . name a NASA Project Officer to review reports of the last ten years and to provide a specific recommendation relative to any further inquiry by the end of this year." My concern is that the volume of reports for the last ten years is far beyond what even a moderately, well-staffed project at a NASA center could possibly reevaluate between now and the end of the year. For NASA to make a "specific recommendation" on the basis of what could actually be accomplished in that period of time would open NASA to a valid charge of either whitewash or idiocy (depending on which way the recommendation went).

I have a second concern. There is belief among some Americans that the government knows all about UFO's, but that it is all highly classified. I recommend that the NASA Project Officer chosen be given the highest U.S. security clearance, and also be provided with a letter from President Carter establishing his "need to know" regarding unidentified aerial phenomena. If this procedure is not followed, there will be a hole as big as a barn door in any NASA "specific recommendation" that is negative on UFO's.


Richard C. Henry

Appendix 9

October 21, 1977, Memorandum From Dr. Richard C. Henry to
Dr. Noel Hinners

NASA

National Aeronautics and
Space Administration

Washington, D C
20546

October 21, 1977

Reply to Attn of SAD(RCH:ap)

MEMORANDUM

TO: S/Associate Administrator for Space Science
FROM: SAD/Deputy Director, Astrophysics Programs
SUBJECT: My Previous Experience in the Study of UFO's

Some weeks ago I was invited to attend, with you, a meeting in Herb Rowe's office to discuss a letter that Dr. Frosch had received from Dr. Frank Press on UFO's. I did not solicit that invitation. Immediately after the meeting, I informed you verbally that I had an interest of long standing in UFO's, and that I was consultant in astrophysics to a leading "amateur" UFO organization. I explained these facts also to my immediate supervisor, Bland Norris.

Yesterday I received a call from Phil Klass of Aviation Week. He asked if I were in charge of UFO's for NASA, and I said that I had not been selected for the task, but that I might well be. He asked if I had any previous association with UFO's, and I detailed it. Klass is the author of "UFO's Explained".

I would like to make explicitly clear to you what my involvement with UFO's has been, and what my views on the subject are:

1. I have been a member of the Aerial Phenomena Research Organization (APRO) for more than ten years, and their consultant on astrophysics for perhaps eight years. APRO is run by Coral and Jim Lorenze, in Tucson, Arizona. Membership in APRO does not involve acceptance of any particular views on the nature of UFO's, but Coral and Jim most emphatically believe that visitors from other worlds are involved!

- 2 -

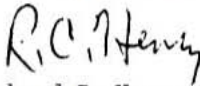
As astrophysics consultant, I have performed one task for APRO. I analyzed a supposed "star map" that had been received by radio in some mysterious way. I showed that the "map" was not a map of the region of sky claimed. This was published in the APRO bulletin.

On another occasion, I became suspicious of a sighting reported in the APRO bulletin and showed that the sighting was almost certainly Venus. I wrote to Coral and she published my finding.

2. For the past several years, I have been a member of Alan Hynek's "invisible college" - qualified scientists who feel that the UFO phenomenon deserves attention. Hynek himself is the former Air Force consultant on UFO's. He was a great scoffer, but in recent years he has come to take UFO's very seriously. I have performed no tasks for Alan.
3. My views on UFO's are:
 - A. The UFO-report phenomenon exists, is widespread, and is of great interest to a large segment of the American people.
 - B. I see no à priori reason why some of the UFO reports could not be due to sightings of visitors from other worlds or other dimensions.
 - C. I see no overwhelming indication that any UFO report is due to "extraterrestrials".
 - D. I confess to occasionally feeling, about UFO's, like the small boy who on Christmas morning found only a pile of horse manure under the tree. Undeterred, he cheerfully dug away, reasoning that there had to be a pony somewhere!
 - E. I feel that the Condon investigation did not adequately deal with the UFO phenomenon, and that further government investigation is warranted.
4. In previous "impartial" investigations it has been deemed essential to have, as a leader, a person who has had no significant previous interest or experience in UFO's. The result, in my view, has been

very unsatisfactory: total immersion in UFO's rapidly produces in such people a polarization of opinion one way or the other that compromises the integrity of the investigation. Despite this, the alternative is perhaps even more unsatisfactory.

5. My view 3E above indicates that I already have an opinion on the particular subject that NASA has been asked to investigate.
6. UFO's are (as Phil Klass indicates, in a note to me in the copy of his book, which he kindly sent me) a "tar baby". A scientist who touches the tar baby once, as I have, runs the risk of getting deeper and deeper in goo. I don't have a strong stomach for it, and would prefer to avoid it. But, I also want to make ~~sure that NASA itself~~ does not get badly tarred.



Richard C. Henry

Appendix 10

October 31, 1977, Draft Memorandum (by D. Williamson) From Dr. Noel Hinners to Dr. Robert Frosch

D R A E ' T
X:DWilliamson, Jr.
10-31-77

MEMORANDUM

TO: A/Administrator
FROM: S/Associate Administrator for Space Science
SUBJECT: UFO Study Considerations

Following the recent exchange of correspondence with Frank Press, I have been giving the UFO matter some thought, especially the question of what NASA could reasonably do in both the short and long term.

The environment since the 1969 Condon report seems to have changed:

- o There is a widespread interest in UFO's (and in related paranormal phenomena) that cannot be dismissed lightly as involving only a fringe of the population; probably 50% of the United States believes that "something" in the way of persistent phenomena exists or has existed.
- o The UN is currently considering a resolution to establish a specialized agency for UFO matters.
- o In France, the CNES has been formally charged with setting up a UFO study activity under Claude Poher.
- o There are many apparently viable private organizations in the United States with responsible memberships that are following the UFO phenomena from several different view points.
- o There seems to have been an increase in reports of the "near encounter" type (Pascagoula, Miss., 1973; Prospect, Ky., 1977) over the last few years.
- o There is a general feeling among the UFO organizations at least that the United States Government "knows" far more than it has released, and may even have pieces of UFO hardware in hand.

Open-mindedness about UFO and paranormal phenomena seems to be becoming more "respectable" in the general public. Books and articles flourish. The IEEE is often a forum for matters that would have been rejected out of hand ten years ago. Classified and unclassified research supported by Federal agencies has brushed the UFO community (proponents of "remote viewing" often cross-couple with UFO proponents). At the same time, there are vocal "debunking" groups active on the other side of the issue; the matter seems rather polarized in modern society.

There are two major problems involved in considering any review of the UFO phenomenon by NASA: first, an apparent lack of any tangible or physical evidence available for laboratory analysis; second, the absence of any sound scientific protocol for investigating the phenomenon first-hand. There is a plethora of secondary source material -- human observation and reports thereon -- but hearsay is difficult to deal with scientifically. There are, of course, other problems as well: the probability of hoaxes, the tendency for any investigator to pre-judge, the delicate interface of the Government with any private individual reporting an incident, and the danger of projecting an inaccurate NASA or Administration image. All in all, undertaking a formal study at this time appears fraught with perils.

It appears that NASA has two immediate choices, each with its follow-on implications:

1. We could, on the basis of the situation outlined above and without taking further action, recommend to OSIP that we see no responsible way at this time for the Federal government, and especially NASA, to investigate the UFO phenomenon.
 - a. This approach might encourage the vocal pro-UFO groups to continue their charges of cover-up and bureaucratic blindness.
 - b. It might avoid fomenting controversy and division within the science community NASA deals with.

- c. It would require no change in our current PIO responses to the public.
 - d. It would divert no resources from those **higher** priority applications, science, and technology activities which are our legislated charges.
 - e. It would also be begging the question.
2. We could make a formal request, from my office or Ken Chapman's, to the largest and best-known of the UFO organizations (APRO, NICAP, MUFON, CUFOS, etc.) requesting them to submit their "**best**" cases to aid us in determining the Government's possible role. We could then compile this material into a usable format, do some first-order checks (probably involving some interviews and data-gathering), and, before drawing our **own** conclusions, ask for a "pees review"-- possibly by the Smithsonian Institution. NASA would then make its own assessment as to whether further research were warranted or not, and if so, in what direction it should proceed. As a **minimum**, having gone this far and this publicly, NASA should stand ready to investigate new hard evidence that might come in -- this could logically be an added assignment for ARC and MSFC, depending on the physical or biological character of the evidence.
- a. This approach commits NASA and the Administration publicly to at least some review of the phenomenon; an eventual negative decision will not satisfy the enthusiasts and a positive one will enrage the non-enthusiasts.
 - b. It will encourage a great deal of correspondence on both sides of the question; it may lead to a rash of sightings, hoaxes, and/or public excitement.
 - c. It will place severe demands on the few NASA people involved in the first phase: there will be problems of workload, peer pressure, and **pre-judgment**.

- d. If any follow-through becomes necessary, the resources needed could be quite large -- travel, tests, interviews, and reports.

I recommend that: we proceed with the first phases of Option 2, under a Headquarters team of myself, Chapman, and Williamson; that we take time to tap the private organizations properly and not establish an arbitrary deadline; and that we consider further actions early next year.

Noel W. Hanners

Appendix 11

December 30, 1977, Letter From Dr. Peter Sturrock to Dr. Noel Hinners

INSTITUTE FOR PLASMA RESEARCH
 STANFORD UNIVERSITY
 VIA CRESPI, STANFORD, CALIFORNIA 94305



December 30, 1977

Dr. Robert A. Frosch
 Administrator
 National Aeronautics and Space
 Administration
 Washington, D.C. 20546

Dear Dr. Frosch:

Thank you for your kind letter dated December 22. I have subsequently learned from news articles that you have decided that NASA should not undertake an investigation of the UFO problem. I understand from your letter that a key reason for this decision is the difficulty of conducting a scientific investigation "where the criteria of reproducible or recurrent observations are not available."

The news reports have quoted you as stating that "if some new element of hard evidence is brought to our attention in the future, it would be entirely appropriate for a NASA laboratory to analyze and report upon an otherwise unexplained organic or inorganic sample." As I mentioned in my letter dated December 2, my colleagues and I in the Study Group on Anomalous Phenomena have obtained access to some physical evidence such as films, material samples, etc. The cooperation of NASA laboratories would be most helpful in obtaining meaningful assessments of these items of evidence.

For this reason, I would greatly appreciate your advising me whether, in line with your quoted statement, I may seek photographic, chemical and metallurgical analyses of such samples from NASA laboratories.

Sincerely yours,

P.A. Sturrock
 Professor of Space Science
 and Astrophysics

PAS/gc

Info Copy to LF
 Info Copy to A, ADB, AX, L
 A1460
 Add to NASA 28-01-03
 28-01-17
 A

R. C. Henry

Appendix 12

January 6, 1978, Memorandum From O. B. Lloyd, Jr., to LF-6/Director
of Public Affairs



National Aeronautics and
Space Administration

Washington, D C
20546

Reply to Attn of LFF-3

MEMORANDUM

TO: LF-6/Director of Public Affairs

FROM: LFF-3/Chief, Public Services Branch

SUBJECT: Procedure for Receiving Alleged UFO-related "Physical Evidence"
for Analysis by NASA

The attached letter from Professor P. A. Sturrock seeking NASA analysis of certain physical evidence concerning anomalous phenomena is probably a prelude to similar communications. Should it be the only such letter, NASA still needs a procedure for receiving, documenting, processing and safeguarding the materials.

It **would** seem appropriate that before any such material would be received by NASA the sender be required to advise NASA of certain specifics, such as:

- o the nature of the evidence
- o is this all of the evidence or is this a portion of a larger amount known to exist?
- o what is the size, weight of the materials?
- o liability - will the government be expected to return the materials in the precise condition they are received?
- o what about loss through testing, evaporation or other processes?
- o if accepted by the government, would NASA be expected to provide security (such as is now required for lunar samples)?

In the interest of security and documentation it would appear that one point should be designated to receive all evidence. Further, a person with technical expertise should be responsible for:

*Ken Chapman -
Bill raised some
good points here.
Comments?
Bob Neumann
1/9*

January 6, 1978

2.

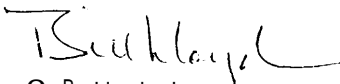
- o application of policies and procedures, as established by NASA headquarters, in processing evidence at NASA centers
- o selection of the appropriate testing facility or facilities
- o transportation of the evidence from the receiving point to the appropriate NASA facility
- o compiling and forwarding of findings resulting from the analysis
- o return to the sender, or such other disposition as may be determined, of the evidence.

Since the letter to Dr. Pess from the Administrator invites submission of bona fide physical UFO evidence, NASA would appear obligated to proceed toward ultimate acceptance of the materials offered by Dr. Sturrock. I would propose he be sent an interim letter outlining the preparatory actions noted above, assure him of the agency's interest in his offer and request such detailed information as noted above.

Meantime, I would suggest bringing together to agree on a procedure representation embracing all aspects of the activity, including scientific, legal, security and Public Affairs. In expectation that there may be submissions from foreign as well as domestic sources, representation should probably be included from International Affairs.

Finally, NASA liaison with other branches of the government should be kept apprised in event there is a development of importance.

If you concur in this general approach, I will prepare an interim response to Professor Sturrock.



O. B. Lloyd, Jr.

Att.

R. C. Henry

Appendix 13

January 17, 1978, Memorandum From Dr. Richard Henry to
Dr. Noel Hinners



JAN 17 1978

SC(RCH:jb)

MEMORANDUM

TO: S-1/Associate Administrator for Space Science
FROM: SC-7/Deputy Director of Astrophysics Division
SUBJECT: UFO Matters

I write this memo in response to your request, of 17 January 1978, that I provide you with a suggested response to Bob Newman's request for suggestions on how to deal with the issues raised by Peter Sturrock's letter on UFO "hard evidence."

Let me move back a few steps and review the whole NASA UFO situation.

Some time ago I gave you by telephone my concurrence on the draft memo that Dave Williamson provided you to use in advising the Administrator concerning a response to Frank Press' request. I have just re-read that draft, and I still think that it is a fine memo. There is only one point in it that I would now (too late!) question, and that is the statement that there is an "absence of any sound scientific protocol for investigating the (UFO) phenomenon first hand." The National Academy of Sciences endorsed the Condon study of UFO's, and specifically endorsed their procedures (protocol). It hardly does for us to say that no sound protocol is possible! I do agree with Dave that a protocol is extraordinarily difficult. The point is, that to be meaningful the protocol must cover the possibility that the UFO phenomenon is due in part to intelligences far beyond our own. I very much doubt that an intellectually inferior species can study an intellectually far superior species if the superior species chooses not to be studied. They could run rings around us:

Be that as it may, the memo offered to Dr. Frosch two suggested options: 1) Try to duck out of it completely, or 2) Do a study. Your recommendation to Dr. Frosch was to follow option two some ways, and review matters early in 1978.

2

Dr. Frosch's letter of 21 December 1977 to Frank Press indicates that he chose, in my judgement, the worst features of each of the two options. We turned-down Frank Press before the world; we dismissed UFO's without a study (feature "e" of Option 1); yet!...We started (it seems) a NASA UFO "Hard Evidence" Analysis Program ("UFOHEAP"). Furthermore, UFOHEAP is not a program intellectually directed and given coherence by NASA officials, scientists, and technologists, but rather is a "reaction" program, controlled in key respects by whoever in the world chooses to submit what they consider "hard evidence" to NASA.

What to do?

I suggest that there are three options that are sustainable:

Option 1. Consistent Follow-through. Bill Lloyd's 6 January 1973 memo to Bob Newman covers this option very well--including many things I would not have thought of. The activity should be run out of one Center--a focal point--although the actual analysis would be done at various centers, depending on the type of analysis needed. At the chosen Center there should be one key person in charge of the operation, and he/she must be scientifically/technically sound and politically astute.

In favor of this options

Consistency

Against this option:

It places NASA in an intolerable position. We have no UFO program and no position on UFO's as such, yet we are the Pope of UFO Evidence. Ravening hordes of bunkers and debunkers will attack every NASA "pronouncement from the chair."

Option 2. Dodge. Interpret "hard evidence" so strictly that no activity results. This would return us, at some additional cost in credibility, to the joys of Dave's original Option 1.

In favor of this option:

All the virtues of the original Option 1.

Against this option:

In addition to the defects of the original Option 1, we violate the apparent spirit of Dr. Frosch's 21 December 1977 letter to Frank Press.

3

Option 3. Bull-by-the-Horns.

Pretend NASA is simply following through on the 21 December letter, but actually mount a modest active (rather than passive) activity. Have NASA run UFO's, not UFO's run NASA. This would be, in effect, deciding to follow the Option 2 that you originally offered to Bob.

In favor of this option:

It faces up to a real national concern, and furthermore it does so in a much more low-key way than if NASA had directly proceeded with the original Option 2.

Against this option:

All the defects of the original Option 2. Also, there is the danger of it appearing that NASA is conducting a "secret" UFO study.

Recommendation

I recommend Option 3. My feeling is that NASA is now stuck to the tar-baby, so let0 deal with it properly.

If Option 3 is chosen, there are certain key decisions to be made. My recommendations on these follow. The activity should be run by the Office of Space Science. Additional resources should be provided to you to cover this activity (of course:). Management of the activity should be assigned to the Astrophysics Division, and a Program Scientist/Manager (Frank Martin) should be assigned. The activity should be based at a single Center (GSFC), although of course technical resources of many Centers would be used. A Project Scientist should be appointed. My strong recommendation is that this should be Dr. Stephen Maran of GSFC. He is a skeptic on UFO's; he is extremely sharp and energetic; and he is politically acute.

Dr. Maran should be instructed to take a low-key but positive approach to the UFO problem. He should approach the reputable independent UFO groups (APRO, CUFOS, NICAP, MUFON) and make NASA's technical expertise directly available to them. In addition to this, he should work toward the definition of a coherent larger-scale active UFO program that would deal with the continuing phenomenon in a coherent and intellectually sophisticated manner — this has never been done (to my knowledge!).

Changes would be necessary in the draft PIO UFO material that exists.

4

The Administrator may prefer to choose Option 2 (Dodge!). I wouldn't blame him for this, but if he docs, he should do it solidly and consistently. We should not be mushy on UFO's.

Dr. Richard C. Henry

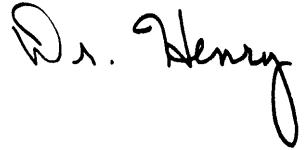
Richard C. Henry

SC/RCHenry:jb:53665:1/17/78

R. C. Henry

Appendix 14

January 31, 1978, Draft Letter (by Henry) From Dr. Noel Hinners to
Dr. Harley Rutledge



D R A F T
RCH: jb
1/31/78

Dr. Harley D. Rutledge
Chairman, Physics Dept.
Southeast Missouri State University
Cape Girardeau, MO 63701

Dear Dr. Rutledge:

I am replying to your letter of January 5, 1978,
concerning the possibility of NASA support for
your work on UFO's.

You have indicated that you are aware of NASA's
position on UFO's. In his letter of December 21, 1977,
to the President's Science Advisor, Dr. Frosch stated
that with regard to UFO's, NASA "retains an open mind,
a keen sense of scientific curiosity, and a willingness
to analyze technical problems within our competence."
He also indicated that NASA does not feel that a research
effort could be mounted without "a better starting point than
we have been able to identify thus far." Because of this,
NASA is taking no steps to establish a research activity in
this area.. We do "stand ready to respond to any bona fide
physical evidence from credible sources."

I gather from the newspaper account which you enclose
that you have not yet acquired examples of the type of

2

"physical evidence" which Dr, Frosch referenced. Thus, I am not in a position to encourage you to submit a proposal.

If you have substantial "non-physical" evidence on specific sightings or encounters, I do suggest that you provide details to Allen Hynsek (P. O. Box 11, Northfield, Illinois 60093, Phone 312/491-1870). He has just started a compilation of case reports for the Government of France.

Sincerely,

David Williamson, Jr.
Assistant for Special Projects

SC _____
Henry

SC _____
Norris

SD _____
Stofan

Original Signed by
Noel W. Hinners FEB 9 1978
Hinners

SCH/RCHenry:jb:53665:1/31/78

Appendix 15

NASA Information Sheet 78-1, "Unidentified Flying Objects"



INFORMATION SHEET

Number 78-1

Prepared by:

LFF-3/Public Services Branch
Office of External Relations
NASA Headquarters
Washington, DC 20546

UNIDENTIFIED FLYING OBJECTS

The information contained here has been compiled to respond to queries on Unidentified Flying Objects directed to the White House as well as NASA.

NASA is the focal point for answering public inquiries to the White House relating to UFOs. NASA is not engaged in a research program involving these phenomena, nor is any other government agency.

BACKGROUND

In July of 1977, Dr. Frank Press, Director of Science and Technology Policy, Executive Office of the President, wrote to Dr. Robert A. Frosch, the NASA Administrator, suggesting NASA should answer all UFO-related mail and also to consider whether NASA should conduct an active research program on UFOs. In a letter dated December 21, 1977, Dr. Frosch agreed that NASA will continue to respond to UFO-related mail as it has in the past and, if a new element of hard evidence that UFOs exist is brought to NASA's attention from a credible source, NASA will analyze the unexplained organic or inorganic sample and report its findings.

Quoting from Dr. **Frosch's** December 21 letter: "...If some new **element** of hard evidence is brought to our attention in the future, it would be entirely appropriate for a NASA laboratory to analyze and report upon an otherwise unexplained organic or inorganic sample; we stand ready to respond to any bona fide physical evidence **from** credible sources. We intend to leave the door clearly open for such a possibility.

"We have given considerable thought to the question of what else the United States might and should do in the area of UFO research. There is an absence of tangible or physical evidence available for thorough laboratory analysis. And, because of the absence of such evidence, we **have** not been able to devise a sound scientific procedure for investigating these phenomena. To proceed on a research task without a sound disciplinary framework and an exploratory technique in mind would be wasteful and probably unproductive.

"I do not **feel** that we could mount a research effort without a better starting point than we have been **able** to identify thus far. I would therefore **propose** that NASA take no steps to establish research in this area or to convene a symposium on **this subject**.

"I wish in no way to indicate that NASA has come to any conclusion about these phenomena as such; institutionally, we retain an open mind, a keen sense of scientific curiosity and a willingness to analyze technical problems within our competence."

Reports of unidentified objects entering United States air space are of interest to the military as a regular part of defense surveillance. Beyond that, the U.S. Air Force no longer investigates reports of UFO sightings.

This was not always the case. On December 17, 1969, the Secretary of the Air Force announced the termination of Project Blue Book, the Air Force program for UFO investigation started in 1947.

The decision to discontinue UFO investigations, the USAF said, was based on: (1) an evaluation of a report (often called the Condon Report) prepared by the University of Colorado and entitled "Scientific Study of Unidentified Flying Objects;" (2) a review of the University of Colorado report by the National Academy of Sciences; (3) past UFO studies; and (4) Air Force experience investigating UFO reports for two decades.

As a result of these investigations and studies, and experience gained from investigating UFO reports since 1948, the conclusions of the Air Force were: (1) no UFO reported, investigated, and evaluated by the Air Force has ever given any indication of threat to our national security; (2) there has been no evidence submitted to or discovered by the Air Force that sightings categorized as "unidentified" represent technological developments or principles beyond the range of present day scientific knowledge; and (3) there has been no evidence indicating that sightings categorized as "unidentified" are extraterrestrial vehicles.

With the termination of Project Blue Book, the Air Force regulation establishing and controlling the program for investigating and analyzing UFOs was rescinded. All documentation regarding the former Blue Book investigation has been permanently transferred to the Modern Military Branch, National Archives and Records Service, 8th Street and Pennsylvania Avenue, N.W., Washington, DC 20408, and is available for public review and analysis. Those wishing to review this material may obtain a researcher's permit from the National Archives and Record Service.

Also available:

Scientific Study of Unidentified Flying Objects. Condon Report study conducted by the University of Colorado under contract F44620-76-C-0035. Three volumes, 1,465p. 68 plates. Photoduplicated hard copies of the official report may be ordered for \$6 per volume, \$18 the set of three, as AD 680:975, AD 680:976, and AD 680:977, from the National Technical Information Service, U.S. Department of Commerce, Springfield, VA 22151.

Review of University of Colorado Report on Unidentified Flying Objects. Review of report by a panel of the National Academy of Sciences. National Academy of Sciences, 1969, 8p. Photoduplicated hard copies may be ordered for \$3 as AD 688:541 from the National Technical Information Service, U.S. Department of Commerce, Springfield, VA 22151.

NASA is aware of the many UFO reports made in recent years. However, the majority of inquiries to NASA concerning UFO sightings address themselves to the reported sightings by astronauts during Earth orbital and lunar missions and the report by President Carter while serving as Governor of Georgia.

From: [Kopparapu, Ravi Kumar \(GSFC-6990\)](#)
To: [Shekhtman, Lonnie \(GSFC-690.0\)\[ADNET SYSTEMS INC\]](#)
Subject: Re: Letter to Senator Rubio on UAP
Date: Monday, August 24, 2020 12:07:30 PM

I am not hopeful if it will go anywhere, but just raising awareness that scientists are interested is worth doing. I am thinking what other strategies can be pursued to get the data out. Too much speculation, and too little data.

Ravi kumar Kopparapu
8800 Greenbelt Road
NASA Goddard Space Flight Center
Mail Code 690, Building 34
Greenbelt, MD 20771
email: ravikumar.kopparapu@nasa.gov

Ph: (b) (6)

From: "Shekhtman, Lonnie (GSFC-690.0)[ADNET SYSTEMS INC]"
<lonnie.shekhtman@nasa.gov>
Date: Monday, August 24, 2020 at 10:33 AM
To: "Kopparapu, Ravi Kumar (GSFC-6990)" <ravikumar.kopparapu@nasa.gov>
Subject: Re: Letter to Senator Rubio on UAP

Very cool. Can't wait to see where this goes ...

Lonnie

--

Lonnie Shekhtman
Senior Science Writer
Solar System Exploration
NASA's Goddard Space Flight Center
301-614-6833

From: "Kopparapu, Ravi Kumar (GSFC-6990)" <ravikumar.kopparapu@nasa.gov>
Date: Wednesday, August 19, 2020 at 8:14 AM
To: "Mahaffy, Paul R. (GSFC-6900)" <paul.r.mahaffy@nasa.gov>
Cc: "Getty, Stephanie A. (GSFC-6900)" <stephanie.a.getty@nasa.gov>, "Malespin, Charles A. (GSFC-6990)" <Charles.A.Malespin@nasa.gov>, "Guzewich, Scott D. (GSFC-6990)" <scott.d.guzewich@nasa.gov>, "Domagal-goldman, Shawn D. (GSFC-6930)" <shawn.goldman@nasa.gov>, "Shekhtman, Lonnie (GSFC-690.0)[ADNET SYSTEMS INC]"

<lonnie.shekhtman@nasa.gov>

Subject: Letter to Senator Rubio on UAP

Hi Paul, Stephanie, Charles and Scott,

I am attaching a letter draft that I am leading with interested academics at U.S institutions who are planning to write to Senator Marco Rubio, requesting for data access on UAP (Unidentified Aerial Phenomena). Senator Rubio [has been working within the Senate Intelligence Committee](#) on a [bill](#) to compile a public analysis of UAP in its annual authorization bill. The letter is requesting (1) to provide data to traditional academics at U.S institutions on UAP that does not interfere with national security (2) any encouraging statements from government officials to conduct scientific investigations of UAP from traditionally trained academics at U.S institutions, so that the taboo is minimized and more of us can participate in thorough and community coordinated UAP investigations providing them legitimacy to this topic.

I am sending it to you to see if you approve of me signing this letter. Any language suggestions you may have are also highly appreciated.

Thank you

Ravi

(P.S: I wouldn't waste whatever time I have, on this topic if I didn't think this is a good science problem)

Ravi kumar Kopparapu
8800 Greenbelt Road
NASA Goddard Space Flight Center
Mail Code 690, Building 34
Greenbelt, MD 20771
email: ravikumar.kopparapu@nasa.gov

Ph: (b) (6)

To
Hon. Sen. Marco Rubio

We are scientists with decades of research experience in different disciplines at various academic and governmental institutions including NASA, University at Albany (SUNY), and Blue Marble Space Institute of Science. We are writing to you regarding the availability of recorded data on the recently reported Navy UAP (Unidentified Aerial Phenomena), and to request your support in providing access to any UAP data (current or prior) to the scientific community as long as this would not compromise our national security interests.

We would like to first thank you for your leadership and efforts for including language about UAP in the draft bill of Intelligence Authorization Act for fiscal year 2021. This is a great first step in bringing UAP into the scientific purview, and not relegate it to undeserved taboo that is prevalent within the science community and some in the general public. To avoid any premature conclusions, we as scientists insist on strict agnosticism about the nature of UAP and suggest an approach that is purely rational: UAP represents observations that are puzzling and waiting to be explained. Just like any other science discovery.

UAP are a worldwide occurrence, and several other countries have studied them. There is a lot of speculation around them in both academic and non-academic circles. Much of this speculation tends to misidentify known phenomena as UAP, while others will outright dismiss all UAP by assuming that every such phenomena must be explainable. The primary reason for all this confusion is due to lack of a rigorous scientific analysis.

Our proposal to scientifically study UAP phenomena is not new. Scholars such as Dr. Carl Sagan, Dr. J. Allen Hynek, Dr. James McDonald, Dr. Robert Hall and Dr. Robert Baker were involved in research during the 1960s to understand the nature of UAP. A systematic investigation is essential in order to bring the phenomena into mainstream science. For this to happen, collection of hard data is paramount to establishing any credibility to provide an explanation of the phenomena.

We sincerely (1) request you to help us in declassifying any data related to UAP, such as imagery, videos, electromagnetic spectra so that we scientists can analyze and study the phenomena. (2) we would greatly appreciate any encouraging statements from government officials to conduct scientific investigations of UAP from traditionally trained academics at U.S institutions, so that the taboo is minimized and more of us can participate in thorough and community coordinated UAP investigations providing them legitimacy to this topic. There is a crucial advantage when multiple scientists with expertise in multiple disciplines work on the same problem, so that unique perspectives can help understand the nature of the data involved. We would be happy to discuss in person (or virtually) and outline the kind of data we are requesting.

Sincerely

Ravi Kopparapu (Planetary Scientist, NASA Goddard Space Flight Center)

Jacob Haqq-Misra (Research Scientist, Blue Marble Space Institute of Science)

Matthew Szydagis (Associate Professor, UAlbany SUNY Dept. of Physics)

Kevin H. Knuth (Associate Professor of Physics, UAlbany SUNY Dept. of Physics)

From: [Maureen Meehan](#)
To: [Kopparapu, Ravi Kumar \(GSFC-6990\)](#)
Subject: Re: [EXTERNAL] Radio show seeking interview
Date: Tuesday, September 8, 2020 10:48:17 AM

Excellent! You're on!
Will be in touch in a little bit.

On Tue, Sep 8, 2020 at 10:45 AM Kopparapu, Ravi Kumar (GSFC-6990) <ravikumar.kopparapu@nasa.gov> wrote:

Yes! 11AM this Thursday is good.

Ravi kumar Kopparapu
8800 Greenbelt Road
NASA Goddard Space Flight Center
Mail Code 690, Building 34
Greenbelt, MD 20771
email: ravikumar.kopparapu@nasa.gov

Ph: (b) (6)

From: Maureen Meehan (b) (6)
Date: Tuesday, September 8, 2020 at 10:29 AM
To: "Kopparapu, Ravi Kumar (GSFC-6990)" <ravikumar.kopparapu@nasa.gov>
Subject: Re: [EXTERNAL] Radio show seeking interview

Is 11 am this coming Thursday, Sept 10 okay for you?

On Tue, Sep 8, 2020 at 10:16 AM Maureen Meehan (b) (6) wrote:

Fab, I am checking with the engineer's calendar and will get back to you momentarily.

On Tue, Sep 8, 2020 at 10:04 AM Kopparapu, Ravi Kumar (GSFC-6990)
<ravikumar.kopparapu@nasa.gov> wrote:

Great! I am free on Thursday 10am-1pm U.S Eastern time, and essentially all day Friday.

Ravi

Ravi kumar Kopparapu
8800 Greenbelt Road
NASA Goddard Space Flight Center
Mail Code 690, Building 34
Greenbelt, MD 20771
email: ravikumar.kopparapu@nasa.gov

Ph: (b) (6)

From: Maureen Meehan (b) (6)
Date: Tuesday, September 8, 2020 at 9:56 AM
To: "Kopparapu, Ravi Kumar (GSFC-6990)" <ravikumar.kopparapu@nasa.gov>
Subject: Re: [EXTERNAL] Radio show seeking interview

Later on this week would be fabulous, if that fits into your schedule.

The show is a bit under a half hour and is basically question and answer.

Thank you!

On Tue, Sep 8, 2020 at 9:41 AM Kopparapu, Ravi Kumar (GSFC-6990)

<ravikumar.kopparapu@nasa.gov> wrote:

Thank you for your email. Yes, I would be happy to talk about the topics that you mentioned. Please let me know when you would like to talk.

Best

Ravi

Ravi kumar Kopparapu

8800 Greenbelt Road

NASA Goddard Space Flight Center

Mail Code 690, Building 34

Greenbelt, MD 20771

email: ravikumar.kopparapu@nasa.gov

Ph: (b) (6)

From: Maureen Meehan (b) (6)

Date: Tuesday, September 8, 2020 at 9:08 AM

To: "Kopparapu, Ravi Kumar (GSFC-6990)" <ravikumar.kopparapu@nasa.gov>

Subject: [EXTERNAL] Radio show seeking interview

Hello Dr. Kopparapu,

My name is Maureen Meehan and I work as the producer for a radio podcast called [High Society with Paxton Quigley](#).

We are wondering if you might be available to do an interview about your work, especially in the area of researching conditions necessary for other planets to sustain surface water as well as unidentified aerial phenomena.

Thanks very much for your time. I will be glad to send you more about our show if you'd like.

All the best,

Maureen Meehan

Producer, High Society with Paxton Quigley

From: [Maureen Meehan](#)
To: [Kopparapu, Ravi Kumar \(GSFC-6990\)](#)
Subject: Re: [EXTERNAL] Re: This Thursday 11 am?
Date: Thursday, September 10, 2020 10:46:51 AM

Great!

On Thu, Sep 10, 2020 at 10:39 AM Kopparapu, Ravi Kumar (GSFC-6990) <ravikumar.kopparapu@nasa.gov> wrote:

Thank you, yes, sure. See you at 11am. You can just call me Dr. Ravi, if it makes easier.

Ravi

Ravi kumar Kopparapu
8800 Greenbelt Road
NASA Goddard Space Flight Center
Mail Code 690, Building 34
Greenbelt, MD 20771
email: ravikumar.kopparapu@nasa.gov

Ph: (b) (6)

From: Maureen Meehan (b) (6)
Date: Thursday, September 10, 2020 at 10:35 AM
To: "Kopparapu, Ravi Kumar (GSFC-6990)" <ravikumar.kopparapu@nasa.gov>
Subject: [EXTERNAL] Re: This Thursday 11 am?

Hello Dr. Ravi,

Looking forward to "meeting" you on Zoom in a half hour!

You will be on with Paxton, the engineer Brasco and me. But when the interview with Paxton starts, I will mute myself.

Paxton will need to know exactly how to pronounce your name and if she should call, after the initial introduction, Dr. Ravi Kumar or Dr. Kopparapu or whatever you prefer.

All the best,

Maureen

On Tue, Sep 8, 2020 at 10:20 AM Maureen Meehan (b) (6) wrote:

Duplicate email chain - already processed

Deletion Page

Requester: John Greenewald

Request #: 21-HQ-F-00603

3 page(s) containing duplicate information
is/are held in the file.

From: [Swenson, Christina \(GSFC-699.0\)\[ASRC FEDERAL SYSTEM SOLUTIONS\]](#)
To: [Kopparapu, Ravi Kumar \(GSFC-6990\)](#)
Subject: RE: Highlights
Date: Friday, September 11, 2020 3:57:17 PM

Hi Ravi,

This is very cool!! I will add them to the highlights next week.

Have a great weekend.

Best regards,
Christina

Christina Swenson

Project Support Specialist, PAAC V

Solar System Exploration Division

W: 301-614-6983 | C: (b) (6)

NASA GSFC, Bldg. 33, Room C211

ASRC Federal System Solutions | *Customer-Focused. Operationally Excellent.*

From: Kopparapu, Ravi Kumar (GSFC-6990) <ravikumar.kopparapu@nasa.gov>
Sent: Thursday, September 10, 2020 2:20 PM
To: Swenson, Christina (GSFC-699.0)[ASRC FEDERAL SYSTEM SOLUTIONS]
<christina.swenson@nasa.gov>
Cc: Malespin, Charles A. (GSFC-6990) <Charles.A.Malespin@nasa.gov>; Guzewich, Scott D. (GSFC-6990) <scott.d.guzewich@nasa.gov>
Subject: Highlights

Hi Christina,

I don't know how useful are these for highlights, but I almost forgot that I was interviewed by reporters from Scientific American, Wallstreet Journal and a radio show (today) about exoplanets and UAPs. I don't have subscription to Wallstreet journal, so I don't know what they said or took from my interview. The radio show will send a link later or maybe not.

<https://www.scientificamerican.com/article/want-to-talk-to-aliens-try-changing-the-technological-channel-beyond-radio/>

<https://www.wsj.com/articles/ufo-spotting-has-replaced-bird-watching-as-pandemic-obsession-11598986541>

Thanks
Ravi

Ravi kumar Kopparapu
8800 Greenbelt Road
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Mail Code 690, Building 34
Greenbelt, MD 20771
email: ravikumar.kopparapu@nasa.gov

Ph: (b) (6)

From: [REDACTED] [FC-6990](#)
To: (b) (6)
Subject: Re: [EXTERNAL] Leonard David Media INquiry: UAPs and FLIR technology
Date: Monday, September 21, 2020 2:06:14 PM
Attachments: [LettertoSenRubio.pdf](#)

Hi Leonard,

I am attaching the letter with this email. I had to get permission to share from the other co-signees, hence the delay. We have to still send it to Senator Rubio.

Thanks

Ravi

Ravi kumar Kopparapu
8800 Greenbelt Road
NASA Goddard Space Flight Center
Mail Code 690, Building 34
Greenbelt, MD 20771
email: ravikumar.kopparapu@nasa.gov

Ph: (b) (6)

From: (b) (6)
Reply-To: (b) (6)
Date: Monday, September 21, 2020 at 11:28 AM
To: "Kopparapu, Ravi Kumar (GSFC-6990)" <ravikumar.kopparapu@nasa.gov>, (b) (6)
Subject: [EXTERNAL] Leonard David Media INquiry: UAPs and FLIR technology

Ravi: thanks for this...

Is it possible to use the draft letter in my story?

Also, on the UAPs, I do think there's need to go back to basics - as far as the airborne instrument used to video the objects.

The question I have regards the sensitivity to errors of the jet-aircraft equipped FLIR technology.

<https://www.raytheon.com/capabilities/products/atflir>

<https://www.raytheonmissilesanddefense.com/capabilities/products/flir>

I've looked into this a bit - and one would hope that Raytheon might help on the calibration issues of this hardware - and the strengths too.

On the other hand, they are trying to market this hardware and I would assume they wouldn't want to discuss shortcomings. However, trainers/pilots might be more forthcoming.

Let me know about your draft letter - a good step forward.

Leonard

-----Original Message-----

From: Kopparapu, Ravi Kumar (GSFC-6990) <ravikumar.kopparapu@nasa.gov>

To: (b) (6)

Sent: Mon, Sep 21, 2020 9:14 am

Subject: Re: [EXTERNAL] Leonard David Media INquiry: UFOs and scientific study

Hi Leonard,

Thanks for your kinds words. No problem to mention my NASA affiliation. I explicitly took approval from my higher ups before I sent the article.

I am hoping that articles like your's will provide impetus to release any collected data from Navy/DoD/Pentagon to figure what the heck are these things. Secrecy only perpetuates conspiracy theories. Some of the cases are totally bizarre and do not make any sense with the known laws of physics (like these Navy incidents, if we believe trained pilots testimony). May be they are explainable, however, the lack of data is really frustrating. I am really hoping they will involve scientists and make the data available. Or at least they (any congress member or govt. official) should say that UAP research is legitimate and needed to be done. This will help in conducting research by teams of scientists with cover from their statements without taboo.

You know, we have drafted a letter for Senator Marco Rubio with couple of like-minded scientists signed. As of now, four scientists from U.S. academic institutions signed on it. We are trying to get more, but I just can't find who is interested because several may not want to come out due to the taboo.

Best

Ravi

Ravi kumar Kopparapu
8800 Greenbelt Road
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Mail Code 690, Building 34
Greenbelt, MD 20771
email: ravikumar.kopparapu@nasa.gov

Ph: (b) (6)

From: (b) (6)

Reply-To: (b) (6)

Date: Monday, September 21, 2020 at 10:07 AM

To: "Kopparapu, Ravi Kumar (GSFC-6990)" <ravikumar.kopparapu@nasa.gov>

Subject: [EXTERNAL] Leonard David Media INquiry: UFOs and scientific study

Ravi: This is terrific and thanks for the response.

Is there any issue with noting your affiliation with NASA - if so, what's the best title for you in my article?

You bring up some great points...and I resonate with many of them.

When I was growing up in San Diego in the 1950s, George Adamski from up on nearby Palomar mountain was always on the airwaves. He had just gotten back from Venus and said it was hot there. So he must have actually gone!

Since those times...the UFO scene has shifted over and over and it's now a cottage industry that includes a number of charlatans.

I salute any effort that is scientifically trying to come to grips with this phenomenon.

All the best,
Leonard
SPACE.com

-----Original Message-----

From: Kopparapu, Ravi Kumar (GSFC-6990) <ravikumar.kopparapu@nasa.gov>

To: (b) (6)

Sent: Sun, Sep 20, 2020 7:51 pm

Subject: Re: [EXTERNAL] Leonard David Media INquiry: UFOs and scientific study

Hi Leonard,

Thank you for your email. Here are my thoughts:

I wrote a draft of the Scientific American article on UAP a year and half ago to collect my thoughts about UAP phenomena, and did not wish to publish it anywhere fearing ridicule and loss of reputation as a scientist. I showed it to my good friend Jacob, and he added his thoughts, but we were not sure where to publish it, if at all. Finally, we sent it to a common colleague of us for their opinion, and they suggested to send it to Scientific American, and that's how it got published there.

I view UAP/UFO phenomena as a scientifically interesting problem because, at least in some of the cases where scientific investigation was performed that I read about, these things seem to defy what I at least know about laws of physics. Granted, my knowledge may not be comprehensive and I am fully aware that many (or a large portion) of the cases can be explained away. I am not even going to bring in the 'Extra-terrestrial' into this conversation because (1) There is absolutely no concrete evidence that I know of that points to them as being extra-terrestrial and (2) the whole UAP topic has been much maligned by being associated with ET that actually prevents to perform a thorough scientific investigation by the science community, essentially because of the taboo surrounding it. We are proposing a completely unbiased, agnostic approach to study UAP. Let the data lead us to what they are.

And this brings me to the fundamental problem that we have right now to study UAP scientifically. We do not have proper data collection of this phenomena that can be shared among interested scientists to verify claims, and filter out truly unexplainable events. The recent news about Navy videos seem to indicate that there is some data available there, but requests to produce more expanded data did not seem to go anywhere. How can one study a phenomena scientifically when the data is not released? As a result, speculation and analysis based on snippets of videos occupy the vacuum created by lack of a thorough science investigation. This feeds into the taboo of the topic, thus repeating the cycle.

In addition, what this topic urgently needs is encouraging statements from elected members of congress and/or government officials to conduct scientific investigations of UAP from traditionally trained academics at U.S institutions, so that the taboo is minimized and more of us can participate in thorough and community coordinated UAP investigations providing them legitimacy to this topic. Otherwise, decades will pass relegating this particularly extraordinarily interesting science problem to the fringes. I noticed that the pentagon formed a task force to study the Navy incidents, however, I have no idea where that will go, if there is any scientific investigation being done as a part of it and if any (useful) data will be released which is of at most important. I am hoping they would contact some scientists.

And suggesting a scientific investigation of UAP nothing new. The science community was much more open 50 years ago and openly discussed it. My favorite science investigation on this topic is the one done by Prof. James McDonald from University of Arizona (he was a National Academy of Sciences member). He did a very thorough job of investigating UFO cases during the 60s and provided us with a template. So why create a taboo around it among the scientists now? I think people immediately think about 'aliens' when they hear UFOs/UAPs, and I want scientists to not fall for that. Be strictly agnostic and don't let pre-

conceived ideas cloud our judgments. Have an open mind. Consider this as a science problem. If it turns out these have mundane explanations, so be it. At least then we can confidently inform the public that a scientific investigation has been done, rather than dismissing them cavalierly. Let's do what we are trained to do.

Ravi

Ravi kumar Kopparapu
8800 Greenbelt Road
NASA Goddard Space Flight Center
Mail Code 690, Building 34
Greenbelt, MD 20771
email: ravikumar.kopparapu@nasa.gov

Ph: (b) (6)

From: (b) (6)
Reply-To: (b) (6)
Date: Sunday, September 20, 2020 at 7:16 PM
To: "Kopparapu, Ravi Kumar (GSFC-6990)" <ravikumar.kopparapu@nasa.gov>, (b) (6)
Subject: [EXTERNAL] Leonard David Media INquiry: UFOs and scientific study

Ravi: I am working on several new stories on the UAP/UFO phenomenon - and your recent Scientific American story caught my attention!

Just wondering if you could provide some fresh quotes on why this phenomenon should draw upon the participation of the scientific community.

In my view, there's been such a cottage industry built around this topic - perhaps deterring any long-lasting scientific scrutiny of this topic.

So I'd welcome any comments I can use for my writings.

BTW: A similar message is going out to Jacob Haqq-Misra - your co-author of the Scientific American piece.

Thanks,
Leonard
SPACE.com
Inside Outer Space
leonarddavid.com

To
Hon. Sen. Marco Rubio

We are scientists with decades of research experience in different disciplines at various academic and governmental institutions including NASA, University at Albany (SUNY), and Blue Marble Space Institute of Science. We are writing to you regarding the availability of recorded data on the recently reported Navy UAP (Unidentified Aerial Phenomena), and to request your support in providing access to any UAP data (current or prior) to the scientific community as long as this would not compromise our national security interests.

We would like to first thank you for your leadership and efforts for including language about UAP in the draft bill of Intelligence Authorization Act for fiscal year 2021. This is a great first step in bringing UAP into the scientific purview, and not relegate it to undeserved taboo that is prevalent within the science community and some in the general public. To avoid any premature conclusions, we as scientists insist on strict agnosticism about the nature of UAP and suggest an approach that is purely rational: UAP represents observations that are puzzling and waiting to be explained. Just like any other science discovery.

UAP are a worldwide occurrence, and several other countries have studied them. There is a lot of speculation around them in both academic and non-academic circles. Much of this speculation tends to misidentify known phenomena as UAP, while others will outright dismiss all UAP by assuming that every such phenomena must be explainable. The primary reason for all this confusion is due to lack of a rigorous scientific analysis.

Our proposal to scientifically study UAP phenomena is not new. Scholars such as Dr. Carl Sagan, Dr. J. Allen Hynek, Dr. James McDonald, Dr. Robert Hall and Dr. Robert Baker were involved in research during the 1960s to understand the nature of UAP. A systematic investigation is essential in order to bring the phenomena into mainstream science. For this to happen, collection of hard data is paramount to establishing any credibility to provide an explanation of the phenomena.

We sincerely (1) request you to help us in declassifying and making available any data related to UAP, such as imagery, videos, electromagnetic spectra so that we scientists can analyze and study the phenomena. (2) we would greatly appreciate any encouraging statements from government officials to conduct scientific investigations of UAP from traditionally trained academics at U.S institutions, so that the taboo is minimized and more of us can participate in thorough and community coordinated UAP investigations providing them legitimacy to this topic. There is a crucial advantage when multiple scientists with expertise in multiple disciplines work on the same problem, so that unique perspectives can help understand the nature of the data involved. We would be happy to discuss in person (or virtually) and outline the kind of data we are requesting.

Sincerely

Ravi Kopparapu (Planetary Scientist, NASA Goddard Space Flight Center)

Jacob Haqq-Misra (Research Scientist, Blue Marble Space Institute of Science)

Matthew Szydagis (Associate Professor, UAlbany SUNY Dept. of Physics)

Kevin H. Knuth (Associate Professor of Physics, UAlbany SUNY Dept. of Physics)

From: [Kopparapu, Ravi Kumar \(GSFC-6990\)](#)
To: [Green, James \(HQ-AE000\)](#)
Subject: Re: Gravity Assist/White Paper
Date: Wednesday, September 30, 2020 10:21:53 AM

Great! Looking forward to your thoughts on this matter. I thought it was silly at first but the more I learned from earlier work by well-respected scientists (James Mc Donald, Allen Hynek), the more baffling these events are becoming.

Ravi kumar Kopparapu
8800 Greenbelt Road
NASA Goddard Space Flight Center
Mail Code 690, Building 34
Greenbelt, MD 20771
email: ravikumar.kopparapu@nasa.gov

Ph: (b) (6)

From: "Green, James (HQ-AE000)" <james.green@nasa.gov>
Date: Wednesday, September 30, 2020 at 10:16 AM
To: "Kopparapu, Ravi Kumar (GSFC-6990)" <ravikumar.kopparapu@nasa.gov>
Subject: Re: Gravity Assist/White Paper

Oh yes... right!!!

I should have replied and let you know that I am still working down my list .. so GRAVITY ASSIST will continue while we are under telework.. so let me get back to you on this topic.. In fact I am recording a GA today with David L. Smith .. he has been involved in cloud microbes for more than a decade.. so with the venus results .. he is the perfect person to talk to ..

Best
Jim

From: "Kopparapu, Ravi Kumar (GSFC-6990)" <ravikumar.kopparapu@nasa.gov>
Date: Wednesday, September 30, 2020 at 10:11 AM
To: "Green, James (HQ-AE000)" <james.green@nasa.gov>
Cc: "Domagal-goldman, Shawn D. (GSFC-6930)" <shawn.goldman@nasa.gov>
Subject: FW: Gravity Assist/White Paper

Hi Jim,
This is the email I sent few weeks ago, following Shawn's email. Please see the attachment as well.
Thanks
Ravi

From: "Kopparapu, Ravi Kumar (GSFC-6990)" <ravikumar.kopparapu@nasa.gov>

Date: Wednesday, September 2, 2020 at 4:52 PM

To: "Domagal-goldman, Shawn D. (GSFC-6930)" <shawn.goldman@nasa.gov>, "Green, James (HQ-AE000)" <james.green@nasa.gov>

Subject: Re: Gravity Assist/White Paper

(Thanks Shawn!)

Hi Jim,

I hope you are doing well, and staying safe.

I was wondering if you have any interest or thoughts on a recent article that I wrote in Scientific American with a colleague of mine, about doing a scientific investigation of Unidentified Aerial Phenomena (UAP, formerly UFOs).

<https://www.scientificamerican.com/article/unidentified-aerial-phenomena-better-known-as-ufos-deserve-scientific-investigation/>

Let me right away say that I ***do not*** subscribe to any prior assumptions about the nature of these objects. I am militantly agnostic about what they are, and my only goal is to obtain as much data as possible to do what we do best: a science research. It is a bit frustrating that there is an unnecessary taboo associated with this topic, even though several decades ago illustrated scientists like Carl Sagan, James McDonald, Allen Hynek worked on this issue. These are not restricted to U.S, though recent events have been associated with U.S armed forces.

I am also leading a letter (attached) to Senator Marco Rubio, signed by few interested fellow scientists from different institutions, requesting to make any data available that does not conflict with national interest. If that is not possible, at least encouraging statements from government officials, or elected members of congress would at least provide a legitimacy to carry out an independent science investigation.

If you have any thoughts or interest, I would greatly appreciate it.

Thank you

Ravi

Ravi kumar Kopparapu
8800 Greenbelt Road
NASA Goddard Space Flight Center
Mail Code 690, Building 34
Greenbelt, MD 20771
email: ravikumar.kopparapu@nasa.gov

Ph: (b) (6)

From: "Domagal-goldman, Shawn D. (GSFC-6930)" <shawn.goldman@nasa.gov>

Date: Wednesday, September 2, 2020 at 4:23 PM

To: "Green, James (HQ-AE000)" <james.green@nasa.gov>

Cc: "Kopparapu, Ravi Kumar (GSFC-6990)" <ravikumar.kopparapu@nasa.gov>

Subject: Gravity Assist/White Paper

Jim,

I'm putting you in touch with Ravi Kopparapu for two reasons. First, he's someone that would be good to talk to about your white paper and has some things to share with you that are relevant to the things you've been working on. Second, he's a good interview candidate if you want to talk about how scientists are re-considering our approach to questions of SETI.

shawn

--

Shawn D. Domagal-Goldman

Branch Chief, Planetary Systems Lab (code 693)

Solar System Exploration Division

NASA Goddard Space Flight Center

Pronouns: He, him, his

Work cell (b) (6)

--

Programming note: With schools and summer camps closed due to the COVID-19 pandemic, I am on spending much of my "work-day" on child-care responsibilities, and am shifting some of my work to nights/weekends, including email. So if you receive an email from me outside of my or your normal business hours please do not feel obligated to send a response until it's "work time" where ever you are. If it is urgent or an emergency, I'll let you know.

To
Hon. Sen. Marco Rubio

We are scientists with decades of research experience in different disciplines at various academic and governmental institutions including NASA, University at Albany (SUNY), and Blue Marble Space Institute of Science. We are writing to you regarding the availability of recorded data on the recently reported Navy UAP (Unidentified Aerial Phenomena), and to request your support in providing access to any UAP data (current or prior) to the scientific community as long as this would not compromise our national security interests.

We would like to first thank you for your leadership and efforts for including language about UAP in the draft bill of Intelligence Authorization Act for fiscal year 2021. This is a great first step in bringing UAP into the scientific purview, and not relegate it to undeserved taboo that is prevalent within the science community and some in the general public. To avoid any premature conclusions, we as scientists insist on strict agnosticism about the nature of UAP and suggest an approach that is purely rational: UAP represents observations that are puzzling and waiting to be explained. Just like any other science discovery.

UAP are a worldwide occurrence, and several other countries have studied them. There is a lot of speculation around them in both academic and non-academic circles. Much of this speculation tends to misidentify known phenomena as UAP, while others will outright dismiss all UAP by assuming that every such phenomena must be explainable. The primary reason for all this confusion is due to lack of a rigorous scientific analysis.

Our proposal to scientifically study UAP phenomena is not new. Scholars such as Dr. Carl Sagan, Dr. J. Allen Hynek, Dr. James McDonald, Dr. Robert Hall and Dr. Robert Baker were involved in research during the 1960s to understand the nature of UAP. A systematic investigation is essential in order to bring the phenomena into mainstream science. For this to happen, collection of hard data is paramount to establishing any credibility to provide an explanation of the phenomena.

We sincerely (1) request you to help us in declassifying and making available any data related to UAP, such as imagery, videos, electromagnetic spectra so that we scientists can analyze and study the phenomena. (2) we would greatly appreciate any encouraging statements from government officials to conduct scientific investigations of UAP from traditionally trained academics at U.S institutions, so that the taboo is minimized and more of us can participate in thorough and community coordinated UAP investigations providing them legitimacy to this topic. There is a crucial advantage when multiple scientists with expertise in multiple disciplines work on the same problem, so that unique perspectives can help understand the nature of the data involved. We would be happy to discuss in person (or virtually) and outline the kind of data we are requesting.

Sincerely

Ravi Kopparapu (Planetary Scientist, NASA Goddard Space Flight Center)

Jacob Haqq-Misra (Research Scientist, Blue Marble Space Institute of Science)

Matthew Szydagis (Associate Professor, UAlbany SUNY Dept. of Physics)

Kevin H. Knuth (Associate Professor of Physics, UAlbany SUNY Dept. of Physics)

From: [Kopparapu, Ravi Kumar \(GSFC-6990\)](#)
To: [Manavi Jadhav](#)
Subject: Re: [EXTERNAL] official seminar reminder
Date: Wednesday, October 7, 2020 7:32:24 AM

Here is the Technisignatures seminar website. We have one today at 11am ET. We also record the talks and post on this website.

<https://seec.gsfc.nasa.gov/Events/technosignatureSeminars.html>

Ravi kumar Kopparapu
8800 Greenbelt Road
NASA Goddard Space Flight Center
Mail Code 690, Building 34
Greenbelt, MD 20771
email: ravikumar.kopparapu@nasa.gov

Ph: (b) (6)

From: Manavi Jadhav <manavi.jadhav@louisiana.edu>
Date: Tuesday, October 6, 2020 at 10:12 PM
To: "Kopparapu, Ravi Kumar (GSFC-6990)" <ravikumar.kopparapu@nasa.gov>
Subject: Re: [EXTERNAL] official seminar reminder

Which reminds me I downloaded your UFO paper but didn't read it!
Can I see the list of speakers at these technosignatures seminar series so I can look up their publications? It sounds super fascinating to me.

See you tomorrow!

Manavi Jadhav ([she/her](#))
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Due to my personal work habits, you might receive this email outside of your work hours. Please do not feel compelled to answer outside of your own work hours.

From: Manavi Jadhav <manavi.jadhav@louisiana.edu>
Sent: Tuesday, October 6, 2020 21:04
To: Kopparapu, Ravi Kumar (GSFC-6990) <ravikumar.kopparapu@nasa.gov>
Subject: Re: [EXTERNAL] official seminar reminder

Do it!

I like to shock physicists a little every once in a while.

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Due to my personal work habits, you might receive this email outside of your work hours. Please do not feel compelled to answer outside of your own work hours.

From: Kopparapu, Ravi Kumar (GSFC-6990) <ravikumar.kopparapu@nasa.gov>
Sent: Tuesday, October 6, 2020 19:34
To: Manavi Jadhav <manavi.jadhav@louisiana.edu>
Subject: Re: [EXTERNAL] official seminar reminder

Should I talk about Advanced civilizations, how to detect them and Technosignatures? It is a thing now at NASA and I am even leading a Technosignature seminar series with people talking about it.

Or is it too far off for Physicists?

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Ph: (b) (6)

From: Manavi Jadhav <manavi.jadhav@louisiana.edu>

Date: Tuesday, October 6, 2020 at 7:42 PM

To: "Kopparapu, Ravi Kumar (GSFC-6990)" <ravikumar.kopparapu@nasa.gov>

Subject: Re: [EXTERNAL] official seminar reminder

Hey Ravi,

I think your Bangalore talk sounds good to me. Could you add 1-2 slides of advanced stuff from your other talk to this one so advanced people are not too insulted for listening to a general science talk? As long as you show new exciting results and give enough of a senior undergrad level background to understand those results, it's all good.

The department knows pretty much nothing about exoplanets unless they've been studying it on their own. We haven't had any recent talks nor do we teach an advanced astrophysics talk. I teach the 100 level Astronomy class and we do talk about exoplanets but with no Math. And so some of the kids in the department have taken this class before (not with me) and I'd say that's their only exposure.

So I think if you kept it engaging and yet made them think a bit then it's good. Physics departments feel insulted (mostly faculty) when things are not quantitative so try to show the math involved (but not in detail) but don't lose track of the big picture. We also like students to know that if they do opt for a career in astrophysics then even though talks don't show the detailed calculations, they need to be good in Math. We get a lot of students who think Astronomy is all about pretty pictures and no math.

I'll send you the Zoom link in a separate email right after this.

Manavi

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Due to my personal work habits, you might receive this email outside of your work hours. Please do not feel compelled to answer outside of your own work hours.

From: Kopparapu, Ravi Kumar (GSFC-6990) <ravikumar.kopparapu@nasa.gov>
Sent: Tuesday, October 6, 2020 17:00
To: Manavi Jadhav <manavi.jadhav@louisiana.edu>
Subject: Re: [EXTERNAL] official seminar reminder

Hey,

I made a talk for tomorrow and then I realized that I really liked another talk that I made for Bangalore University people who have no background about exoplanets. I do not know your audience. Are they already familiar with exoplanets? Do they know its history and how things were detected? Do they know detection techniques? This Bangalore University talk is more geared for science audience who have no background in exoplanets. It's a step above general public talk, at the level of a senior undergrad level.

The other talk I made specifically for this one seems a bit boring to be honest, and is at a level of beginning grad or second-year grad.

Ravi

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email: ravikumar.kopparapu@nasa.gov

Ph: (b) (6)

From: Manavi Jadhav <manavi.jadhav@louisiana.edu>
Date: Sunday, October 4, 2020 at 10:28 PM
To: "Kopparapu, Ravi Kumar (GSFC-6990)" <ravikumar.kopparapu@nasa.gov>
Subject: Re: [EXTERNAL] official seminar reminder

Hey! Even since I became a teacher I don't allow self-deprecating statements from students and friends!

Lots of people will re-watch! Students these days are getting used to asynchronous instruction where videos are available for everything so they can go back to it when they want.

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Due to my personal work habits, you might receive this email outside of your work hours. Please do not feel compelled to answer outside of your own work hours.

From: Kopparapu, Ravi Kumar (GSFC-6990) <ravikumar.kopparapu@nasa.gov>
Sent: Sunday, October 4, 2020 19:52
To: Manavi Jadhav <manavi.jadhav@louisiana.edu>
Subject: Re: [EXTERNAL] official seminar reminder

Oops sorry, yes, I mean 2:30 your time.

And yes, it is perfectly fine if you record my talk. The only issue is who would be interested to even consider watching it !

Ravi

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8800 Greenbelt Road
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Greenbelt, MD 20771
email: ravikumar.kopparapu@nasa.gov

Ph: (b) (6)

From: Manavi Jadhav <manavi.jadhav@louisiana.edu>
Date: Sunday, October 4, 2020 at 8:46 PM
To: "Kopparapu, Ravi Kumar (GSFC-6990)" <ravikumar.kopparapu@nasa.gov>
Subject: Re: [EXTERNAL] official seminar reminder

I'm assuming 3:30 your time which is 2:30 my time, right?

Yeah - that works perfectly. We can also chat a bit later as I'm free from 4 - 4:30 before I have office hours.

Also, is it okay if I recorded your talk? I won't put it anywhere public, just on the student portal where students can access it if they want to re-watch it. They are not allowed to download it from there. I can send you a link too, so you can download and use it for outreach or whatever you need it for. A lot of speakers are finding this useful.

See you soon!

Manavi

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Due to my personal work habits, you might receive this email outside of your work hours. Please do not feel compelled to answer outside of your own work hours.

From: Kopparapu, Ravi Kumar (GSFC-6990) <ravikumar.kopparapu@nasa.gov>
Sent: Sunday, October 4, 2020 19:39
To: Manavi Jadhav <manavi.jadhav@louisiana.edu>
Subject: Re: [EXTERNAL] official seminar reminder

Hi Manavi,
Great! Thanks. Yes, I have a meeting that ends at 3:30, so would that work?
See you soon!
Ravi

Ravi kumar Kopparapu
8800 Greenbelt Road
NASA Goddard Space Flight Center
Mail Code 690, Building 34
Greenbelt, MD 20771
email: ravikumar.kopparapu@nasa.gov

Ph: (b) (6)

From: Manavi Jadhav <manavi.jadhav@louisiana.edu>

Date: Sunday, October 4, 2020 at 8:33 PM

To: "Kopparapu, Ravi Kumar (GSFC-6990)" <ravikumar.kopparapu@nasa.gov>

Subject: Re: [EXTERNAL] official seminar reminder

Hey Ravi,

Here's your reminder that you will giving our weekly seminar at 3 pm Central time on Wednesday, October 7. I'll send you a Zoom invite the night before so that it doesn't get lost in the sea of emails that Zoom invites often seem to get lost in.

Let me know if you can chat earlier. I am free from 2:15 onwards.

Cheers,
Manavi

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From: Kopparapu, Ravi Kumar (GSFC-6990) <ravikumar.kopparapu@nasa.gov>

Sent: Tuesday, August 25, 2020 16:02

To: Manavi Jadhav <manavi.jadhav@louisiana.edu>

Subject: Re: [EXTERNAL] official seminar reminder

Oh no! This looks serious. I have been following it on the weather channel and I see that it is passing right on top of Lafayette! Do take precautions.

Not a problem and Oct 7 is fine. It's the same time, right? 3pm CT?

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8800 Greenbelt Road

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email: ravikumar.kopparapu@nasa.gov

Ph: (b) (6)

From: Manavi Jadhav <manavi.jadhav@louisiana.edu>
Date: Tuesday, August 25, 2020 at 4:55 PM
To: "Kopparapu, Ravi Kumar (GSFC-6990)" <ravikumar.kopparapu@nasa.gov>
Subject: Re: [EXTERNAL] official seminar reminder

Hey Ravi,
Bad news, UL just declared a shutdown for tomorrow and Thursday because Hurricane Laura is expected to be a Category 3 storm now. So your seminar has been cancelled. This sucks! My students were super excited to hear you speak, as was I.

Is there any chance we can reschedule for October 7 which is a Wednesday again? Same time. I kept one free day for events such as these.

Hope we don't get blown away in the winds!
Manavi

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<https://manavijadhav.com/>

From: Kopparapu, Ravi Kumar (GSFC-6990) <ravikumar.kopparapu@nasa.gov>
Sent: Sunday, August 23, 2020 20:39
To: Manavi Jadhav <manavi.jadhav@louisiana.edu>
Subject: Re: [EXTERNAL] official seminar reminder

Hi Manavi,
Oh no! I heard about that double hurricane. This is insane, in the midst of a pandemic! I hope you packed enough essentials for couple days.
I am sorry to hear that it is still face-to-face classes. I guess we will see how it goes.
My bio I am a planetary scientist at NASA Goddard Space Flight Center. My research work is in planetary (both solar system and exoplanet) atmospheres and habitability. I am currently co-leading

Sellers Exoplanet Environments Collaboration (SEEC), which is a multi-disciplinary group of nearly 50 scientists to study the broad diversity of exoplanet atmospheres at Goddard.

My CV is up-to-date, I think.

Stay safe!

Ravi

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8800 Greenbelt Road
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Mail Code 690, Building 34
Greenbelt, MD 20771
email: ravikumar.kopparapu@nasa.gov

Ph: (b) (6)

From: Manavi Jadhav <manavi.jadhav@louisiana.edu>

Date: Sunday, August 23, 2020 at 6:26 PM

To: "Kopparapu, Ravi Kumar (GSFC-6990)" <ravikumar.kopparapu@nasa.gov>

Subject: Re: [EXTERNAL] official seminar reminder

Hey Ravi,

Here's your reminder that you are scheduled to give a Zoom seminar in my department at 3 pm Wednesday CDT (4 pm EDT). Can you please send me a brief bio to help me introduce you. Stuff about you that you care about the most - is your CV up to date on your website? I won't skip educational details because those are important to the kids. Let me know about awards etc.

Also, just a heads-up we are expecting one category 1 hurricane tomorrow and Tuesday and a 2nd storm is supposed to arrive right after on Wednesday but storm 1 might affect storm 2 so things are up in the air right now. I should be able to confirm the seminar with you on Tuesday night. If you don't hear from me at all, then Louisiana is probably incommunicado and seminar is cancelled. If I can get in touch, I will keep you updated.

If we are able to hold seminar, I'll send you the Zoom link on Tuesday night and we should plan on getting on Zoom at least 20 mins in advance just to be safe. Also, don't be offended if people start leaving at 4 pm (if your seminar goes over time), students and profs might have classes that start at 4 pm. UL is having face to face classes so they might need to get some

where.

See you on Wednesday (I hope),
Manavi

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<https://manavijadhav.com/>

From: Kopparapu, Ravi Kumar (GSFC-6990) <ravikumar.kopparapu@nasa.gov>
Sent: Sunday, August 9, 2020 11:17
To: Manavi Jadhav <manavi.jadhav@louisiana.edu>
Subject: Re: [EXTERNAL] official seminar reminder

Great! Thank you. Here is a title and an abstract. One question is how much are the audience familiar with the field of extrasolar planets and habitability?

“Habitable Worlds in our Galaxy”

To-date, more than 4000 exoplanets, planets orbiting stars other than our Sun, have been discovered. These discoveries not only opened a new window to put our Solar system in context with other planetary systems, but also increased the prospects of finding life on other planets. I will discuss the current status of the search for habitable worlds, summarizing the most important discoveries and potential climates of these planets. I will conclude with discussing the current and planned missions to find extraterrestrial life, and prospects of identifying such life through remote observations.

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email: ravikumar.kopparapu@nasa.gov

Ph: (b) (6)

From: Manavi Jadhav <manavi.jadhav@louisiana.edu>

Date: Sunday, August 9, 2020 at 4:18 AM

To: "Kopparapu, Ravi Kumar (GSFC-6990)" <ravikumar.kopparapu@nasa.gov>

Subject: [EXTERNAL] official seminar reminder

Hey Ravi,

Here's an official reminder that you are our seminar speaker on August 26. Seminar meets from 3 - 4 pm CDT which is 4-5 pm EDT. You should probably block off 15 mins before hand and 15-20 mins after, just in case things spill over.

Thanks again for doing this. I'll write again for a title and abstract as we get closer to the date.

Hope all's well!

Manavi

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<https://manavijadhav.com/>

From: [Manavi Jadhav](#)
To: [Kopparapu, Ravi Kumar \(GSFC-6990\)](#)
Subject: Re: [EXTERNAL] official seminar reminder
Date: Wednesday, October 7, 2020 12:42:50 PM

Sounds like I need to start research in this field too as my life is the epitome of boring right now!!

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Due to my personal work habits, you might receive this email outside of your work hours. Please do not feel compelled to answer outside of your own work hours.

From: Kopparapu, Ravi Kumar (GSFC-6990) <ravikumar.kopparapu@nasa.gov>
Sent: Wednesday, October 7, 2020 06:34
To: Manavi Jadhav <manavi.jadhav@louisiana.edu>
Subject: Re: [EXTERNAL] official seminar reminder

I forgot to mention that the speakers are normal, everyday boring astronomers/physicists/anthropologists/historians. They have day jobs as profs/researchers etc. But thinking about Technosignatures gives them more freedom and it is way more interesting.

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Ph: (b) (6)

From: Manavi Jadhav <manavi.jadhav@louisiana.edu>
Date: Tuesday, October 6, 2020 at 10:12 PM
To: "Kopparapu, Ravi Kumar (GSFC-6990)" <ravikumar.kopparapu@nasa.gov>
Subject: Re: [EXTERNAL] official seminar reminder

Duplicate email chain - already processed

Deletion Page

Requester: John Greenewald

Request #: 21-HQ-F-00603

10 page(s) containing duplicate information is/are held in the file.

From: [Kopparapu, Ravi Kumar \(GSFC-6990\)](#)
To: [Jacob Haqq Misra](#)
Subject: FW: [EXTERNAL] Space article
Date: Monday, October 12, 2020 3:44:52 PM

From: Jake Carr (b) (6)
Date: Monday, October 12, 2020 at 1:34 PM
To: "Kopparapu, Ravi Kumar (GSFC-6990)" <ravikumar.kopparapu@nasa.gov>
Subject: [EXTERNAL] Space article

Hi sir,

Enjoyed reading today's Space.com article about UFOs/UAP. Within it, you were quoted saying:

"That's because there is absolutely no concrete evidence that I know of that points to them as being extraterrestrial."

Please consider reading 'UFOs and Nukes' by Robert Hastings (ufohastings.com), whose intriguing research and hypothesis were recently [confirmed on-the-record](#) by former Senator Harry Reid. Mr. Hastings is kind enough to reply to my idiotic questions and comments so I am sure he could reply to someone of your stature too.

Technologically advanced UFOs shutting off both American and Soviet nuclear weapons systems decade after decade seems difficult to explain in "prosaic" terms. And I personally consider an extraterrestrial or interdimensional hypothesis more likely than a breakaway civilization, secret space program, or whatever other conspiracy. To quote astronaut Edgar Mitchell, "there are no unnatural or supernatural phenomena, only very large gaps in our knowledge of what is natural."

Maybe you already know this and are just obligated to deliver the "official" line. In any case, I think this cover-up is tremendously lame and depressing, and would simply like to know at least a fraction of the truth about UFOs before dying.

Best regards,
Jake

From: [Swenson, Christina \(GSFC-699.0\)\[ASRC FEDERAL SYSTEM SOLUTIONS\]](#)
To: [Kopparapu, Ravi Kumar \(GSFC-6990\)](#); [Malespin, Charles A. \(GSFC-6990\)](#)
Cc: [Guzewich, Scott D. \(GSFC-6990\)](#)
Subject: Re: PEL Activities and Highlights: October 13 - October 16
Date: Tuesday, October 13, 2020 8:28:49 AM

Looks awesome. Thank you Ravi!!!

On: 13 October 2020 08:26, "Kopparapu, Ravi Kumar (GSFC-6990)"
<ravikumar.kopparapu@nasa.gov> wrote:

Hi Christina,

Here is the highlight text;

Ravi Kopparapu (699) was interviewed last month (about UAPs) in a space.com article

<https://www.space.com/unidentified-aerial-phenomena-scientific-scrutiny>

Thanks

Ravi

From: "Swenson, Christina (GSFC-699.0)[ASRC FEDERAL SYSTEM SOLUTIONS]" <christina.swenson@nasa.gov>
Date: Tuesday, October 13, 2020 at 8:23 AM
To: "Kopparapu, Ravi Kumar (GSFC-6990)" <ravikumar.kopparapu@nasa.gov>, "Malespin, Charles A. (GSFC-6990)" <Charles.A.Malespin@nasa.gov>
Cc: "Guzewich, Scott D. (GSFC-6990)" <scott.d.guzewich@nasa.gov>
Subject: Re: PEL Activities and Highlights: October 13 - October 16

Good morning Ravi,

Thank you for sending! I do believe your interview would be perfect to add to the highlights.

Do you have any further details you would like to add to the highlight such as title of the article or link for folks to read?

This is what I have so far:

“Ravi Kopparapu (699) was interviewed last month (about UAPS) in a space.com article.”

Thanks again!

Best regards,

Christina

On: 12 October 2020 15:39, "Kopparapu, Ravi Kumar (GSFC-6990)" <ravikumar.kopparapu@nasa.gov> wrote:

Hi Charles, Scott and Christina,

This week, I have couple of SEEC and research meetings. Mostly general research and management work.

The only modest new thing is that I was nominated for membership at International Academy of Astronautics SETI committee.

There is space.com article I was interviewed last month (about UAPs), and I am wondering/hesitating if it relevant as a highlight.

Ravi

Ravi kumar Kopparapu

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email: ravikumar.kopparapu@nasa.gov

Ph: (b) (6)

From: (b) (6) on behalf of
"Malespin, Charles A. (GSFC-6990)"
<Charles.A.Malespin@nasa.gov>
Date: Monday, October 12, 2020 at 2:29 PM
To: 699 Staff (b) (6)
Subject: PEL Activities and Highlights: October 13 - October 16

Hi PEL,

Hopefully everyone got some rain free time to relax during the long weekend.

A few items of note for this week:

- Heads up! Scott and I will be sending out B37 schedule and move information to 699 all soon, please pay attention to the email and try to respond in a timely manner.
- **NEW:** Scott and I have set up 'office hours' to provide another way for people to reach out and express any concerns, or ask for help. We will have a standing TEAMS meeting open **every Monday and Thursday, from 3-4 pm**. (The invite is set up so that we approve who joins in the lobby, so if someone is already joined and talking to us, we can make sure that everyone's privacy is secure). You can jump in and discuss any topic, so please do not hesitate to reach out! Of course, if

these times do not work let us know and we can find something that works for your schedule.

[Join Microsoft Teams Meeting](#)

- Christina also sent out a way to provide anonymous feedback and questions so that we can encourage everyone to feel comfortable speaking any concerns. Please use the link below.

[http](#) (b) (6)

- Reminder, we will ask that you send your weekly plans and highlights to Christina, myself, and Scott. **This is expected from EVERYONE. We have had a reduced response recently, please make sure to update the google doc and provide Scott and myself with your weekly plans.**
- **If you are going on center, please add the room(s) and times you will be in B33/34 into your google doc plans for the week. Scott and I will be using this information to track how many people will be in each lab/room during the week.**

Reminder of the required tasks for the next week:

1. **Activities and Plans** – Please send a few brief bullets on your activities this week to me, with a cc to Scott.
2. **Highlights** – These would fall into the categories below and should be sent to me, with a cc to Scott and Christina, by [11:00am Wednesday](#). They are open to submissions by everyone working on PEL projects, and these updates are extremely helpful to representing the activities in the PEL, as they are reported up (and read!) through the management chain. For those supported by FLaRe, GIFT, EIMM, SEEC, and/or Geodesy, please include an attribution to any highlight that is associated with work package support.
3. **Where can we find you?** -- Don't forget to let us know your

whereabouts by shared spreadsheet or email!

<https://docs.google.com> (b) (6)
(b) (6)
<https://docs.google.com> (b) (6)
(b) (6)

Let me know if you have any additions to the list of announcements, and have a great week!

Charles

-----Highlight categories-----

Science Discovery

Science Awards

Mission and Project News (also include NTR submissions)

Published Papers (only submit the week published online)

Author1, A. B. (6xx), Author2, A. B. (6xx), Author3, A. B. (6xx),
Year: "This is the title of the paper," Journal Name, citation (if available), doi (if available), url (if available). Lastly, there should be a sentence or more that explains what this paper is about. e.g. This papers describes some great new results. Goddard played a primary role etc. etc.

Submitted Papers (for Lonnie Shekhtman only)

Proposals

Significant Events/Presentations

External Interactions

Communication/media

Community Service

Education and Outreach

Staff Changes

Charles A Malespin

Chief, Planetary Environments Lab (Code 699)

NASA Goddard Space Flight Center

301-614-6042 (o), (b) (6) c)

<https://science.gsfc.nasa.gov/solarsystem/atmosenvironments>

From: (b) (6)
To: ravikumar.kopparapu@nasa.gov; [Kopparapu, Ravi Kumar \(GSFC-6990\)](#)
Subject: [EXTERNAL] Leonard David FYI: UAP story - thanks for your assist - OKII
Date: Tuesday, October 13, 2020 11:23:28 AM

Ravi: Thanks...let's stay in touch.

Also, let me know if that letter moves forward and is sent - or perhaps that's already taken place?

Would make for a short story...follow-up.

Leonard

-----Original Message-----

From: [Kopparapu, Ravi Kumar \(GSFC-6990\) <ravikumar.kopparapu@nasa.gov>](mailto:Kopparapu, Ravi Kumar (GSFC-6990) <ravikumar.kopparapu@nasa.gov>)
To: (b) (6)
Sent: Tue, Oct 13, 2020 6:24 am
Subject: Re: [EXTERNAL] Leonard David FYI: UAP story - thanks for your assist!

Thanks! Nice article.

Ravi kumar Kopparapu
8800 Greenbelt Road
NASA Goddard Space Flight Center
Mail Code 690, Building 34
Greenbelt, MD 20771
email: ravikumar.kopparapu@nasa.gov

Ph: (b) (6)

From: (b) (6)
Reply-To: (b) (6)
Date: Monday, October 12, 2020 at 9:25 AM
To: "Kopparapu, Ravi Kumar (GSFC-6990)" <ravikumar.kopparapu@nasa.gov>
Subject: [EXTERNAL] Leonard David FYI: UAP story - thanks for your assist!

Scientists call for serious study of 'unidentified aerial phenomena'
You don't have to be an alien truther to be curious about recent UAP events.
<https://www.space.com/unidentified-aerial-phenomena-scientific-scrutiny>

From: [Kopparapu, Ravi Kumar \(GSFC-6990\)](#)
To: [Mcadam, Amy \(GSFC-6990\)](#)
Subject: Re: Breakfast and Learn
Date: Monday, November 30, 2020 8:24:01 AM

Hi Amy,

Yes! Let me finalize the slides and I will upload them. I made them already but just want to make sure they are good. Will upload them today.

Thanks

Ravi

Ravi kumar Kopparapu
8800 Greenbelt Road
NASA Goddard Space Flight Center
Mail Code 690, Building 34
Greenbelt, MD 20771
email: ravikumar.kopparapu@nasa.gov

From: "Mcadam, Amy (GSFC-6990)" <amy.mcadam-1@nasa.gov>
Date: Monday, November 30, 2020 at 12:40 AM
To: "Kopparapu, Ravi Kumar (GSFC-6990)" <ravikumar.kopparapu@nasa.gov>
Subject: Re: Breakfast and Learn

Hi Ravi,

Looking forward to your talk this week! I wanted to check, would you be up for sharing your slides on the B&L Google drive too?

Thanks!

Amy

From: "Kopparapu, Ravi Kumar (GSFC-6990)" <ravikumar.kopparapu@nasa.gov>
Date: Friday, October 30, 2020 at 5:31 PM
To: "Mcadam, Amy (GSFC-6990)" <amy.mcadam-1@nasa.gov>
Subject: Re: Breakfast and Learn

Hi Amy,

Oops sorry. Emails piled up quickly.

How about this?

Technosignatures: The Little Sisters of Biosignatures

Biosignatures are signs of potential life that could be a tell-tale signal of a planet being inhabited. Similar to biosignatures, "technosignatures" refer to any observational manifestations of extraterrestrial technology that could be detected or inferred through searches. The detection of technological activity of another civilization may become a watershed event in the search for life. In this talk, I will give a brief summary of the field of technosignatures, discussing potential signs of technological activity of a civilization, current efforts to detect them and the possibility of their detection with future missions.

Ravi kumar Kopparapu
8800 Greenbelt Road
NASA Goddard Space Flight Center
Mail Code 690, Building 34
Greenbelt, MD 20771
email: ravikumar.kopparapu@nasa.gov

From: "Mcadam, Amy (GSFC-6990)" <amy.mcadam-1@nasa.gov>
Date: Friday, October 30, 2020 at 1:25 PM
To: "Kopparapu, Ravi Kumar (GSFC-6990)" <ravikumar.kopparapu@nasa.gov>
Subject: Re: Breakfast and Learn

Awesome, thanks so much Ravi! What would be an approximate title or titles for the presentation?

Looking forward to it!
Amy

From: "Kopparapu, Ravi Kumar (GSFC-6990)" <ravikumar.kopparapu@nasa.gov>
Date: Friday, October 30, 2020 at 1:22 PM
To: "Mcadam, Amy (GSFC-6990)" <amy.mcadam-1@nasa.gov>
Subject: Re: Breakfast and Learn

Hi Amy,
Yes, Dec 1 works!
Tahnks
Ravi

Ravi kumar Kopparapu
8800 Greenbelt Road
NASA Goddard Space Flight Center
Mail Code 690, Building 34
Greenbelt, MD 20771
email: ravikumar.kopparapu@nasa.gov

From: "Mcadam, Amy (GSFC-6990)" <amy.mcadam-1@nasa.gov>
Date: Friday, October 30, 2020 at 1:18 PM
To: "Kopparapu, Ravi Kumar (GSFC-6990)" <ravikumar.kopparapu@nasa.gov>
Subject: Re: Breakfast and Learn

Hi Ravi,

Thanks! That sounds good to talk about topics 2 and 3. Sounds interesting!

Would the December 1st time slot work for you?

Thanks again!
Amy

From: "Kopparapu, Ravi Kumar (GSFC-6990)" <ravikumar.kopparapu@nasa.gov>
Date: Thursday, October 29, 2020 at 7:43 PM
To: "Mcadam, Amy (GSFC-6990)" <amy.mcadam-1@nasa.gov>
Subject: Re: Breakfast and Learn

Hi Amy,

Thank you!

I would be happy to give a talk. I got multiple topics, so I am wondering which one will be more interesting.

1. My ICAR (plain vanilla, traditional science, but good science)
2. Technosignatures (I have a paper in review and have a talk already ready). This is traditional science + exploratory
3. UAP – Unidentified Aerial Phenomena (or UFOs formerly). I wrote an article to Scientific American about need for a serious science investigation, like we did 50 years ago. This is ‘uncharted exploratory’ territory science and pretty hard to accept the weird things for our traditionally trained scientific minds.

Charles and Scott expressed some interest in 2 & 3 when I chatted with them. If you think that would be fun to talk, I am happy to do so. May be I can even combine 2 & 3

Ravi

Ravi kumar Kopparapu

8800 Greenbelt Road
NASA Goddard Space Flight Center
Mail Code 690, Building 34
Greenbelt, MD 20771
email: ravikumar.kopparapu@nasa.gov

From: "McAdam, Amy (GSFC-6990)" <amy.mcadam-1@nasa.gov>
Date: Thursday, October 29, 2020 at 6:44 PM
To: "Kopparapu, Ravi Kumar (GSFC-6990)" <ravikumar.kopparapu@nasa.gov>
Subject: Breakfast and Learn

Hi Ravi,

I wanted to ask, would you be up for giving a Breakfast and Learn seminar (~45 minutes including questions, immediately after our staff meeting) in one of the upcoming slots? It'd be great to hear about your ICAR! (Congrats!!) You could also talk about other topics if desired, too.

The upcoming slots are:

December 1st

January 12th

February 2nd

Thanks!

Amy

--

Amy C. McAdam, Ph.D.
Research Scientist
Planetary Environments Laboratory
Solar System Exploration Division
Code 699
NASA Goddard Space Flight Center
Greenbelt, MD 20771
301-614-6020 (Office)
301-614-6406 (Fax)
Amy.McAdam-1@nasa.gov
<http://science.gsfc.nasa.gov/sed/bio/amy.mcadam-1>

From: [Kopparapu, Ravi Kumar \(GSFC-6990\)](#)
To: [Mcadam, Amy \(GSFC-6990\)](#)
Subject: Re: Breakfast and Learn
Date: Monday, November 30, 2020 4:09:43 PM

Hi Amy,

Ok, I uploaded my Keynote presentation. Is that ok? Or a PDF is also needed? I guess I will upload PDF also.....ok, done!

Ravi

Ravi kumar Kopparapu
8800 Greenbelt Road
NASA Goddard Space Flight Center
Mail Code 690, Building 34
Greenbelt, MD 20771
email: ravikumar.kopparapu@nasa.gov

From: "Mcadam, Amy (GSFC-6990)" <amy.mcadam-1@nasa.gov>
Date: Monday, November 30, 2020 at 3:55 PM
To: "Kopparapu, Ravi Kumar (GSFC-6990)" <ravikumar.kopparapu@nasa.gov>
Subject: Re: Breakfast and Learn

Hi Ravi,

Oh! Sorry about that, I have added you.

Thanks!
Amy

From: "Kopparapu, Ravi Kumar (GSFC-6990)" <ravikumar.kopparapu@nasa.gov>
Date: Monday, November 30, 2020 at 2:44 PM
To: "Mcadam, Amy (GSFC-6990)" <amy.mcadam-1@nasa.gov>
Subject: Re: Breakfast and Learn

Hi Amy,

It looks like I do not have permissions to upload my presentation. It is 14MB in size. My gmail address is (b) (6)

Thanks
Ravi

Ravi kumar Kopparapu
8800 Greenbelt Road

NASA Goddard Space Flight Center
Mail Code 690, Building 34
Greenbelt, MD 20771
email: ravikumar.kopparapu@nasa.gov

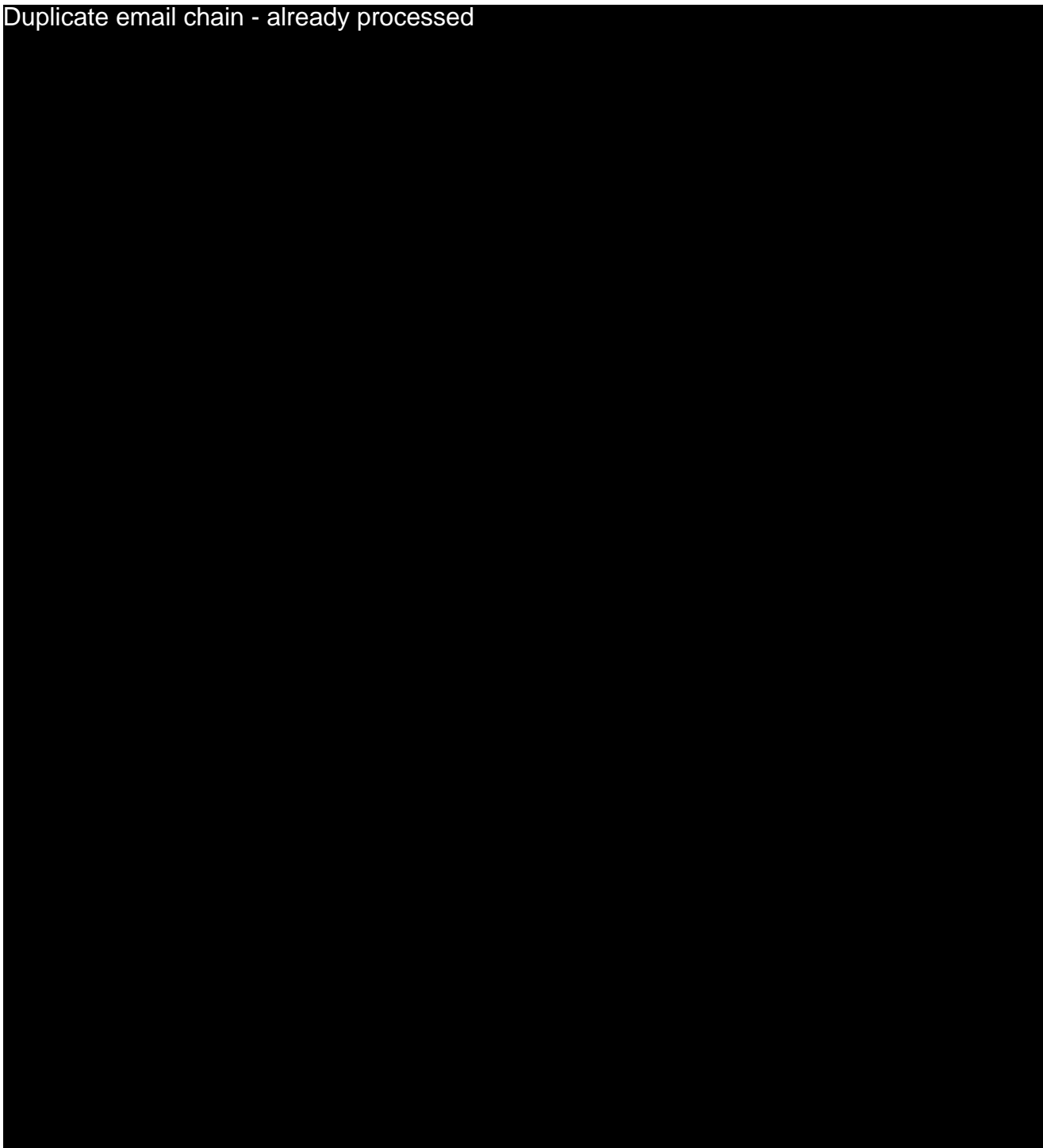
From: "Mcadam, Amy (GSFC-6990)" <amy.mcadam-1@nasa.gov>

Date: Monday, November 30, 2020 at 12:40 AM

To: "Kopparapu, Ravi Kumar (GSFC-6990)" <ravikumar.kopparapu@nasa.gov>

Subject: Re: Breakfast and Learn

Duplicate email chain - already processed



Deletion Page

Requester: John Greenewald

Request #: 21-HQ-F-00603

3 page(s) containing duplicate information is/are held in the file.

From: [Kopparapu, Ravi Kumar \(GSFC-6990\)](#)
To: [Andreoli, Claire \(GSFC-1300\)](#)
Subject: Re: [EXTERNAL] Press inquiry
Date: Thursday, December 17, 2020 3:02:56 PM

Hi Claire,
Technoclimes was a NASA sponsored conference <https://technoclimes.org/>
We applied for NASA funding and obtained to organize it.
Thanks
Ravi

Ravi kumar Kopparapu
8800 Greenbelt Road
NASA Goddard Space Flight Center
Mail Code 690, Building 34
Greenbelt, MD 20771
email: ravikumar.kopparapu@nasa.gov

From: "Andreoli, Claire (GSFC-1300)" <claire.andreoli@nasa.gov>
Date: Thursday, December 17, 2020 at 3:01 PM
To: "Kopparapu, Ravi Kumar (GSFC-6990)" <ravikumar.kopparapu@nasa.gov>
Subject: Re: [EXTERNAL] Press inquiry

Duplicate email chain - already processed



Deletion Page

Requester: John Greenewald

Request #: 21-HQ-F-00603

5 page(s) containing duplicate information is/are held in the file.

From: [Kopparapu, Ravi Kumar \(GSFC-6990\)](#)
To: [Andreoli, Claire \(GSFC-1300\)](#)
Subject: Re: [EXTERNAL] Press inquiry
Date: Thursday, December 17, 2020 3:03:14 PM

Haha...just sent you the message.

Ravi kumar Kopparapu
8800 Greenbelt Road
NASA Goddard Space Flight Center
Mail Code 690, Building 34
Greenbelt, MD 20771
email: ravikumar.kopparapu@nasa.gov

From: "Andreoli, Claire (GSFC-1300)" <claire.andreoli@nasa.gov>
Date: Thursday, December 17, 2020 at 3:02 PM
To: "Kopparapu, Ravi Kumar (GSFC-6990)" <ravikumar.kopparapu@nasa.gov>
Subject: Re: [EXTERNAL] Press inquiry

Sorry for the multiple e-mails, Ravi. I'm looking at the Techno Climes page now and see it's NASA-sponsored. You can disregard my previous message.

--
Claire Andreoli
NASA's Goddard Space Flight Center
Office of Communications
office: (301) 286 1940
cell: (b) (6)
claire.andreoli@nasa.gov

From: "Andreoli, Claire (GSFC-1300)" <claire.andreoli@nasa.gov>
Date: Thursday, December 17, 2020 at 3:01 PM
To: "Kopparapu, Ravi Kumar (GSFC-6990)" <ravikumar.kopparapu@nasa.gov>
Subject: Re: [EXTERNAL] Press inquiry

Although reading further into this, it doesn't sound like the technoclimates conferences are NASA-affiliated, right? If that's the case, you probably shouldn't be using your NASA affiliation when speaking to reporters about it, but let me see if I can get some clarity from OCOMM.

--
Claire Andreoli
NASA's Goddard Space Flight Center
Office of Communications
office: (301) 286 1940
cell: (b) (6)
claire.andreoli@nasa.gov

From: "Andreoli, Claire (GSFC-1300)" <claire.andreoli@nasa.gov>
Date: Thursday, December 17, 2020 at 2:59 PM
To: "Kopparapu, Ravi Kumar (GSFC-6990)" <ravikumar.kopparapu@nasa.gov>
Subject: Re: [EXTERNAL] Press inquiry

Thanks for keeping me in the loop on this! We'll want to be careful if MJ wants to follow up and get more in depth on the topic of technosignatures. As you can imagine, NASA representatives have to exercise care in this area when speaking publicly.

--

Claire Andreoli
NASA's Goddard Space Flight Center
Office of Communications
office: (301) 286 1940
cell: (b) (6)
claire.andreoli@nasa.gov

From: "Kopparapu, Ravi Kumar (GSFC-6990)" <ravikumar.kopparapu@nasa.gov>
Date: Thursday, December 17, 2020 at 11:44 AM
To: MJ Banias (b) (6)
Cc: "Andreoli, Claire (GSFC-1300)" <claire.andreoli@nasa.gov>
Subject: Re: [EXTERNAL] Press inquiry

Hi MJ,

We organize these conferences because, at least for Technosignature field, we would like to get like-minded people to come together and share ideas about what kind of technosignatures could be out there, and how to search for them. It is also exciting to be part of a budding field that has just started exploring what is out there. These types of conferences are where we can freely share those 'out-of-the-box' ideas without any judgment from anyone.

Ravi

Ravi kumar Kopparapu
8800 Greenbelt Road
NASA Goddard Space Flight Center
Mail Code 690, Building 34
Greenbelt, MD 20771
email: ravikumar.kopparapu@nasa.gov

From: MJ Banias (b) (6)
Date: Wednesday, December 16, 2020 at 1:39 PM
To: "Kopparapu, Ravi Kumar (GSFC-6990)" <ravikumar.kopparapu@nasa.gov>
Subject: Re: [EXTERNAL] Press inquiry

Hi,

I'd like to write an article about your mini-conferences and lectures you provide at Technoclimes.

I think if more people knew, they would be really popular.

Can you maybe provide a quote for me as to why you host these little conferences?

Thanks,

MJ

On Tue, Dec 15, 2020 at 1:07 PM Kopparapu, Ravi Kumar (GSFC-6990)

<ravikumar.kopparapu@nasa.gov> wrote:

Hi MJ,

For Solar system technosignatures, I have not yet started. For exoplanet technosignatures, as I mentioned in my previous email, I have a paper in review to see how detecting industrial pollution in the atmosphere of an exoplanet can tell us about extra-terrestrial civilization. I could discuss this one once it is accepted.

This is not related to NASA Technosignature activities, and is more of my personal academic curiosity, but I (along with my colleague Jacob Haqq-Misra) wrote an article about scientific investigation of UAP back in July, after getting approval from my bosses. This is publicly available at <https://www.scientificamerican.com/article/unidentified-aerial-phenomena-better-known-as-ufos-deserve-scientific-investigation/>

We are not including this in the Technosignature research for several reasons: (1) We really do not know what they are and could possibly be known objects and (2) UAP is still a scientific taboo and we need to speak the language of scientists, which is data, data and data. We have very little to none on this topic so it has been very frustrating to do any serious science investigation on this. I should strongly emphasize that we do not subscribe or prefer any particular hypothesis to explain these, but merely want to investigate. However, lack of real data (radar, Infra-red, speed, timing, altitude etc.) led us to nowhere.

Best

Ravi

Ravi kumar Kopparapu
8800 Greenbelt Road
NASA Goddard Space Flight Center
Mail Code 690, Building 34
Greenbelt, MD 20771
email: ravikumar.kopparapu@nasa.gov

From: MJ Banias (b) (6)

Date: Tuesday, December 15, 2020 at 12:23 PM

To: "Kopparapu, Ravi Kumar (GSFC-6990)" <ravikumar.kopparapu@nasa.gov>

Subject: Re: [EXTERNAL] Press inquiry

Hi,

This is really compelling stuff! I know Kevin Knuth relatively well. I've interviewed him a few times for articles in the past. I would love to do a follow up piece with you concerning technosignatures in our solar system.

I'll read your 2011 paper. Is there anything you are working on now that you could discuss for the purpose of an article on this subject?

MJ

On Mon, Dec 14, 2020 at 9:29 PM Kopparapu, Ravi Kumar (GSFC-6990)

<ravikumar.kopparapu@nasa.gov> wrote:

Hi Banias,

My own research on Technosignatures looks for pollution in the atmosphere of a planet that future NASA missions can detect remotely. For example, I have a paper in review right now that looks at Nitrogen Dioxide (NO₂) as a technosignature, because on Earth NO₂ is produced by combustion and industrial activity. During the current Pandemic, NO₂ levels dropped over urban areas around the globe, so I thought that maybe we should figure out if we can detect such signatures with a [telescope like LUVOIR](#) on exoplanets and see if we can find any signs of industrial activity. The paper should be accepted soon.

The other area that I am personally interested and worked intermittently is the idea of non-terrestrial artifacts in our Solar System. [I wrote a paper](#) with my colleague Jacob Haqq-Misra from Blue Marble Space Institute of Science. In general, I am involved several Technosignature activities. I organize a technosignature seminar series inviting distinguished academics to give talks. These [talks are recorded](#) are available publicly on our NASA SEEC website. NASA also has a Technosignature working group, which I am part of, where interested researchers come together to think about possible Technosignatures and how to detect them.

We have also organized a Technosignature conference called ["TechnoClimes"](#), where talks are [available on youtube](#).

The field of Technosignatures has recently (in the past 2 years) picked up steam, mainly because now we have more types of technosignatures that we can look for than just radio.

Interesting times.

Best

Ravi

Ravi kumar Kopparapu
8800 Greenbelt Road
NASA Goddard Space Flight Center
Mail Code 690, Building 34
Greenbelt, MD 20771
email: ravikumar.kopparapu@nasa.gov

From: MJ Banias (b) (6)

Date: Monday, December 14, 2020 at 10:03 PM

To: "Kopparapu, Ravi Kumar (GSFC-6990)" <ravikumar.kopparapu@nasa.gov>

Subject: Re: [EXTERNAL] Press inquiry

Hi,

Thanks very much for this. I see that you are also studying technosignatures of possible life in the cosmos. What types of signatures do you look for? I know SETI looks for radio signals. What does NASA do in this regard?

Thanks,

MJ

On Mon, Dec 14, 2020 at 3:24 PM Kopparapu, Ravi Kumar (GSFC-6990)

<ravikumar.kopparapu@nasa.gov> wrote:

Hello,

Thank you for your inquiry. Liquid water is an essential ingredient for all life on Earth and this is the reason we look for signatures of water on other planets and moons. Finding liquid water does not necessarily mean we will find life, however, it provides a good starting place to look for life. Other than water, an environment also needs appropriate nutrients and chemistry that facilitates life to exist. Once we find some sort of evidence of water on a planet, our next goal is to make sure the detection is robust and keep studying the chemistry and geology of the environment. Whether we will find an evidence of life on other planets is yet to be seen by exploring other worlds.

Best

Ravi

Ravi kumar Kopparapu
8800 Greenbelt Road
NASA Goddard Space Flight Center
Mail Code 690, Building 34
Greenbelt, MD 20771
email: ravikumar.kopparapu@nasa.gov

From: MJ Banias (b) (6)
Date: Monday, December 14, 2020 at 3:14 PM
To: "Kopparapu, Ravi Kumar (GSFC-6990)" <ravikumar.kopparapu@nasa.gov>
Subject: [EXTERNAL] Press inquiry

Hi Dr. Kopparapu,

I am the editor at The Debrief, a new science and tech website. I am doing a story on Ceres and that water may be under the surface of the dwarf planet. I am looking for some expert information on the subject and quotes for an upcoming article.

Would you be willing to comment on the general interest at NASA and your personal interest concerning life in the solar system? I understand that water seems to be pretty common out there amongst those moons and dwarf planets. Do you think we will find evidence of life (outside of Earth) in our solar system in the near future? Why is this compelling for our space program?

Thanks,

MJ Banias
www.thedebrief.org

Error! Filename not specified.

From: [SixSigmaQuality](#)
To: [Ravikumar Kopparapu](#), [Research AST](#), [Planetary Studies](#), [NASA](#); [Jacob Haqq-Misra](#); [Sanjoy Som](#); [Shiladitya DasSarma](#); [Rakesh Mogul](#); [Preeti Nema](#); [Mrinalini Nikrad](#); [Siddharth Pandey](#); [Sukrit Ranjan](#); [Parag Vaishampayan](#); [Kopparapu, Ravi Kumar \(GSFC-6990\)](#)
Subject: [EXTERNAL] Mystery of UFOs Unraveled
Date: Wednesday, December 23, 2020 11:45:27 AM
Attachments: [PHOTOGRAPHS FROM PROGRAMS.pdf](#)

Dear Ravikumar, Jacob,

I have enjoyed reading your interesting article, "Unidentified Aerial Phenomena,' Better Known as UFOs, Deserve Scientific Investigation" in Scientific American, July 27, 2020.

Kindly check out the blog, <https://ufomysterysolved.wordpress.com/>. I am copying your Indian associates at Blue Marble on this communication and sending it to the two Indian research scholars as well.

I have made a presentation on the scientific framework for world transformation referenced in the blog in several countries including the Office of the Indian Prime Minister and the Parliament of Peru always to enthusiastic audiences.

Warm regards. I welcome your reactions.
Pradeep

--

With the blessings of HH Gurumahan

--

Dr. Pradeep B. Deshpande, President and CEO
Six Sigma and Advanced Controls, Inc.
Professor Emeritus of Chemical Engineering
University of Louisville
7013 Creekton Drive
Louisville, KY 40292 A
Tel: (b) (6)

**PHOTOGRAPHS FROM PROF. DESHPANDE'S PRESENTATIONS ON SCIENTIFIC
FRAMEWORK FOR EXTERNAL AND INTERNAL EXCELLENCE TOWARD A BETTER
AND MORE PEACEFUL WORLD**



**From Left to Right - Jayaram Nagarajan, Gopi Gopikrishnan, Mrs. Mary Ann Borgeson,
President-elect National Association of Counties (NACo), USA which covers 80% of US
population, HH Gurumahan, Author, and Ravi Pillai**

See my paper, [Making America Great Again: It is Not the Red vs. Blue Thing
on Mrs. Borgeson's Facebook Page](#)



**Principal Secretary to the Prime Minister (equivalent to White House Chief of Staff), Right of
Deshpande, and his senior colleagues in the Office of the Prime Minister in Delhi January 22, 2018
(I am continuing to interact with one of their officers to show the way)**



**NITI (NATIONAL INSTITUTION FOR THE TRANSFORMATION OF INDIA) Aayog,
(Government of India's Think Tank – Planning Commission) New Delhi January 22, 2018**



**Program at All India Council for Technical Education, Government of India, New Delhi February 6, 2018
(Chairman of AICTE is to the left of Deshpande and Vice Chairman to his right)
(Engineering and management curricula come under its purview)**



Three-day Workshop at Indian Statistical Institute, Kolkata



Talk at Hiraben Nanavati Institute for Management and Research, Pune



Lecture at Gurumahan Maharishi Paranjothiar's Universal Peace Foundation to Paranjothi Yoga College students (Babu Nahata is also in picture) in Thirumurthi Hills, Tamil Nadu. Students told Gurumahan after the lecture, "We were being lethargic about getting up early in the morning for the morning meditation sessions, but now that we understand the science, we commit ourselves to be regular).



With Gurumahan. I told yoga students to be scientific yogis Gurumahan concurred.



**Six Sigma Class in the MBA Program of University of Kentucky in Athens, Greece,
February 26 – March 8, 2018.**



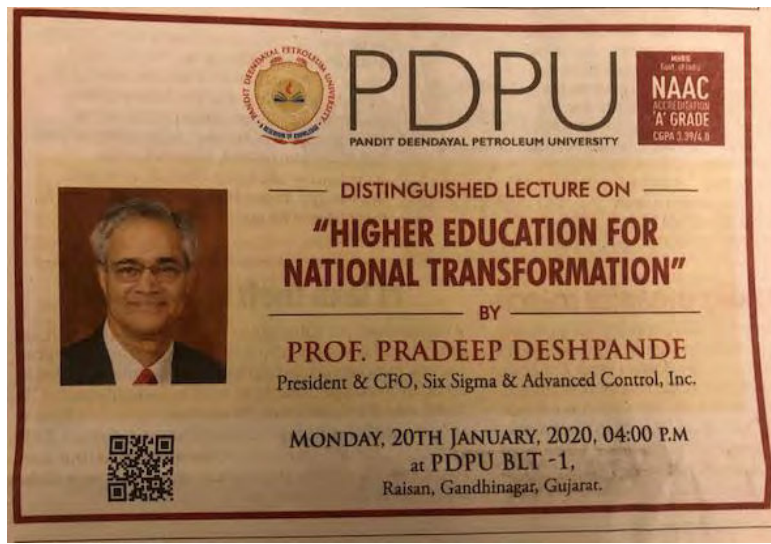
Prof. Deshpande conducted a half-day program for these Louisville-area MDs in 2017



Prof. Deshpande's talk at the Peruvian Parliament
(<https://www.youtube.com/watch?v=gV5s68-vbY0>)



Kuwait Ministry of Higher Education, Private Universities Council
Six Sigma Master Black Belt Program 2009



Pandit Deendayal Petroleum University, Gandhinagar, Gujarat January 20, 2020



Pandit Deendayal Petroleum University Senior Management



Goa Business School January 23 2020



Goa Business School Senior Management and Faculty



Department of Higher Education, Government of Goa January 23 2020



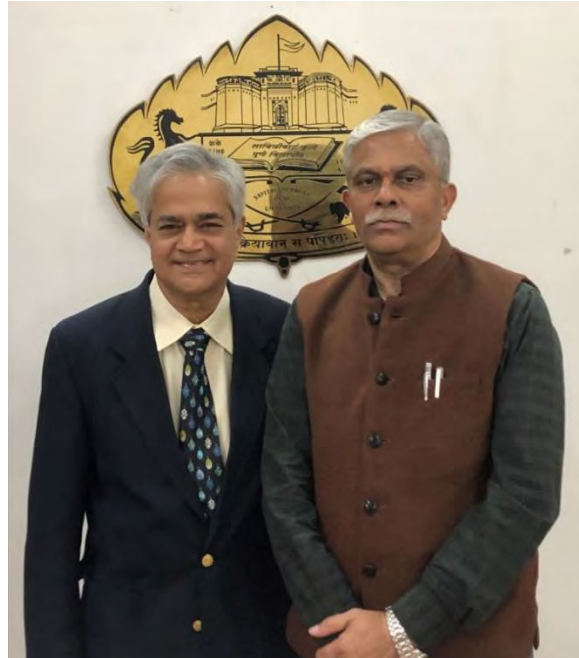
Indian Institute of Technology, Madras February 10 2020



Dr. M. Annadurai (Second from Right) former Director ISRO Satellite Center responsible for the first Lunar and Martian Mission



Mr. L. V. Navaneeth (Second from Left), CEO of the Hindu group, Chennai



**DR. Nitin R. Karmalkar, Vice Chancellor,
Savitribai Phule Pune University with author**



Savitribai Phule Pune University Faculty in the Workshop with author. Also seen in the photo is Ritesh Andre, Spokesman for Mumbai Dabbawalas (To author's left) February 22 2020

From: [Gelino, Dawn](#)
To: [Kopparapu, Ravi Kumar \(GSFC-6990\)](#)
Subject: Re: [EXTERNAL] Press Inquiry The Debrief
Date: Thursday, January 28, 2021 8:40:37 PM

Thanks Ravi! I'm sending it now.

Dr. Dawn M. Gelino
Deputy Director, NASA Exoplanet Science Institute
NASA Hubble Fellowship Program Co-Lead
NExSS Co-Lead
AAS Legacy Fellow

Caltech/IPAC
Mail Code MR-100, Pasadena CA 91125

(b) (6)

She/Her/Hers

From: "Kopparapu, Ravi Kumar (GSFC-6990)" <ravikumar.kopparapu@nasa.gov>
Date: Thursday, January 28, 2021 at 5:34 PM
To: "dawn.gelino (b) (6)" <dawn.gelino (b) (6)>, "dawn.gelino (b) (6)" <dawn.gelino (b) (6)>, Jason Wright (b) (6), Jacob Haqq Misra (b) (6)
Subject: Re: [EXTERNAL] Press Inquiry The Debrief

Great! Perfect!

From: "Gelino, Dawn" (b) (6)
Date: Thursday, January 28, 2021 at 8:31 PM
To: "Kopparapu, Ravi Kumar (GSFC-6990)" <ravikumar.kopparapu@nasa.gov>, "Gelino, Dawn M (JPL-7910)[CalTech]" (b) (6), Jason Wright (b) (6), Jacob Haqq Misra (b) (6)
Subject: Re: [EXTERNAL] Press Inquiry The Debrief

This is what I am sending in the next few minutes:

No, UFOs are not evidence of alien technosignatures. The 'U' stands for unidentified, meaning that we don't know what it is. We have not confirmed that UFOs are technology, let alone where they are from. The search for technosignatures is a rigorous and systematic scientific endeavor, not a guessing game or wishful thinking. I do think that this universe is too big for Earth to be the only planet to have life, but we need concrete, verifiable data before we can say that something is a true technosignature from another planet.

If you have any comments in the next few minutes, I'm all ears!

Thanks,
Dawn

Dr. Dawn M. Gelino

Deputy Director, NASA Exoplanet Science Institute
NASA Hubble Fellowship Program Co-Lead
NExSS Co-Lead
AAS Legacy Fellow

Caltech/IPAC
Mail Code MR-100, Pasadena CA 91125

(b) (6)

She/Her/Hers

From: "Kopparapu, Ravi Kumar (GSFC-6990)" <ravikumar.kopparapu@nasa.gov>

Date: Thursday, January 28, 2021 at 5:07 PM

To: "dawn.gelino (b) (6)" <dawn.gelino (b) (6)>

Subject: Re: [EXTERNAL] Press Inquiry The Debrief

Don't worry about me getting into trouble. It is not going to happen (yet). I would be greatly ... grateful if you can convey the message even if you want to use the words. The funny thing is, I [wrote an article](#) about scientific investigation into UFOs in Scientific American few months back with my bosses approval. So this is really silly that they are doing it for one or two sentences on an obscure site that perhaps will be noticed by very few.

From: "Gelino, Dawn" (b) (6)

Date: Thursday, January 28, 2021 at 8:02 PM

To: "Kopparapu, Ravi Kumar (GSFC-6990)" <ravikumar.kopparapu@nasa.gov>

Subject: Re: [EXTERNAL] Press Inquiry The Debrief

Thanks Ravi! I'll modify it, since HQ has seen it, and I don't want you getting in trouble in case they recognize it!

Actually, I have no idea if I'm too late to give MJ something to use or not, so it may never see the light of day at this point.

Good luck with HQ Comms!

-Dawn

Dr. Dawn M. Gelino

Deputy Director, NASA Exoplanet Science Institute
NASA Hubble Fellowship Program Co-Lead
NExSS Co-Lead
AAS Legacy Fellow

Caltech/IPAC

Mail Code MR-100, Pasadena CA 91125

(b) (6)

She/Her/Hers

From: "Kopparapu, Ravi Kumar (GSFC-6990)" <ravikumar.kopparapu@nasa.gov>

Date: Thursday, January 28, 2021 at 4:45 PM

To: "dawn.gelino@ (b) (6)" <dawn.gelino (b) (6)"dawn.gelino (b) (6)"
<dawn.gelino (b) (6)"

Subject: Re: [EXTERNAL] Press Inquiry The Debrief

Hi Dawn,

Please go ahead and use my response anyway you want.

HQ comms.....I have to see how to navigate this mess.

Ravi

From: "Gelino, Dawn" (b) (6)

Date: Thursday, January 28, 2021 at 6:52 PM

To: "Kopparapu, Ravi Kumar (GSFC-6990)" <ravikumar.kopparapu@nasa.gov>, "Gelino, Dawn M (JPL-7910)[CalTech]" (b) (6)

Subject: Re: [EXTERNAL] Press Inquiry The Debrief

Hi Ravi, (to you only)

I completely agree with your frustration. I think (b) (5)

(b) (5)

Thanks,
Dawn

Dr. Dawn M. Gelino
Deputy Director, NASA Exoplanet Science Institute
NASA Hubble Fellowship Program Co-Lead
NExSS Co-Lead
AAS Legacy Fellow

Caltech/IPAC
Mail Code MR-100, Pasadena CA 91125

(b) (6)

She/Her/Hers

From: "Kopparapu, Ravi Kumar (GSFC-6990)" <ravikumar.kopparapu@nasa.gov>

Date: Thursday, January 28, 2021 at 12:44 PM

To: "Andreoli, Claire (GSFC-1300)" <claire.andreoli@nasa.gov>, "dawn.gelino (b) (6)" <dawn.gelino (b) (6)>

Subject: Re: [EXTERNAL] Press Inquiry The Debrief

Hi Claire,

Thank you for working on this, I really do appreciate. (b) (5)

(b) (5)

To say this is (b) (5)

(b) (5)

My sincerest thank you to you for working on my behalf. Thank you so much.

Best

Ravi

From: "Andreoli, Claire (GSFC-1300)" <claire.andreoli@nasa.gov>

Date: Thursday, January 28, 2021 at 3:29 PM

To: "Kopparapu, Ravi Kumar (GSFC-6990)" <ravikumar.kopparapu@nasa.gov>, "Gelino, Dawn M (JPL-7910)[CalTech]" <dawn.gelino (b) (6)>

Subject: Re: [EXTERNAL] Press Inquiry The Debrief

Hi Ravi,

I've finally heard back from NASA HQ on this. (b) (5)

(b) (5)

speaking on behalf of NASA on the subject:

One of NASA's key goals is the search for life in the universe. Although we have yet to find signs of extraterrestrial life, NASA is exploring the solar system and beyond to help us answer fundamental questions, including whether we are alone in the universe. From studying water on Mars, probing promising "oceans worlds," such as Enceladus and Europa, to looking for biosignatures in the atmospheres of planets outside our solar system, NASA's science missions are working together with

a goal to find unmistakable signs of life beyond Earth.

Based on this, the above response is what you should use when replying to this inquiry (or any other queries that ask you to comment on the subject as a NASA representative). I was pushing for a

(b) (5)

I'm sorry I can't help you come up with something more tailored to a particular media request, but this is the agency's final word on speaking publicly on this particular topic. Please let me know if you have any questions!

Thanks,
Claire

--

Claire Andreoli
NASA's Goddard Space Flight Center
Office of Communications
office: (301) 286 1940
cell: (b) (6)
claire.andreoli@nasa.gov

From: "Kopparapu, Ravi Kumar (GSFC-6990)" <ravikumar.kopparapu@nasa.gov>
Date: Wednesday, January 27, 2021 at 5:01 PM
To: "Gelino, Dawn M (JPL-7910)[CalTech]" <dawn.gelino@jpl.nasa.gov>, (b) (6) "Andreoli, Claire (GSFC-1300)" <claire.andreoli@nasa.gov>
Cc: "Gelino, Dawn M (JPL-7910)[CalTech]" <dawn.gelino@jpl.nasa.gov>, (b) (6)
Subject: Re: [EXTERNAL] Press Inquiry The Debrief

Hi Dawn,

Jacob may have a press team that may have different approval procedures than NASA. I do agree

(b) (5)

Ravi

From: "Gelino, Dawn" (b) (6)
Date: Wednesday, January 27, 2021 at 4:58 PM
To: "Kopparapu, Ravi Kumar (GSFC-6990)" <ravikumar.kopparapu@nasa.gov>, "Andreoli, Claire (GSFC-1300)" <claire.andreoli@nasa.gov>

Cc: "Gelino, Dawn M (JPL-7910)[CalTech]" <dawn.gelino@caltech.edu> (b) (6)

Subject: Re: [EXTERNAL] Press Inquiry The Debrief

Thanks Ravi! I was thinking along the same lines. Maybe if (b) (5)
(b) (5)

Thanks,
Dawn

Dr. Dawn M. Gelino

Deputy Director, NASA Exoplanet Science Institute

NASA Hubble Fellowship Program Co-Lead

NExSS Co-Lead

AAS Legacy Fellow

Caltech/IPAC

Mail Code MR-100, Pasadena CA 91125

(b) (6)

She/Her/Hers

From: "Kopparapu, Ravi Kumar (GSFC-6990)" <ravikumar.kopparapu@nasa.gov>

Date: Wednesday, January 27, 2021 at 1:32 PM

To: "Andreoli, Claire (GSFC-1300)" <claire.andreoli@nasa.gov>

Cc: "dawn.gelino@caltech.edu" (b) (6) <dawn.gelino@caltech.edu> (b) (6)

Subject: FW: [EXTERNAL] Press Inquiry The Debrief

Hi Claire, (and Dawn)

How is this response for this email?

(b) (5)

From: MJ Banias (b) (6)

Date: Wednesday, January 27, 2021 at 3:47 PM

To: "Kopparapu, Ravi Kumar (GSFC-6990)" <ravikumar.kopparapu@nasa.gov>

Subject: [EXTERNAL] Press Inquiry The Debrief

Hi Ravi,

I hope you are well. We just ran a SETI week at The Debrief all about exoplanets, technosignatures,

the James Webb Telescope, etc and we are wrapping it all up with a fun weekend piece entitled, "We Asked Ten Experts If UFOs Are Evidence of Alien Technosignatures."

I'd love to get a collection of short responses (a couple sentences to a paragraph) from various experts and researchers across NASA, SETI, and various universities to get their thoughts. Feel free to be tongue in cheek, glib, honest, or worse!

Thanks for your time,

MJ

--

MJ Banias

Editor-in-Chief | The Debrief Media

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www.TheDebrief.org



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From: [Jason Wright](#)
To: [Gelino, Dawn](#); [Gelino, Dawn M. \(JPL-7910\)\[CalTech\]](#)
Cc: [Gelino, Dawn M. \(JPL-7910\)\[CalTech\]](#); [Jacob Haqq Misra](#); [Kopparapu, Ravi Kumar \(GSFC-6990\)](#)
Subject: Re: [EXTERNAL] Press Inquiry The Debrief
Date: Thursday, January 28, 2021 8:42:05 PM

Looks good to me!

Jason

On Thu, Jan 28, 2021 at 8:31 PM Gelino, Dawn (b) (6) wrote:

This is what I am sending in the next few minutes:

No, UFOs are not evidence of alien technosignatures. The 'U' stands for unidentified, meaning that we don't know what it is. We have not confirmed that UFOs are technology, let alone where they are from. The search for technosignatures is a rigorous and systematic scientific endeavor, not a guessing game or wishful thinking. I do think that this universe is too big for Earth to be the only planet to have life, but we need concrete, verifiable data before we can say that something is a true technosignature from another planet.

If you have any comments in the next few minutes, I'm all ears!

Thanks,

Dawn

Dr. Dawn M. Gelino
Deputy Director, NASA Exoplanet Science Institute

NASA Hubble Fellowship Program Co-Lead

NExSS Co-Lead

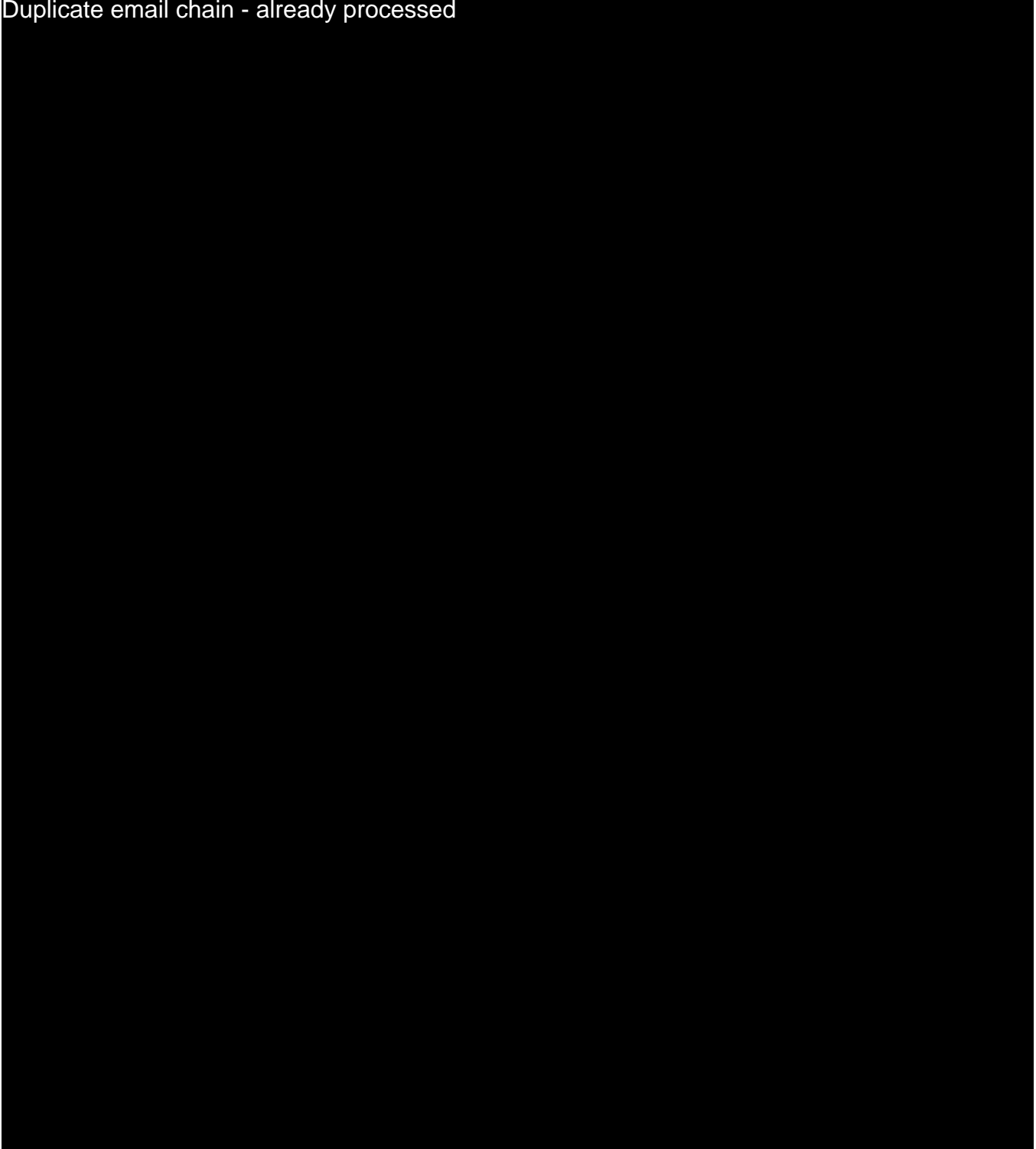
AAS Legacy Fellow

Caltech/IPAC
Mail Code MR-100, Pasadena CA 91125

(b) (6)
She/Her/Hers

From: "Kopparapu, Ravi Kumar (GSFC-6990)" <ravikumar.kopparapu@nasa.gov>
Date: Thursday, January 28, 2021 at 5:07 PM
To: "dawn.gelino@jpl.nasa.gov" <dawn.gelino@jpl.nasa.gov>
Subject: Re: [EXTERNAL] Press Inquiry The Debrief

Duplicate email chain - already processed



Deletion Page

Requester: John Greenewald

Request #: 21-HQ-F-00603

8 page(s) containing duplicate information is/are held in the file.

From: [Gelino, Dawn](#)
To: [Kopparapu, Ravi Kumar \(GSFC-6990\)](#); [Jason Wright](#); [Jacob Haqq Misra](#)
Subject: [EXTERNAL] FW: Press Inquiry The Debrief
Date: Thursday, January 28, 2021 10:38:35 PM

Oh boy, I may have stepped in something I didn't want to... I may ask you all for help if MJ asks me more questions!

Dr. Dawn M. Gelino

Deputy Director, NASA Exoplanet Science Institute
NASA Hubble Fellowship Program Co-Lead
NExSS Co-Lead
AAS Legacy Fellow

Caltech/IPAC
Mail Code MR-100, Pasadena CA 91125

(b) (6)

She/Her/Hers

From: MJ Baniya (b) (6)
Date: Thursday, January 28, 2021 at 6:45 PM
To: Dawn Gelino (b) (6)
Subject: Re: Press Inquiry The Debrief

Hi,

See- it is great you said that.

Because that may actually be a better story. I may scrap this UFO thing to cover that instead. The Debrief is a fan of technosignature research. Last thing we want is to harm it.

Give me a day, but I may reach out again for more on this.

Thanks!

MJ

On Thu, Jan 28, 2021 at 8:02 PM Gelino, Dawn (b) (6) wrote:

You could try Adam Frank (b) (6)

(Please don't print this!)

I'm guessing that people are not responding because the title may very well add to the "giggle factor" surrounding the study of technosignatures. We are fighting hard against that right now so funding agencies and the public alike will take the field seriously.

I only replied, against my better judgement, so I could try to get the message across that looking for technosignatures is actual science and not science fiction.

Dr. Dawn M. Gelino

Deputy Director, NASA Exoplanet Science Institute
NASA Hubble Fellowship Program Co-Lead
NExSS Co-Lead
AAS Legacy Fellow

Caltech/IPAC
Mail Code MR-100, Pasadena CA 91125

(b) (6)

She/Her/Hers

From: MJ Banias (b) (6)
Date: Thursday, January 28, 2021 at 5:51 PM
To: Dawn Gelino (b) (6)
Subject: Re: Press Inquiry The Debrief

Hi,

I've had only a couple responses, so the spirit of the article will remain, but the number those involved may be reduced. Do you have any colleagues who may want to jump in?

I've already asked Jacob and he's provided a response. Ravi has not yet responded.

Thanks,

MJ

On Thu, Jan 28, 2021 at 7:45 PM Gelino, Dawn (b) (6) wrote:

Great. Could you please send me the link to the page when it goes live?

Thanks,
Dawn

Dr. Dawn M. Gelino

Deputy Director, NASA Exoplanet Science Institute
NASA Hubble Fellowship Program Co-Lead
NExSS Co-Lead
AAS Legacy Fellow

Caltech/IPAC
Mail Code MR-100, Pasadena CA 91125

(b) (6)

She/Her/Hers

From: MJ Banias (b) (6)
Date: Thursday, January 28, 2021 at 5:44 PM
To: Dawn Gelino (b) (6)
Subject: Re: Press Inquiry The Debrief

Error! Filename not specified.

Hi,

Perfect!

Thank you!

MJ

--

Sent from [Canary](#)

On Thursday, Jan 28, 2021 at 7:40 PM, Gelino Dawn (b) (6) wrote:

Hi MJ,

Here are my thoughts, I hope it's not too late:

No, UFOs are not evidence of alien technosignatures. The 'U' stands for unidentified, meaning that we don't know what it is. We have not confirmed that UFOs are technology, let alone where they are from. The search for technosignatures is a rigorous and systematic scientific endeavor, not a guessing game or wishful thinking. I do think that this universe is too big for Earth to be the only planet to have life, but we need concrete, verifiable data before we can say that something is a true technosignature from another planet.

Thanks,
Dawn

Dr. Dawn M. Gelino
Deputy Director, NASA Exoplanet Science Institute
NASA Hubble Fellowship Program Co-Lead
NExSS Co-Lead
AAS Legacy Fellow

Caltech/IPAC
Mail Code MR-100, Pasadena CA 91125

(b) (6)

She/Her/Hers

From: MJ Banias (b) (6)

Date: Wednesday, January 27, 2021 at 12:52 PM

To: Dawn Gelino (b) (6)

Subject: Press Inquiry The Debrief

Hi Dawn,

I hope you are well. We just ran a SETI week at The Debrief all about exoplanets, technosignatures, the James Webb Telescope, etc and we are wrapping it all up with a fun weekend piece entitled, "We Asked Ten Experts If UFOs Are Evidence of Alien Technosignatures."

I'd love to get a collection of short responses (a couple sentences to a paragraph) from various experts and researchers across NASA, SETI, and various universities to get their thoughts. Feel free to be tongue in cheek, glib, honest, or worse!

Thanks for your time,

MJ

From: [MJ Banias](#)
To: [Kopparapu, Ravi Kumar \(GSFC-6990\)](#)
Subject: Re: [EXTERNAL] Press Inquiry The Debrief
Date: Friday, January 29, 2021 8:43:35 AM

Hi,

I said the same thing to Dawn.

I think I will scrap this UFO piece and change focus to the taboo.

Thanks for your quote. I'll keep you, Dawn and Jacob looped in.

MJ

--

Sent from [Canary](#)

On Friday, Jan 29, 2021 at 7:08 AM, Kopparapu Ravi Kumar (GSFC-6990) <ravikumar.kopparapu@nasa.gov> wrote:

MJ,

I can speak more freely about Technosignature research as there are several NASA initiatives. The field of Technosignatures has advanced a great deal since last 3 years and there is kind of a renaissance in this field, particularly with the exoplanet discoveries. There has been historic taboo against the scientific research of technosignatures, so I would be more than happy to chip away that taboo. It will be better for the field.

Ravi

From: MJ Banias (b) (6)
Date: Thursday, January 28, 2021 at 11:42 PM
To: "Kopparapu, Ravi Kumar (GSFC-6990)" <ravikumar.kopparapu@nasa.gov>
Subject: Re: [EXTERNAL] Press Inquiry The Debrief



Hi Ravi,

Thank you very much!

MJ

--

Sent from [Canary](#)

On Thursday, Jan 28, 2021 at 9:12 PM, Kopparapu Ravi Kumar (GSFC-6990) <ravikumar.kopparapu@nasa.gov> wrote:

Hi MJ,

Apologies for delay in my reply. As to your question, I was approved to respond with the below message. As a scientist (NASA or not), I also agree with the responses that Dawn Gelino and Jacob Haqq-Misra will (or already) sent to you.

One of NASA's key goals is the search for life in the universe. Although we have yet to find signs of extraterrestrial life, NASA is exploring the solar system and beyond to help us answer fundamental questions, including whether we are alone in the universe. From studying water on Mars, probing promising "oceans worlds," such as Enceladus and Europa, to looking for biosignatures in the atmospheres of planets outside our solar system, NASA's science missions are working together with a goal to find unmistakable signs of life beyond Earth.

Best

Ravi

From: MJ Banias (b) (6)
Date: Wednesday, January 27, 2021 at 3:47 PM
To: "Kopparapu, Ravi Kumar (GSFC-6990)" <ravikumar.kopparapu@nasa.gov>

Subject: [EXTERNAL] Press Inquiry The Debrief

Hi Ravi,

I hope you are well. We just ran a SETI week at The Debrief all about exoplanets, technosignatures, the James Webb Telescope, etc and we are wrapping it all up with a fun weekend piece entitled, "We Asked Ten Experts If UFOs Are Evidence of Alien Technosignatures."

I'd love to get a collection of short responses (a couple sentences to a paragraph) from various experts and researchers across NASA, SETI, and various universities to get their thoughts. Feel free to be tongue in cheek, glib, honest, or worse!

Thanks for your time,

MJ

--

MJ Baniyas

Editor-in-Chief | The Debrief Media

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From: [Kopparapu, Ravi Kumar \(GSFC-6990\)](#)
To: (b) (6)
Subject: Re: [EXTERNAL] Leonard David FYI: UAP story - SKY HUB
Date: Tuesday, February 2, 2021 5:31:16 PM

Hi Leonard,

I have heard about Skyhub but do not know much about them. I guess doing these equipment placement is one way to track them, but need to be consistent (using same equipment/calibration methods). I have no insightful thoughts here.

Best

Ravi

From: (b) (6)
Reply-To: (b) (6)
Date: Tuesday, February 2, 2021 at 1:29 PM
To: "Kopparapu, Ravi Kumar (GSFC-6990)" <ravikumar.kopparapu@nasa.gov>, (b) (6)
Subject: [EXTERNAL] Leonard David FYI: UAP story - SKY HUB

Ravi: I am working on a story regarding Sky Hub - Do-it-yourself UAP detection gear.

Any on the record thoughts about the validity of such a concept? If my memory is still glued together, there's been a number of such ideas over the decades about placing equipment here and there to detect UFOs.

I'll be working on this for a bit of time, into early next week. So any views I can use?

Here's the Sky Hub website:

<https://skyhub.org/>

-----Original Message-----

From: Kopparapu, Ravi Kumar (GSFC-6990) <ravikumar.kopparapu@nasa.gov>
To: (b) (6)
Sent: Tue, Oct 13, 2020 6:24 am
Subject: Re: [EXTERNAL] Leonard David FYI: UAP story - thanks for your assist!

Thanks! Nice article.

Ravi kumar Kopparapu
8800 Greenbelt Road
NASA Goddard Space Flight Center
Mail Code 690, Building 34
Greenbelt, MD 20771
email: ravikumar.kopparapu@nasa.gov

Ph: (b) (6)

From: (b) (6)

Reply-To: (b) (6)

Date: Monday, October 12, 2020 at 9:25 AM

To: "Kopparapu, Ravi Kumar (GSFC-6990)" <ravikumar.kopparapu@nasa.gov>

Subject: [EXTERNAL] Leonard David FYI: UAP story - thanks for your assist!

Scientists call for serious study of 'unidentified aerial phenomena'

You don't have to be an alien truther to be curious about recent UAP events.

<https://www.space.com/unidentified-aerial-phenomena-scientific-scrutiny>

From: brigitte
To: (b) (6) (b) (6) (b) (6)
william.a.steigerwald@nasa.gov (b) (6) [Kopparapu, Ravi Kumar \(GSFC-6990\)](#); [Andreoli, Claire \(GSFC-1300\)](#); [Steigerwald, William A. \(GSFC-1300\)](#)
Subject: [EXTERNAL] The search for ET/To find an ET Civilization.../Alien life is out there.../ Could invisible aliens really exist among us?.../
Date: Monday, March 1, 2021 7:41:09 PM

Dear everyone –

Is there any way you could switch to publishing accurate information?

I am really starting to be concerned about the load of guilt one must be experiencing as a result of suppressing the truth which is easily found here:

<https://theyflyblog.com/2021/02/how-the-black-vault-locks-out-the-ufo-truth/>

Compare the link above with those below and you will clearly see that we have had the answers to the question of ET for 70 years now.

<https://amp.economist.com/leaders/2021/02/13/the-search-for-et-may-soon-yield-an-answer>
<https://www.nasa.gov/press-release/goddard/2021/technosignature>
<https://theconversation.com/alien-life-is-out-there-but-our-theories-are-probably-steering-us-away-from-it-124042>
<https://theconversation.com/amp/could-invisible-aliens-really-exist-among-us-an-astrobiologist-explains-129419>

I look forward to reading a real well researched article now that you have in your possession all the complete and accurate information.

Kind regards,

Brigitte de Roch
Executive Director



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translation reviewed by a qualified representative prior to inlingua delivering the final product.

From: [Jack Sliwa](#)
To: ravikumar.kopparapu@nasa.gov; (b) (6); [Kopparapu, Ravi Kumar \(GSFC-6990\)](#); [Haqq-Misra, Jacob D. \(GSFC-6062\)\[Science Collaborator\]](#)
Subject: [EXTERNAL] Physics based explanations of several uap behaviors-supporting uap reality
Date: Sunday, March 21, 2021 3:59:58 PM

Gentlemen-please take a look at my small personal website at uapbehavior.com

There you will find physics-based explanations for several uap behaviors including which nobody has ever explained in a testable manner

- a) angel hair-seen for centuries
- b) falling leaf uap motion (and pendulum motions)
- c) uap silence
- d) metallics dropped from uap interiors
- e) slags dropped from uap exteriors

Im a 40 year Silicon Valley technologist with hundreds of patents recently retired so I can pursue this publicly. Bio on website.

Im not an enthusiast, im not writing a book, I don't sell anything and I don't have a blog or website members.

Just a Technologist giving provable explanations based on known physics and technology

Jack Sliwa

(b) (6) (personal email)

From: [Micah Hanks](#)
To: [Kopparapu, Ravi Kumar \(GSFC-6990\)](#)
Subject: Re: [EXTERNAL] Media Query: Future missions to search for technosignatures
Date: Tuesday, March 23, 2021 9:26:05 PM

Hi Ravi,

Thank you, sincerely, for these detailed responses. It is a delight to be able to glean a bit of additional insight from you on these topics, and especially the ever-evolving UAP situation.

It is my sincere hope that, in the future, scientists like yourself will be able to lead in this emergent discipline of technosignature detection and evaluation, which may even be set to become the new scientific area that will replace more traditional research methods applied toward the study of UAP from over the last several decades. Prospective studies involving extant data available to the research community (i.e. NASA's Earthdata, imagery from the Lunar Reconnaissance Orbiter and similar sources of imagery, etc) may indeed end up yielding fruit; one might hope so, at least.

Please don't hesitate to reach out if there's ever anything I can do to assist anything you're working on, including reporting and media coverage (or just generally spreading the word) on research and studies you and your colleagues may publish in the future. I have great respect for your work, and will continue to follow it in the days ahead.

All the best,

Micah Hanks

Science and Tech Reporter | Co-Founder

[The Debrief](#) | thedebrief.org

(b) (6)

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On Mar 23, 2021, at 5:16 PM, Kopparapu, Ravi Kumar (GSFC-6990)
<ravikumar.kopparapu@nasa.gov> wrote:

Hi Micah,

Thank you for your email. My responses are below.

1. You and your coauthors outline a variety of unique new methods of searching for possible technosignatures in the recent paper. In your opinion, what are the most promising that you and your coauthors have looked at, and how might they

succeed where past efforts (i.e. radio astronomy, etc) have failed?

----- I would frame my answer a bit differently based on what is available now and what facilities will be available in the near future. Essentially, what kind of detection methods and telescopes are upcoming that we can use, other than radio searches, to look for technosignatures on other planets? We have James Webb Space Telescope (JWST) to be launched in this year that could look at the atmospheres of exoplanets. We also have next generation space telescope mission concept studies like LUVOIR, HabEX and OST that look at the atmospheres of exoplanets to find signs of life. We could use the same telescopes for identifying technosignatures in the atmospheres of distant worlds. So the question of what are the most promising methods boils down to what are we going to have access to in the near-term. And because the above mentioned telescopes are the ones we will have access to, it makes sense to use those to look for technosignatures. Radio searches can (and should) continue. If we do detect a radio signal that is confirmed to be not-natural, and not-from Earth then things get interesting.

2. How likely is it that high-resolution scanning of the lunar surface may facilitate searches for technosignatures or other events indicative of them much closer to home than most astronomers would expect?

---- It is certainly possible and I would even say to look at the near-Earth orbit for any anomalous signature that appears at odds with our expectation or doesn't fit the known data. Just like we are sending probes (like Voyager and pioneer spacecrafts) beyond our solar system, it is quite possible that other technological civilizations will do the same. We are not unique in that sense. Jacob and I have [written a paper](#) about it in 2012. I think looking around our Earth's surroundings (including the Moon) is very worthwhile to see if we find any unusual signatures or phenomena.

3. What might be the best way to carry out the search for what have been termed "lurkers" representing technosignatures detectable on asteroids?

----- I think radio searches (either reflection from surfaces, or 'listening' to see if they transmit) could be one way. May be albedo differences (reflected light from the surfaces of objects on asteroids and see if they are consistent with the light reflected from the asteroid itself) is another method. May be monitoring velocities could be another one but it will be hard to distinguish which one is a natural asteroid and which one is not.

4. Having read and enjoyed your *Scientific American* article co-authored with Jacob Haqq-Misra last summer, do you feel that similar efforts toward detection of technosignatures might be conducted not only in space, on asteroids, and the moon, but here on Earth as well? If so, is it possible (in your view) that some instances of purported unidentified aerial phenomena might be representative of such technosignatures, and worthy of study as such?

-----Ok, there are two parts to this question. First, let me address the technosignature search on Earth. If there was a civilization on Earth in the past

millions of years ago, before our own civilization, then apparently any remnants of that civilization might be difficult to distinguish from geological features. In fact, Gavin Schmidt (director of NASA GISS, and the newly appointed 'senior climate advisor' for the Biden administration) studied this exact problem. I invited Gavin for a [technosignature seminar](#) that I organize at Goddard. [Here is the recording.](#)

As to the question of UAP, I truly do not know as to how and what to categorize them. Our thinking of technosignatures is to look for evidence of technology from civilizations that are not from humans. We use conventional techniques like telescopes, and extrapolate from our own civilization's advancement to imagine what *could* an advanced civilization signature may look like. And then we try to search for such signatures. This is all based on our understanding of the world around us and known laws of physics.

Confirmed UAP completely defy any reasonable imagination that we could have. I would not categorize them, at this point, as technosignatures because there is no evidence that I know of that could indicate that they are from a technological civilization. "What else could they be?" is not a scientific explanation. We need hard evidence. And to collect hard evidence, we need systematic collection of data on UAP, or access to data that may have already been collected. I cannot stress enough how important it is to have the data available to scientists to know what they are. Without access to proper data, un-substantiated hypotheses and conspiracy theories take the vacuum created by the lack of a *Science based* hypothesis. I equate this with superstitions we have had over the centuries until Science replaced them. UAP are real and they exist. Many of them we see in our skies. Some may have perfectly sensible explanations, but not all of them can be explained away. That kind of thinking is not scientific. As a scientist, It is just baffling to me that they exhibit characteristics that we do not understand, and we are not paying attention to it. They are absolutely worthy of a scientific study, probably one of the most interesting studies. We have done that in the U.S few decades ago. Other countries also studied them so it is not U.S specific. We need data on them and any collected data made available. There is no other way to say it.

Best
Ravi

From: Micah Hanks (b) (6)

Date: Tuesday, March 23, 2021 at 2:30 PM

To: "Kopparapu, Ravi Kumar (GSFC-6990)" <ravikumar.kopparapu@nasa.gov>

Subject: [EXTERNAL] Media Query: Future missions to search for technosignatures

Dear Dr. Kopparapu,

My name is Micah Hanks, and I am a science and tech writer for thedebrief.org. I hope this message finds you well.

Having recently written to your colleague Jacob Haqq-Misra as well, I wanted to write to you as well since I am very interested in the recent paper the two of you were co-authors on, "Concepts for future missions to search for technosignatures."

Though I am certain that you have plenty going on, I wondered if it were possible to ask you a few brief questions about this paper and the research you and your coauthors have been doing?

1. You and your coauthors outline a variety of unique new methods of searching for possible technosignatures in the recent paper. In your opinion, what are the most promising that you and your coauthors have looked at, and how might they succeed where past efforts (i.e. radio astronomy, etc) have failed?
2. How likely is it that high-resolution scanning of the lunar surface may facilitate searches for technosignatures or other events indicative of them much closer to home than most astronomers would expect?
3. What might be the best way to carry out the search for what have been termed "lurkers" representing technosignatures detectable on asteroids?
4. Having read and enjoyed your *Scientific American* article co-authored with Jacob Haqq-Misra last summer, do you feel that similar efforts toward detection of technosignatures might be conducted not only in space, on asteroids, and the moon, but here on Earth as well? If so, is it possible (in your view) that some instances of purported unidentified aerial phenomena might be representative of such technosignatures, and worthy of study as such?

If you have time and/or interest in helping with these questions, I would be very grateful... and in any case, thank you for the fine work that you, Jacob, and your colleagues are doing in this field. It is much needed, and very appreciated.

Respectfully,

Micah Hanks

Science and Tech Reporter | Co-Founder

[The Debrief](http://TheDebrief.com) | thedebrief.org

(b) (6)

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strictly prohibited.

From: [Kopparapu, Ravi Kumar \(GSFC-6990\)](#)
To: [Andreoli, Claire \(GSFC-1300\)](#)
Subject: Re: [EXTERNAL] Media Query: Future missions to search for technosignatures
Date: Wednesday, March 24, 2021 4:28:27 PM

Ok will do.

From: "Andreoli, Claire (GSFC-1300)" <claire.andreoli@nasa.gov>
Date: Wednesday, March 24, 2021 at 4:21 PM
To: "Kopparapu, Ravi Kumar (GSFC-6990)" <ravikumar.kopparapu@nasa.gov>
Subject: Re: [EXTERNAL] Media Query: Future missions to search for technosignatures

Thanks, Ravi. Do you mind copying Nancy Neal-Jones as well on these requests moving forward? She's the PAO for code 690, so she's the one who should really be aware of the requests you're fielding.


Claire

--

Claire Andreoli
NASA's Goddard Space Flight Center
Office of Communications
office: (301) 286 1940
cell: (b) (6)
claire.andreoli@nasa.gov

From: "Kopparapu, Ravi Kumar (GSFC-6990)" <ravikumar.kopparapu@nasa.gov>
Date: Tuesday, March 23, 2021 at 5:16 PM

Duplicate email chain - already processed



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Requester: John Greenewald

Request #: 21-HQ-F-00603

3 page(s) containing duplicate information is/are held in the file.

From: [Kopparapu, Ravi Kumar \(GSFC-6990\)](#)
To: [Jones, Nancy N. \(GSFC-1300\)](#)
Cc: [Andreoli, Claire \(GSFC-1300\)](#)
Subject: FW: [EXTERNAL] Media Query: Future missions to search for technosignatures
Date: Wednesday, March 24, 2021 4:50:09 PM

Hi Nancy,

I sent the following response to a media inquiry yesterday, copying Claire. Just wanted to send you also going forward.


Best

Ravi

From: "Kopparapu, Ravi Kumar (GSFC-6990)" <ravikumar.kopparapu@nasa.gov>

Date: Tuesday, March 23, 2021 at 5:16 PM

Duplicate email chain - already processed



Deletion Page

Requester: John Greenewald

Request #: 21-HQ-F-00603

3 page(s) containing duplicate information is/are held in the file.

From: [Kopparapu, Ravi Kumar \(GSFC-6990\)](#)
To: [Claudio Maccone](#); [Haqq-Misra, Jacob D. \(GSFC-6062\)\[Science Collaborator\]](#)
Subject: Re: [EXTERNAL] The SETI DAY at the Dubai IAC will be TUESDAY, OCTOBER 26, 2021: SETI 1 = 18 accepted presentations + SETI 2 = 18 more accepted presentations.
Date: Thursday, April 1, 2021 12:21:31 PM

Hi Claudio,

Thank you. Please do not take this as a criticism, but more as a conversation opener. We really hope this generates more discussion that is based on science. We would really like to hear any scientific opinions on this matter, so hopefully that conversation can move forward.

Best

Ravi

From: Claudio Maccone (b) (6)
Date: Thursday, April 1, 2021 at 11:57 AM
To: "Kopparapu, Ravi Kumar (GSFC-6990)" <ravikumar.kopparapu@nasa.gov>, "Haqq-Misra, Jacob D. (GSFC-6062)[Science Collaborator]" (b) (6)
Cc: Claudio Maccone (b) (6)
Subject: Re: [EXTERNAL] The SETI DAY at the Dubai IAC will be TUESDAY, OCTOBER 26, 2021: SETI 1 = 18 accepted presentations + SETI 2 = 18 more accepted presentations.

Thank you, Ravi & Jacob, for your criticism.

I need more time to ponder this question over.

But I'll try to do so, hopefully before the IAC at Dubai (October 25-29, 2021).

Best,

Claudio

On 4/1/2021 3:28 PM, Kopparapu, Ravi Kumar (GSFC-6990) wrote:

Hi Claudio,

We saw your email and the statement about UFOs, in particular the reason given for the rejection of these abstracts, caught our attention. In our opinion, it would have been more preferable if the abstracts were rejected because they were "out of scope" (for ex: Why should astronomers be concerned about UFOs?) rather than "unacceptable to Astronomers as we are". This only perpetuates a taboo in the community that studying UFOs is somehow un-scientific, which is not how historically it was handled. Even as we speak, the U.S government is planning to release a report on UFOs in June, and several other countries have already studied them in some form. It is only the group taboo that is preventing people to discuss openly about UFOs.

We are also curious if you found anything un-scientific in those abstracts that you could

let us know? Perhaps we could be convinced that they are indeed not related?

We recommend an article that Jacob and I wrote last year on UFOs in Scientific American where we discuss these points. As astronomers, we should approach this issue scientifically and make sure UFO related work is scientifically evaluated.

<https://www.scientificamerican.com/article/unidentified-aerial-phenomena-better-known-as-ufos-deserve-scientific-investigation/>

Best
Ravi & Jacob

From: 'Claudio Maccone' via community (b) (6)

Reply-To: (b) (6)

Date: Thursday, April 1, 2021 at 1:22 AM

To: Community IAA SETI (b) (6)

Subject: [EXTERNAL] The SETI DAY at the Dubai IAC will be TUESDAY, OCTOBER 26, 2021: SETI 1 = 18 accepted presentations + SETI 2 = 18 more accepted presentations.

Dear SETI Supporters,

Yesterday, March 31st, was the deadline for the selecting the SETI presentations for the 2021 IAC at Dubai.

The SETI DAY at the Dubai IAC will be TUESDAY, OCTOBER 26, 2021:
SETI 1 = 18 accepted presentations in the morning + SETI 2 = 18 more accepted presentations in the afternoon.

There will be NO Interactive SETI presentations since we could fit all 36 accepted abstracts into the 36 = 18+18 scheme for both SETI 1 and SETI 2, with NO SETI IP.

Three abstracts were rejected (they were UFO-related, unacceptable to Astronomers as we are).

Thanks for your attention, best wishes and keep safe from pandemics.

Sincerely,

Claudio (Maccone)

Chair, IAA SETI Permanent Committee

--

Find the IAA SETI website at: <https://iaaseti.org>

Find the upcoming SETI meeting calendar at: <https://iaaseti.org/en/meetings/>

Code of Conduct (Interim):

<https://www.aiaa.org/about/Governance/Code-of-Ethics>

<https://www.aiaa.org/about/Governance/Anti-Harassment-Policy>

To unsubscribe from this group and stop receiving emails from it, send an email to community+unsubscribe@iaaseti.org.

From: [Kopparapu, Ravi Kumar \(GSFC-6990\)](#)
To: [Jason Wright; Eghigian, Greg](#)
Cc: [Kathryn E L Denning; \(b\) \(6\); Julia DeMarines; Chelsea Haramia; STEVEN DICK; Margaret Turnbull; Franck Marchis; Hector Socas-Navarro; Haqq-Misra, Jacob D. \(GSFC-6062\)\[Science Collaborator\]; Clément Vidal; Anamaria Berea](#)
Subject: Re: [EXTERNAL] Re: IAA PC SETI UFO text
Date: Wednesday, April 7, 2021 10:07:29 AM

Hi Jason,

Thanks for sending the link. I made some comments on the document linked below. One thing at least I felt is that the initial couple of paragraphs are needed. It comes out as broad brush and dismissive right at the beginning. My suggestion is to focus on the stance of the SETI community and why UAP are out of scope. The onus is on the UAP community to prove their relevance to SETI.

Ravi

From: Jason Wright (b) (6)
Date: Wednesday, April 7, 2021 at 9:05 AM
To: "Eghigian, Greg" <(b) (6)>
Cc: Kathryn E L Denning (b) (6); (b) (6); Julia DeMarines (b) (6); Chelsea Haramia (b) (6); STEVEN DICK (b) (6); Margaret Turnbull (b) (6); Franck Marchis (b) (6); Hector Socas-Navarro (b) (6); "Kopparapu, Ravi Kumar (GSFC-6990)" <ravikumar.kopparapu@nasa.gov>; "Haqq-Misra, Jacob D. (GSFC-6062)[Science Collaborator]" (b) (6); Clément Vidal (b) (6); Anamaria Berea (b) (6)

Subject: [EXTERNAL] Re: IAA PC SETI UFO text

Hi, all. I don't have edit privileges for Klara's document and I don't think it's fruitful for us to have this conversation on the community IAA channel (which has a lot of non-SETI people on it) so for now I'm adding people who asked to be involved to this thread. I'll leave it to Klara to open her document for comments or edits and maintain a forum for us to coordinate going forward.

My comments on Klara's draft:

As drafted, this will not be a short document.

Even part 1.1, which defines SETI, is a big topic that will likely engender lots of discussion. 1.1.c, for instance, speculates on how SETI will succeed, which I doubt we will agree on.

Section 1.2 defining astrobiology seems even bigger to me, and somewhat beside the point.

Section 1.3, defining UFOs, also seems dangerous, since we are then open ourselves up to debate about whether we defined it properly.

I don't think our purpose here is to define the full scope of the committee, just to explain why UFOs aren't covered by it. I recommend instead following Kathryn's more concise outline at the bottom of this brainstorming document here:

<https://docs.google.com/usp=sharing>

I do like section 3, and encourage people to include links there.

Finally, I think our team should provide recommendations to the broader committee. I think they are threefold:

- Change the wording of the committee's "terms of reference" to read that it "examines topics related to the possible existence of extant or extinct intelligent and/or technologically capable life having arisen beyond Earth." [i.e. strike "all" —we do not examine *all* such topics]
- Add the following language to the "terms of reference" "the committee's scope does not include studies of UFOs or Unidentified Aerial Phenomena"
- Adopt and publish a short statement, which this committee has drafted.

On Wed, Apr 7, 2021 at 8:36 AM Eghigian, Greg (b) (6) wrote:

Greetings Everyone,

Thanks for the invitation to join you.

I will go through the document and insert my comments where appropriate. I've taken a quick look over it, and I do have some thoughts. Initially, however, I would say I concur with two points Kathryn makes in her recent email – namely, that it's not appropriate to ban people because of their interests and that the statement should be short.

A quick general thought, though. Since its inception, SETI researchers – and for the most part, astronomers in general – have always had to face this question of their relationship to UFOs and ufology. The responses these researchers have historically come up with have never succeeded in satisfying all fellow academic researchers, let alone all ufologists. So one can only achieve so much with any statement like this. That said, it is critical to keep in mind who one's audiences – and they are *plural* in this instance – will be for this kind of statement.

Best,
Greg

Greg Eghigian
Professor of History

Department of History
108 Weaver Building
Penn State University
University Park, PA 16802
Ph: (b) (6)
Fax: 814-863-7840
Email: (b) (6)

From: Kathryn E L Denning (b) (6)
Sent: Tuesday, April 6, 2021 3:05 PM
To: (b) (6)
(b) (6)
Cc: Julia DeMarines (b) (6); Chelsea Haramia (b) (6)
STEVEN DICK (b) (6); Margaret Turnbull (b) (6)
Franck Marchis (b) (6); Hector Socas-Navarro (b) (6); Eghigian,
Greg (b) (6)
Subject: RE: IAA PC SETI UFO text

Thanks Jason, and greetings Greg! Glad you could join us.

Thanks for getting us started, Jason. I generally agree with what you've written i.e. I share your views, but we should collectively brainstorm a bit about what is most useful to say.

I was somewhat fazed when Claudio just said over email that the Committee has had a "ban against UAP/UFO Supporters" – I thought that was problematic phrasing. Our public terms of reference <https://iaaseti.org/en/terms-reference/> do say that our Committee's work will "exclude any consideration of UFO phenomena", but that is not the same as an actual ban against individuals with an interest in UAP/UFOs. It is certainly true that some of our members, past and present, have examined aspects of UAP/UFOs, even though our group's focus has consistently been astronomy-based SETI/METI. Whether or not they would be described as "supporters" is hard to know since the term is vague and people wouldn't necessarily discuss all their views within this forum, or publish them.

Anyway, whatever else we say, we need to be careful about that distinction. There are ideas and topics which are beyond our remit/scope/expertise as a Committee. But we're not about actually banning people because of their interests.

I've added a couple of comments on the draft. I am thinking the best strategy is to keep it really short. Getting into details sometimes invites contestation about specifics.

We should bear in mind these stats <https://news.gallup.com/poll/266441/americans-skeptical-ufos-say-government-knows.aspx>

The links at the bottom of that page are busted but these are the files:

http://news.gallup.com/file/poll/266540/20190906UFOs_Iunedata.pdf

http://news.gallup.com/file/poll/266543/20190906UFOs_Augustdata.pdf

And here's a conundrum: within SETI itself, it's common enough to have discussions about worries in case of actual contact (i.e. aliens showing up in our neighbourhood), as well as the general possibility of ETI being hostile. This is not easily disentangled from prevalent ideas about UFO/UAP visitation. The converse holds, too, re: ideas about benevolent ETI and interaction.

If Michael Oman-Reagan is available, it would be good to get his comments.

Cheers!
KD

From: Jason Wright (b) (6) >
Sent: Tuesday, April 6, 2021 12:24 PM
To: (b) (6)
Cc: Julia DeMarines (b) (6); Chelsea Haramia
(b) (6); Kathryn E L Denning (b) (6); STEVEN DICK
(b) (6); Margaret Turnbull (b) (6); Franck
Marchis (b) (6); Hector Socas-Navarro (b) (6); GREG
EGHIGIAN (b) (6)
Subject: Re: IAA PC SETI UFO text

I'm adding Greg to the thread. He has agreed to join the effort.

Greg, see below.

On Tue, Apr 6, 2021 at 11:45 AM Jason Wright <(b) (6)> wrote:

Hi, Klara.

I'm taking the liberty of starting a new thread with people who asked to be involved in the UFO document here.

I've written some text to get us started here:

<https://docs.google.com>

This text represents my personal opinion, and I appreciate that this needs to be a consensus document so I don't expect any of this text to necessarily survive our process; it's merely meant to be a starting point.

It's also possible that this should evolve more along the lines of "recommendation to the SETI PC" instead of "statement from the PC".

I will also ask Greg Eghigian if he would like to join the effort.

--

Jason T Wright
Professor of Astronomy & Astrophysics
Director, Penn State Extraterrestrial Intelligence Center
Acting Director, Center for Exoplanets and Habitable Worlds
[NEID Instrument Team Project Scientist](#)
he/him/his
<https://sites.psu.edu/astrowright/>
[@Astro_Wright](#)

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[@Astro_Wright](#)

From: [Kopparapu, Ravi Kumar \(GSFC-6990\)](#)
To: [STEVEN DICK](#); [Jason Wright](#)
Cc: [Eghigian, Greg](#); [Kathryn E L Denning](#); (b) (6); [Julia DeMarines](#); [Chelsea Haramia](#); [Margaret Turnbull](#); [Franck Marchis](#); [Hector Socas-Navarro](#); [Haqq-Misra, Jacob D. \(GSFC-6062\)\[Science Collaborator\]](#); [Clément Vidal](#); [Anamaria Berea](#)
Subject: Re: [EXTERNAL] Re: IAA PC SETI UFO text
Date: Wednesday, April 7, 2021 10:16:50 AM

Fully agree with all of Steve's points!

From: STEVEN DICK (b) (6)
Date: Wednesday, April 7, 2021 at 10:09 AM
To: Jason Wright (b) (6)
Cc: "Eghigian, Greg" (b) (6); Kathryn E L Denning (b) (6); (b) (6); Julia DeMarines; (b) (6); Chelsea Haramia (b) (6); Margaret Turnbull; (b) (6); Franck Marchis (b) (6); Hector Socas-Navarro; (b) (6); "Kopparapu, Ravi Kumar (GSFC-6990)" <ravikumar.kopparapu@nasa.gov>; "Haqq-Misra, Jacob D. (GSFC-6062)[Science Collaborator]" (b) (6); Clément Vidal (b) (6); Anamaria Berea (b) (6)
Subject: [EXTERNAL] Re: IAA PC SETI UFO text

Hi Everyone, glad to see such an interdisciplinary group for this important subject.

A few preliminary comments:

- 1) Perhaps I am stating the obvious, but it seems to me there is room for both Jason's document with its very specific purpose related to the SETI PC and Klara's white paper, which is longer term and much broader. A paper on the relation between the SETI community and the UFO/UAP field is long overdue, and should in my view be published.
- 2) Jason's document as it stands argues that UFOs should not be part of the SETI PC or SETI in general. I agree with that, but for starters we need to make sure that most of us are on board with that. I have the feeling that not everyone on the PC would agree, but of course there will never be unanimity.
- 3) The question of the scope of the SETI PC seems to me separate from whether or not respectable UFO researchers could become members of the PC. If they pass the membership criteria, why not? In an earlier era would we have left Hynek out? Perhaps so, if he could not contribute to SETI. But I agree we should not ban people from membership if they are otherwise qualified and could contribute to the SETI discussion from a different angle.
- 4) We need to make sure we have our terms straight. I think it was Hector who said UAPs have a very specific meaning, at least in some quarters, and so perhaps the term should not be used as a synonym for UFOs. I don't know what the current broad usage is for UAPs, but I'm sure Greg would

have a better idea. And I agree with those who have said the UFO term is so freighted with historical baggage that a new name is warranted. I would not underestimate the power of a new name.

Renaming 'exobiology' and broadening it to 'astrobiology' in the mid-1990s I think played an important role in astrobiology's success, freeing it from the restricted 'origins of life' cast of exobiology. Not to mention the boost "technosignatures" has given to SETI! Sometimes new terms foster a new mindset.

5) In general historical context is important, as I'm sure Greg will agree. I am reminded of the UFO symposium in 1969 that Sagan organized for the AAAS, to the consternation of many. It resulted in the Sagan and Thornton Page book, *UFOs: A Scientific Debate* (1973). There Sagan and Page argued that organizations such as the AAAS (and the IAA?) have the obligation to arrange for discussions on these subject that catch the public eye as a means of demonstrating the scientific method.

Have to run, more later.

Steve

Steven J. Dick
21406 Clearfork Ct
Ashburn, VA 20147

(b) (6) (cell)

(b) (6)

Space, Time, and Aliens: Collected Works on Cosmos and Culture

<https://www.springer.com/gp/book/9783030416133>

Astrobiology, Discovery, and Societal

Impact www.cambridge.org/9781108426763

Classifying the Cosmos. <https://link.springer.com/book/10.1007/978-3-030-10380-4>

Website <http://stevenjdick.com/index.html>

On Apr 7, 2021, at 9:00 AM, Jason Wright (b) (6) wrote:

Duplicate email chain - already processed

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Requester: John Greenewald

Request #: 21-HQ-F-00603

5 page(s) containing duplicate information is/are held in the file.

From: Jason Wright
To: Jacob Haqq Misra; Haqq Misra; Jacob D. (GSFC 60621) Science Collaborator
Cc: Hector Socas-Navarro; STEVEN DICK; Eghigian, Greg; Kathryn F.L. Dennis; (b) (6); Julia DeMarines; Chelsea Haramia; Margaret Turnbull; Franck Marchis; Konparapu, Ravi Kumar (GSFC 6990); Clement Vidal; Anamaria Bersa; (b) (6)
Subject: [EXTERNAL] Re: IAA PC SETI UFO text
Date: Wednesday, Apr 7, 2021 1:00:06 PM

Adding Frank Soboczenski to the thread.

On Wed, Apr 7, 2021 at 12:57 PM Jason Wright (b) (6) wrote:
OK, please do put some proposed language into the brainstorming document about what sorts of UAP abstracts would be allowed and we can discuss. I'm struggling to imagine what those criteria would be that would not open the door to any UFO study that hypothesizes an alien origin.

On Wed, Apr 7, 2021 at 12:52 PM Jacob Haqq Misra (b) (6) wrote:
I am certainly not suggesting that all (or even most) UAP studies are relevant to SETI. But all exoplanet studies are also not relevant to SETI, and many legitimate exoplanet studies would rightly be rejected as out-of-scope from a SETI session at a conference.

My suggestion is that there might be some specific criteria under which a UAP abstract could articulate its relevance to SETI, rather than a-priori rejecting any UAP-related abstract as out-of-scope.

On Wed, Apr 7, 2021 at 12:22 PM Jason Wright (b) (6) wrote:
Right, I think Jacob's hypothetical is the ETI explanation for UFOs, right? If that's what they are, then I think we jump at the chance to study them, of course. But lacking 1) evidentiary and 2) scope reasons to do so, this committee need not go there.

On Wed, Apr 7, 2021 at 12:16 PM Hector Socas-Navarro (b) (6) wrote:
> We are getting close, but this is the question I wonder: suppose that there is actually an ETI spacecraft in the solar system, and it enters the
> atmosphere in a way that is detected by instruments but leaves some ambiguity as to what caused it.

I guess there's other scientific communities with much deeper expertise and would get engaged in the process of resolving that ambiguity. The way I see it, SETI is the search for ETI. If they are already here, manifesting themselves in whatever form, then there's no need to search. That scenario would be outside our scope.

Hector

On Wed, Apr 7, 2021 at 4:58 PM Jacob Haqq Misra (b) (6) wrote:
We are getting close, but this is the question I wonder: suppose that there is actually an ETI spacecraft in the solar system, and it enters the atmosphere in a way that is detected by instruments but leaves some ambiguity as to what caused it. As scientists, what should we call this observation?

On Wed, Apr 7, 2021 at 11:55 AM STEVEN DICK (b) (6) wrote:
OK, so I think we are converging on some basic points: As probably everyone already knew (but I wanted to clarify), there are two separate efforts, and we are focusing in this thread only on the more limited document Jason started to answer the specific question of whether UFO research is within the scope of the SETI PC. We are going to make a recommendation to the PC that UFOs should not be under the purview of the PC. We are not banning UFO researchers from membership in the PC. We are not in this document going to worry about UFO/UAP nomenclature, but Klara's group may want to do that. We agree there is work to be done on UFOs, but the SETI PC should not be involved.

It looks like the document is trending in that direction. Do we all agree on those basic points?

Steve

Steven J. Dick
21406 Clearfork Ct
Ashburn, VA 20147
(b) (6) cell
(b) (6)

Space, Time, and Aliens: Collected Works on Cosmos and Culture
<https://www.springer.com/gp/book/9783030416133>

Astrobiology, Discovery, and Societal Impact www.cambridge.org/9781108426763

Classifying the Cosmos. <https://link.springer.com/book/10.1007/978-3-030-10380-4>

Website <http://stevenjdick.com/index.html>

On Apr 7, 2021, at 11:13 AM, Eghigian, Greg (b) (6) wrote:

Hi All,

I'd add a few things to the comments made by Steve and Jason as well as to the draft

I think Jason is quite right that there is little point in trying to adjudicate the terminology question of UFO vs UAP. Most ufologists continue to prefer UFO, though UAP enjoys circulation within the UFO community. UAP actually has done little to clarify matters – just as the adoption of UFO in replacing "flying saucer" in the 1950s didn't clear up confusions – and in many ways only muddies the waters more by using the more capacious term "phenomena."

I find Chelsea's draft synthesis quite good and moving in the right direction. In particular, it emphasizes two things I think that are key here:

- 1 – Distinguishing professional jurisdictions: identify what SETI research at this time does and what it doesn't do
- 2 – Acknowledging the provisional nature of scientific knowledge in this area: scientific research being a process, there needs to be an acknowledgement that there is a measured openness to the field changing

At all cost, however, I would suggest steering away from dismissive and disparaging terminology that implies ignorance and foolishness is the problem with UFO enthusiasts and believers. Steve mentioned the famous 1969 AAAS UFO symposium that Sagan (along, I think, with Thornton Page) organized. Edward Condon did everything in his power to get the event cancelled. Condon's argument was that the matter was scientifically settled: there was nothing more to learn, nothing more to say on the subject, and the public should simply accept that. Sagan disagreed, arguing that engagement with the public on the subject was a process, one that was inherently open-ended. I think when it comes to public engagement, Sagan's path has proven to be the most fruitful.

Greg

Greg Eghigian
Professor of History

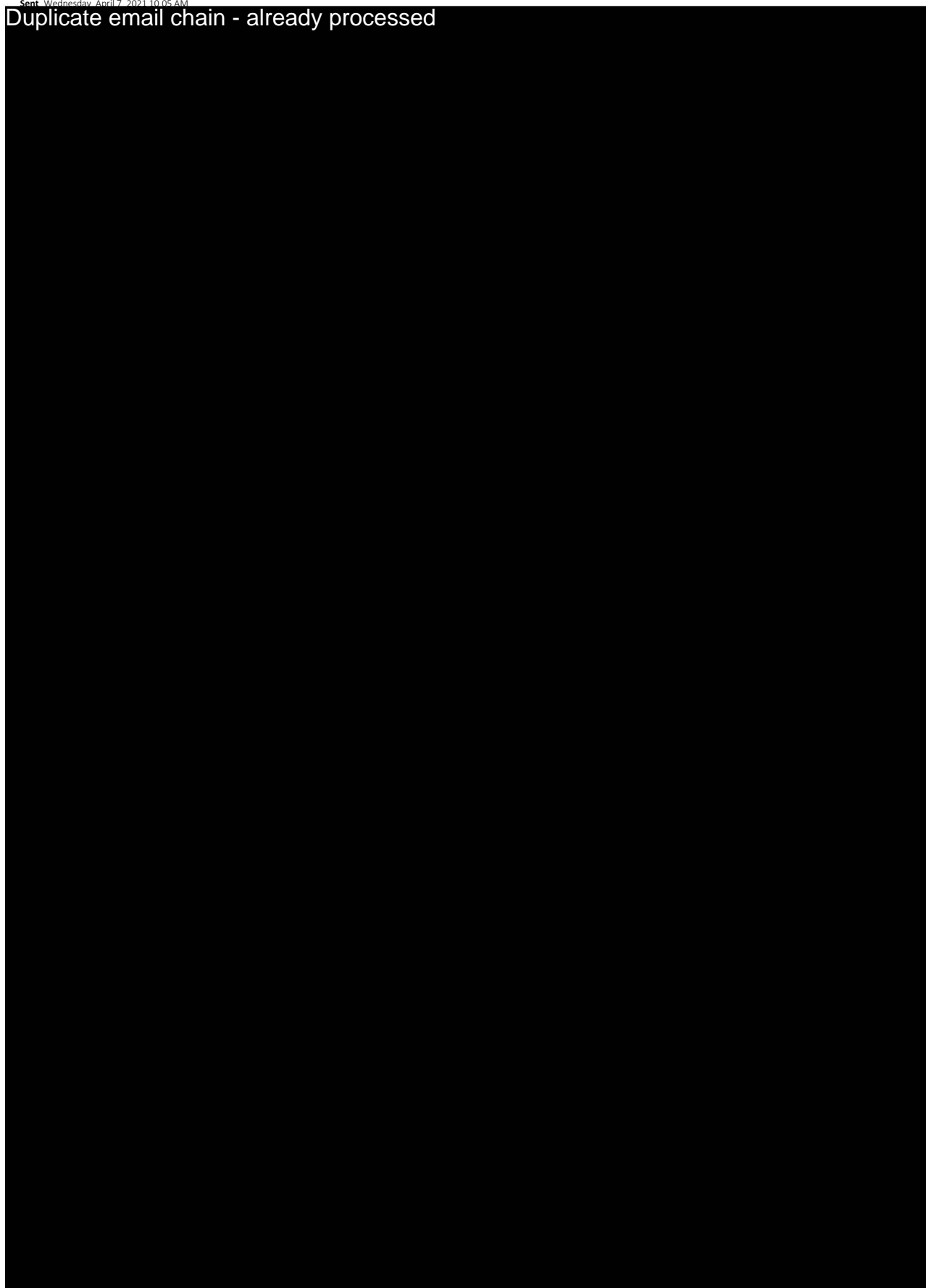
Department of History
108 Weaver Building
Penn State University
University Park, PA 16802
Ph (b) (6)
Fax: 814-863-7840

Email (b) (6)

From: STEVEN DICK (b) (6)

Sent: Wednesday, April 7, 2021 10:05 AM

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Requester: John Greenewald

Request #: 21-HQ-F-00603

3 page(s) containing duplicate information is/are held in the file.

From: [Jacob Haqq Misra](#)
To: [Jason Wright](#)
Cc: [Kopparapu, Ravi Kumar \(GSFC-6990\)](#); [Eghigian, Greg](#); [STEVEN DICK](#); [Kathryn E L Denning](#); [\(b\) \(6\)](#); [Julia DeMarines](#); [Chelsea Haramia](#); [Margaret Turnbull](#); [Franck Marchis](#); [Hector Socas-Navarro](#); [Haqq-Misra, Jacob D. \(GSFC-6062\)\[Science Collaborator\]](#); [Clément Vidal](#); [Anamaria Berea](#)
Subject: Re: [EXTERNAL] Re: IAA PC SETI UFO text
Date: Wednesday, April 7, 2021 1:09:59 PM

Jason, I just wrote this all in a comment in the Google doc, but I will repeat it here for the group:

I suggest we reframe this entire section to explain under what circumstances UAP would be included by the SETI committee.

Quite possibly, there are no serious UAP investigations today (or very few) that would meet this criteria. But to me, the goal of making this statement is to encourage actual scientific thinking about UAP, and more importantly, encourage the collection of data that would allow certain UAP investigations to test their hypothesis and then make a more substantive case for inclusion in an academic discussion.

To say that UAP are off limits is to preclude any possible scenario in which a UAP investigation gathers data and, ideally, publishes the results in a peer-reviewed journal. I do not think this has ever happened. I think it would go a long way if this SETI committee were to explain the standards of scientific rigor that would be required for UAP to be included, rather than a-priori rejecting them in all cases.

Feel free to use any of this text. I just could not see how to insert these ideas into what has already been written.

On Wed, Apr 7, 2021 at 1:04 PM Jason Wright [\(b\) \(6\)](#) wrote:

OK, can you suggest an example of an in-scope artifact or criteria that would be acceptable for them in the document? I'm still struggling with a concrete example that would meet our evidentiary and scope criteria.

On Wed, Apr 7, 2021 at 1:01 PM Kopparapu, Ravi Kumar (GSFC-6990) <ravikumar.kopparapu@nasa.gov> wrote:

Copying from your email, Here is the difference I would make:

*If a researcher says "I've studied these videos and the UFO is clearly accelerating beyond anything human technology can do, **and is therefore alien**" have they not identified a potential technosignature?*

The bolded is the one I would have a problem with when they submit an abstract. They have not demonstrated it is alien and I would tell them as such. If they want to just talk about the technology or how fast they are moving, that would be out of scope for SETI. If

they say these accelerations could potentially be used for interstellar travel, that would be a hypothesis to test so that would be relevant in my opinion. In the last case, they are not claiming anything, they may be applying it to interstellar travel. It depends upon how they frame the abstract text and what data they are planning to present.

For me it is similar to Tabby's star analysis and megastructures. Present the data and explore a hypothesis. If it turns out something else, so be it. As long as they are careful in their presentation, I would equate with how we responded to Tabby's star.

Ravi

From: Jason Wright <(b) (6)>
Date: Wednesday, April 7, 2021 at 11:55 AM
To: "Eghigian, Greg" (b) (6)
Cc: STEVEN DICK (b) (6), Kathryn E L Denning (b) (6), Julia DeMarines (b) (6), Chelsea Haramia (b) (6), Margaret Turnbull (b) (6), Franck Marchis (b) (6), Hector Socas-Navarro (b) (6), "Kopparapu, Ravi Kumar (GSFC-6990)" <ravikumar.kopparapu@nasa.gov>, "Haqq-Misra, Jacob D. (GSFC-6062) [Science Collaborator]" (b) (6), Clément Vidal (b) (6), Anamaria Berea (b) (6)
Subject: [EXTERNAL] Re: IAA PC SETI UFO text

Those are good points, Greg, and I also like Chelsea's synthesis (which I think she contributed simultaneously to my own attempt).

I have produced a second draft in the brainstorming/UFO scope document, incorporating Kathryn and Chelsea's language, and trying to honor everyone's comments.


Ravi, I know you want language along the lines of "UFO abstracts may be considered if they can justify themselves" but I'm not sure how that would work without undoing the entire premise of this document. If a researcher says "I've studied these videos and the UFO is clearly accelerating beyond anything human technology can do, and is therefore alien" have they not identified a potential technosignature? Allowing such abstracts would put us right back where we tried not to go, evaluating claims of dubious validity in a domain we have no expertise in.

I prefer Chelsea's language about deferring to experts in the relevant field as to whether the evidentiary threshold has been met to warrant the committee's attention.

Jason

On Wed, Apr 7, 2021 at 11:13 AM Eghigian, Greg (b) (6) wrote:

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Requester: John Greenewald

Request #: 21-HQ-F-00603

10 page(s) containing duplicate information is/are held in the file.

From: [Kopparapu, Ravi Kumar \(GSFC-6990\)](#)
To: [Jason Wright](#); [Haqq-Misra, Jacob D. \(GSFC-6062\)\[Science Collaborator\]](#)
Cc: [Eghigian, Greg](#); [STEVEN DICK](#); [Kathryn E L Denning](#); (b) (6); [Julia DeMarines](#); [Chelsea Haramia](#); [Margaret Turnbull](#); [Franck Marchis](#); [Hector Socas-Navarro](#); [Clément Vidal](#); [Anamaria Berea](#)
Subject: Re: [EXTERNAL] Re: IAA PC SETI UFO text
Date: Wednesday, April 7, 2021 1:20:30 PM

Perhaps there is a compromise. Let me see if I can add some text in there to see how relevance to SETI can be made (if any).

From: Jason Wright (b) (6) >
Date: Wednesday, April 7, 2021 at 1:14 PM
To: "Haqq-Misra, Jacob D. (GSFC-6062)[Science Collaborator]" <(b) (6) >
Cc: "Kopparapu, Ravi Kumar (GSFC-6990)" <ravikumar.kopparapu@nasa.gov>, "Eghigian, Greg" ((b) (6) STEVEN DICK (b) (6) Kathryn E L Denning (b) (6) (b) (6) (b) (6) Julia DeMarines (b) (6) (b) (6) , Chelsea Haramia (b) (6) Margaret Turnbull (b) (6) (b) (6) Franck Marchis (b) (6) Hector Socas-Navarro (b) (6) (b) (6) Clément Vidal (b) (6) Anamaria Berea (b) (6))
Subject: Re: [EXTERNAL] Re: IAA PC SETI UFO text

OK, I think actually our disagreement is fundamental, then. I agree this perspective will not fit in with what we have.

On Wed, Apr 7, 2021 at 1:08 PM Jacob Haqq Misra <(b) (6) > wrote:

I suggest we reframe this entire section to explain under what circumstances UAP would be included by the SETI committee.

I disagree. We have no expertise here, and there is no reason to think they're alien.

Quite possibly, there are no serious UAP investigations today (or very few) that would meet this criteria. But to me, the goal of making this statement is to encourage actual scientific thinking about UAP, and more importantly, encourage the collection of data that would allow certain UAP investigations to test their hypothesis and then make a more substantive case for inclusion in an academic discussion.

I disagree. The purpose of the SETI PC is not to legitimize or encourage scientific thinking about UAPs, because there is no reason to think they are alien.

To say that UAP are off limits is to preclude any possible scenario in which a UAP investigation gathers data and, ideally, publishes the results in a peer-reviewed journal.

It certainly is not! There are an *enormous* number of ways a UAP investigation can gather data and publish. We are in no way precluding or restricting that. We are just saying it's not what *this committee* does.

I do not think this has ever happened. I think it would go a long way if this SETI committee were to explain the standards of scientific rigor that would be required for UAP to be included, rather than a-priori rejecting them in all cases.

I don't think this is an appropriate goal for the PC. It's out of scope. But that is my opinion—if the PC disagrees then we need to rework this document completely.

--

Jason T Wright
Professor of Astronomy & Astrophysics
Director, Penn State Extraterrestrial Intelligence Center
Acting Director, Center for Exoplanets and Habitable Worlds
[NEID Instrument Team Project Scientist](#)
he/him/his
<https://sites.psu.edu/astrowright/>
[@Astro_Wright](#)

From: [Hector Socas-Navarro](#)
To: [Kopparapu, Ravi Kumar \(GSFC-6990\)](#)
Subject: Re: [EXTERNAL] Re: IAA PC SETI UFO text
Date: Wednesday, April 7, 2021 2:41:08 PM

Because the data 1) existed and 2) was difficult to fit into a natural explanation

Hector

On Wed, Apr 7, 2021 at 7:18 PM Kopparapu, Ravi Kumar (GSFC-6990) <ravikumar.kopparapu@nasa.gov> wrote:

Agreed, Boyajin star is a well-established phenomenon for astronomy, so why should SETI researchers be concerned about it who look for technological life?


From: Hector Socas-Navarro (b) (6)
Date: Wednesday, April 7, 2021 at 2:15 PM
To: "Kopparapu, Ravi Kumar (GSFC-6990)" <ravikumar.kopparapu@nasa.gov>
Subject: Re: [EXTERNAL] Re: IAA PC SETI UFO text

I would not try to establish a parallel between Boyajian's star and UFO research. The former is a well established phenomenon for which there is objective evidence and independent groups can go and make observations or analyze the data. There is no question that the star has dimmed.

Hector

On Wed, Apr 7, 2021 at 7:05 PM Kopparapu, Ravi Kumar (GSFC-6990) <ravikumar.kopparapu@nasa.gov> wrote:

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Requester: John Greenewald

Request #: 21-HQ-F-00603

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From: [Kopparapu, Ravi Kumar \(GSFC-6990\)](#)
To: [Jason Wright](#)
Cc: [Haqq-Misra, Jacob D. \(GSFC-6062\)\[Science Collaborator\]](#); [Hector Socas-Navarro](#); [Eghigian, Greg](#); [STEVEN DICK](#); [Kathryn E L Denning](#); [\(b\) \(6\)](#); [Julia DeMarines](#); [Chelsea Haramia](#); [Margaret Turnbull](#); [Franck Marchis](#); [Clément Vidal](#); [Anamaria Berea](#)
Subject: Re: [EXTERNAL] Re: IAA PC SETI UFO text
Date: Wednesday, April 7, 2021 3:04:00 PM

I am unable to understand how this is not a compromise, nor do I mention anywhere "alien" in the paragraph. I am specifically focused on any potential abstracts or work submitted based on a hypothesis driven argument to show relevance for SETI, similar to the Tabby's star.

The document's theme is to explain the scope of SETI work and why UAP is not studied under this scope. If that is the premise of the document, then the interstellar travel hypothesis for UAP would always be at odds. To be clear, I have no preference of their nature one way or another. I tried to include what could be acceptable under SETI's scope, in addition to what is not included, following our own hypothesis driven technosignature search. I leave it up to the committee members to vote and decide.

From: Jason Wright <(b) (6)>
Date: Wednesday, April 7, 2021 at 2:24 PM
To: "Kopparapu, Ravi Kumar (GSFC-6990)" <ravikumar.kopparapu@nasa.gov>
Cc: "Haqq-Misra, Jacob D. (GSFC-6062)[Science Collaborator]" <(b) (6)> Hector Socas-Navarro <(b) (6)> "Eghigian, Greg" <(b) (6)> STEVEN DICK <(b) (6)> Kathryn E L Denning <(b) (6)> (b) (6) <(b) (6)> Julia DeMarines <(b) (6)> Chelsea Haramia <(b) (6)> Margaret Turnbull <(b) (6)> Franck Marchis <(b) (6)> Clément Vidal <(b) (6)> Anamaria Berea <(b) (6)>
Subject: Re: [EXTERNAL] Re: IAA PC SETI UFO text

I think this paragraph is not a compromise at all; it is completely at odds with the rest of the document. It's basically saying that a scientific investigation into UFOs is in scope of the committee as long as 1) it's scientifically rigorous and 2) it's investigating them as alien technology.

If that's what we mean, I think we need to start over.

Again, I'm not saying we *can't* study UFOs as alien spacecraft scientifically. My understanding was that such work was simply not what this committee was about.

For instance, this committee also doesn't consider that there may be evidence of alien technology among archeological artifacts or in our DNA or in our thoughts and dreams. One can formulate perfectly scientific ways to consider those hypotheses as well, but I would consider them out of scope because they do not use the methods of astronomy and planetary science (to be fair, I also

think these are not likely to be fruitful paths to follow for other reasons, which I also think about UFOs, but that's a separate argument).

Perhaps the best way forward is for Jacob and Ravi to lead a second report for consideration by the full PC that argues for expanding the committee's scope to include UFOs?

But I've probably taken up too much space on this at this point. I'll let the rest of this ad hoc subcommittee weigh in.

Jason

On Wed, Apr 7, 2021 at 2:05 PM Kopparapu, Ravi Kumar (GSFC-6990) <ravikumar.kopparapu@nasa.gov> wrote:

I added the following sentences to the draft regarding hypothesis driven work.

Hypothesis driven work could possibly be relevant, as such work is extensively used in SETI searches (either through observations or in archival data). A recent example would be the well-known technosignature candidate, Boyajian's Star (KIC 8462852) that displayed an unusual photometric signature that raised the potential of an alien megastructure hypothesis. Eventually, dust orbiting the star seem to be the culprit. Similarly, UAP work that proposes interstellar travel probes as a hypothesis may be relevant. However, this should strictly follow similar scientific rigor, presenting the corresponding data, demonstrating the reliability of the data, and the possibility of interstellar travel as a hypothesis rather than a certainty.

From: Jason Wright <(b) (6)>
Date: Wednesday, April 7, 2021 at 1:46 PM
To: "Haqq-Misra, Jacob D. (GSFC-6062)[Science Collaborator]" <(b) (6)>
Cc: Hector Socas-Navarro <(b) (6)> "Kopparapu, Ravi Kumar (GSFC-6990)" <ravikumar.kopparapu@nasa.gov>, "Eghigian, Greg" <(b) (6)> STEVEN DICK <(b) (6)> Kathryn E L Denning <(b) (6)> <(b) (6)> Julia DeMarines <(b) (6)> Chelsea Haramia <(b) (6)> Margaret Turnbull <(b) (6)> Franck Marchis <(b) (6)> Clément Vidal <(b) (6)> Anamaria Berea <(b) (6)>
Subject: Re: [EXTERNAL] Re: IAA PC SETI UFO text

We address this in the latest draft:

Like all premises in science, our position that UAPs/UFOs are not relevant to studies of alien technology is open to revision if the evidentiary conditions can be met. Given the committee's areas of expertise, we are not in a position to judge which claims for

UFO/UAPs having extraterrestrial origin have scientific merit and which do not. Until other scientific experts can confirm that UFO/UAP research meets the evidential requirement, the committee will continue to restrict its activities to its current scope of research, i.e. the astronomy-based search for evidence of extraterrestrial intelligence and closely related topics.

We *could* expand our ken to include the atmosphere, of course. My understanding is that we are choosing not to because those studies use completely different methods from astronomy and planetary science, which is where this committee works (and, personally, because the phase space remaining for them to be alien is small enough that we need significantly more evidence before considering them at all.)

On Wed, Apr 7, 2021 at 1:37 PM Jacob Haqq Misra <(b) (6)> wrote:

I am still confused. We seem to be fine talking about solar system SETI, which means thinking about searching nearby space or planetary surfaces for artifacts. But what would we do if an artifact entered Earth's atmosphere? Would this be called a UFO/UAP? Would SETI scientists be interested?

I just don't see why it is fine to think about searching for artifacts in the solar system but not in Earth's atmosphere.

Just be clear: I do not have any reasons to think that previously spotted UFOs are such ETI artifacts. But I just think that the idea of an actual ETI artifact entering Earth's atmosphere is a relevant one to this committee.

On Wed, Apr 7, 2021 at 1:23 PM Hector Socas-Navarro <(b) (6)> wrote:

I am with Jason here. This rewording would dilute the point

Also, I think we need to be more careful with the terminology. UAP is not a new name for UFO. It's a different thing, although there is some overlap. UAP that are not UFOs (e.g., an unauthorized airplane in restricted military space) is irrelevant for this discussion. Only those that are "mysterious" or show inexplicable behavior are potentially non-human technology. Those are UFOs. So maybe we should just use that term.

Hector

On Wed, Apr 7, 2021 at 6:14 PM Jason Wright <(b) (6)> wrote:

OK, I think actually our disagreement is fundamental, then. I agree this perspective will not

fit in with what we have.

On Wed, Apr 7, 2021 at 1:08 PM Jacob Haqq Misra <(b) (6)> wrote:

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Acting Director, Center for Exoplanets and Habitable Worlds
[NEID Instrument Team Project Scientist](#)
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Hector Socas-Navarro
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Phone: MCC +34 922 315262, IAC +34 922 605748, Fax: +34 922 605210

Quidquid latine dictum sit, altum uidetur

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From: [Kopparapu, Ravi Kumar \(GSFC-6990\)](#)
To: [Jacob Haqq Misra](#); [Jason Wright](#); [Haqq-Misra, Jacob D. \(GSFC-6062\)\[Science Collaborator\]](#)
Subject: Re: [EXTERNAL] UFOs
Date: Thursday, April 8, 2021 9:18:36 PM

I agree. I don't like the term 'UFOlogy'. It invokes a feeling similar to 'Astrology' that further undermines the scientific investigation of UAP, and relegates to pseudo-science.

I read James McDonald's "Science in Default" several times and it is my template of how to do a scientific investigation of UAP. It is literally like a scientific paper, though much to my discomfort, McDonald reaches a conclusion of ETI hypothesis. As long as we ignore that, that is an excellent document to read and see how a scientist should do an investigation.

I understand your inclination not to participate in any UAP community. I am a bit surprised to learn that most of the PC will think similar as well. I am thinking what if Shawn or Aki or Kevin (Stevenson) refuse to participate in our Technosignature seminars because they do not have expertise. Or if Vikki is reluctant to accept abstracts on technosignatures because she thinks they are not long-lived anyway and there is no evidence of them being long-lived? I am hoping the SETI PC members would be think about these aspects. However, the connection to SETI is weak with UAP (or at least non-existent so far). So SETI PC need not get involved. The connection to SETI is strong with Technosignatures, though.

I will draft an email to PC. We need a longer talk on zoom or something.

From: Jacob Haqq Misra
Date: Thursday, April 8, 2021 at 8:37 PM
To: Jason Wright <(b) (6)>
Cc: "Kopparapu, Ravi Kumar (GSFC-6990)" <ravikumar.kopparapu@nasa.gov>, "Haqq-Misra, Jacob D. (GSFC-6062)[Science Collaborator]" <(b) (6)>
Subject: Re: [EXTERNAL] UFOs

Jason, I recommend you take a look at the AAAS UFO symposium proceedings, which are published in a collection edited by Sagan. Notably I recommend the chapter written by Sagan, where he takes an honest look at the ETI hypothesis in comparison to others for UFOs. He concludes that existing UFO sightings are probably not ETI, but we should be careful not to be too close-minded in case there is an interesting and relevant UFO observation in the future for SETI. This was part of what prompted him to organize the symposium, even though many other astronomers criticized this as "legitimizing" UFOs when the topic should instead be ignored.

I also recommend the chapter "Science in Default" by James McDonald. Both Sagan and McDonald are both careful to point out that they are talking about very specific kind of UAP that is a percent or less of all reported cases. I think the term "UFOlogy" is muddying the conversation, because we do not really care about most of what UFOlogy offers. McDonald's approach represents a template for how to conduct a scientific investigation of UAP. McDonald seems to prefer the ETI hypothesis more strongly than I do, but he at least is one of the few to attempt to collect data on these anomalous observations.

On Thu, Apr 8, 2021 at 7:48 PM Jason Wright <(b) (6)> wrote:

On Thu, Apr 8, 2021 at 6:13 PM Kopparapu, Ravi Kumar (GSFC-6990) <ravikumar.kopparapu@nasa.gov> wrote:

Yes, I think we should poke the committee and ask what are the steps going forward and ask “Is this going to be released only based on PC members contribution (and if yes, does this represent the views of the broader IAASETI members), or will it be distributed to the broader IAASETI for further input?” Either way, we need to contact PC first and request comments.

I don't think there are "broader IAA SETI members", there are only people that have asked to be on the community mailing list. They are mostly not IAA members (I'm not). I don't think this list has any status with the IAA or the PC, because there is no eligibility or anything to join it. Anyone who asks can get those emails.

So I think this process just concerns the PC, which is appropriate because it defines the scope of the PC.

But I agree, we should poke at least the ad hoc subcommittee, announce our detente, and invite further contributions. Would one of you like to do it?

Jacob's point about abstract restriction need to be sorted out. Are we explicitly going to decline abstracts based on UAP studies? Looks like that is how the document is framed now.

Yes, that is my preference. However, I think it's fine if the PC occasionally accepts abstracts outside of its scope at its discretion, as with the DNA SETI talk Jacob mentioned. These kinds of rules shouldn't be ironclad. But my opinion is that the general rule should be that they are out of scope unless the PC makes some sort of special exception. The expectation should be that they will not be included.

Jacob, on the comparison with anthropology and history abstracts that are relevant to SETI, if I understand Jason's view accurately, those fields are established and have been thoroughly explored.

More than that, they are also part of the historical scope of the PC. Humanities and social science studies of the effects of alien contact were actually one of the founding reasons the PC was established.

UAP/UFO field has not done that yet. Now, how do they do that is up to the UAP scientific investigators. Hopefully they will follow similar scientific methodology, which some probably do. So to address your suggestion, I guess the criteria list could include that the abstract should be relevant to one of the established XYZ fields?

Relevant broadly to "astronomical SETI" is how I'd phrase it, but I'm a relatively new member. Here I think our historian and anthropology peers that have served longer than us will be valuable in defining these historical boundaries.

I guess the way the draft is written now, even that will be exclusionary. So I just am not sure where do they present their investigative work so that it can be evaluated properly by the scientific community to gain reputation as a field of its own. Perhaps this could be addressed in a separate draft or in the email list.

Here is where I think we part ways. You've both stated that the all (or almost all) UFOs have *nothing* to do with SETI. So why on Earth (pardon the pun) would a SETI committee be the correct forum to rehabilitate that field? If anything it would exacerbate the problem by implying that the reason the field should be taken seriously is that UFOs are likely to have an alien origin! That's not the reason UFOlogy is interesting or why it deserves serious scholarship.

I can see why the IAA would be involved (being interested in astronautics and propulsion and experimental aircraft) but why the SETI PC? Astronomers are not versed in the methods, and there is no reason to think any UFOs are alien. Surely there are better fora for this than ours?

The other option is to do what we are doing now to connect Astrobiology and Technosignature work. We are trying to connect the communities by inviting scientific *academics* and *experts* in those respective fields to present their work and ask questions.

I have no problem with this at all. But those academics and experts and by and large not astronomers! This is not the SETI PC's problem.

As we all know, a lot of astrobiologists probably have similar opinions about technosignatures, as we have about UAP, even while we are trying to resurrect the field. It is new to them, and I have heard snarky comments from my colleagues in the mission studies about it. SETI itself was probably in that seat several decades ago, viewed by astrophysicists.

I agree the parallels exist, but again: 1) I really don't think the problems are exactly analogous and 2) this isn't the SETI PC's problem. I'm happy to see you take it on, but I don't think you should be

recruiting the whole IAA SETI PC into your efforts. As Kathryn and Steve have pointed out: there is no reason individual members should not engage in outside activities like this, but that's not why the committee as a whole exists.

Perhaps an initial meeting with interested people in UAP can be made to see if anything is scientifically verifiable. They should include people like Greg Eghigian, Kathryn Denning, Steve Dick and any other experts. It is a likely a daunting task but I guess the time is right. Otherwise it will always be a taboo subject, always relegated to the fringes. And it has been done before several decades ago. So there is a precedent. Perhaps this can be proposed in a separate draft as well.

Again, I think it would be *great* if UFO studies could be rehabilitated. But I also have *zero* expertise in the relevant sciences, so will decline to participate. I suspect most of the rest of the PC will too, for similar reasons. And fundamentally, that's what we're talking about.

(That said, I'm sure Greg would be happy to be involved in such a thing, and perhaps Kathryn, too. I think Steve is retired, but might want to be a fly on the wall).

Jason

From: Jason Wright <(b) (6)>

Date: Thursday, April 8, 2021 at 4:28 PM

To: "Kopparapu, Ravi Kumar (GSFC-6990)" <ravikumar.kopparapu@nasa.gov>

Cc: "Haqq-Misra, Jacob D. (GSFC-6062)[Science Collaborator]" <(b) (6)>

Subject: Re: [EXTERNAL] UFOs

On Thu, Apr 8, 2021 at 2:57 PM Kopparapu, Ravi Kumar (GSFC-6990)

<ravikumar.kopparapu@nasa.gov> wrote:

Is the draft letter going to be sent to the broader IAA SETI community? Or will it be released based only on the PC contributions? Will it be signed by people who agree with it? Or will it be released as the IAASETi endorsement? We have heard from others privately who did not want to publicly express their views but were not sure if they want to be on board with the draft.

I'm not sure. I got things started by offering text, then Klara started her document and organizational scheme, but hasn't seemed to contribute since.

There was a sense that we should bifurcate efforts into a document about UFOs and one defining the scope of the field more generally.

I'm wary of "taking over" the discussion, especially when Klara was designated to lead it. I was going to give the rest of the subcommittee more time to chime in, but perhaps we could poke them with an email to the group suggesting a way forward? I think our back-and-forth may have choked off discussion.

--

Jason T Wright
Professor of Astronomy & Astrophysics
Director, Penn State Extraterrestrial Intelligence Center
Acting Director, Center for Exoplanets and Habitable Worlds
[NEID Instrument Team Project Scientist](#)
he/him/his
<https://sites.psu.edu/astrowright/>
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Jason T Wright
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[@Astro_Wright](#)

From: [Jason Wright](#)
To: [Jacob Haqq Misra](#); [Haqq-Misra, Jacob D. \(GSFC-6062\)\[Science Collaborator\]](#)
Cc: [Kopparapu, Ravi Kumar \(GSFC-6990\)](#)
Subject: Re: [EXTERNAL] UFOs
Date: Thursday, April 8, 2021 9:19:34 PM

Happy to look, and I'm happy to consider the UFO hypothesis in the future for SETI. I don't think UFOs should be ignored. I'm happy McDonald looked into it.

But the way to study the tiny minority that could, theoretically, be of interest to SETI is to study the whole lot, because you can't find a needle in a haystack unless you're an expert in hay.

That's what makes UFOs different from Tabby's Star. Tabby's star is a *star*. We astronomers are expert in that sort of hay. That's our whole thing.

If you want to consider the UFOs that are aliens, you have to be an expert in all the ones that aren't. I'm not. That's not the kind of hay the SETI PC works on.

Jason

On Thu, Apr 8, 2021 at 8:37 PM Jacob Haqq Misra <(b) (6)> wrote:
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Requester: John Greenewald

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4 page(s) containing duplicate information is/are held in the file.

From: [STEVEN DICK](#)
To: [Kopparapu, Ravi Kumar \(GSFC-6990\)](#)
Cc: [Kathryn E L Denning](#); [Eghigian, Greg](#); [Haqq-Misra, Jacob D. \(GSFC-6062\)\[Science Collaborator\]](#); [\(b\) \(6\)](#); [Hector Socas-Navarro](#); [\(b\) \(6\)](#); [Julia DeMarines](#); [Chelsea Haramia](#); [Margaret Turnbull](#); [Franck Marchis](#); [Clément Vidal](#); [Anamaria Berea](#); [\(b\) \(6\)](#)
Subject: Re: [EXTERNAL] Re: IAA PC SETI UFO text
Date: Friday, April 9, 2021 10:29:46 AM

I've made a few suggested edits, mainly for clarification to an audience outside of SETI researchers, but also in some cases affecting meaning.

Steve

Steven J. Dick
21406 Clearfork Ct
Ashburn, VA 20147
[\(b\) \(6\)](#) (cell)

[\(b\) \(6\)](#)

Space, Time, and Aliens: Collected Works on Cosmos and Culture
<https://www.springer.com/gp/book/9783030416133>

Astrobiology, Discovery, and Societal Impact
www.cambridge.org/9781108426763

Classifying the Cosmos. <https://link.springer.com/book/10.1007/978-3-030-10380-4>

Website <http://stevenjdick.com/index.html>

On Apr 9, 2021, at 7:24 AM, Kopparapu, Ravi Kumar (GSFC-6990) <ravikumar.kopparapu@nasa.gov> wrote:

Dear ad hoc Permanent Committee,

There were two drafts circulated regarding the position of SETI PC on the topic of UFOs/UAPs. One drafted by Klara (the long version explaining what SETI does, defining terms, references etc.), and another one by Jason/Kathryn that focuses on why UFOs aren't covered by the committee. As you are aware, there has been quite a bit of discussion on the draft by Jason, mainly among a few of us. We have updated this particular draft and it is available for all to comment. We realized our intense discussion may have inhibited further voices to be heard. I am sorry for taking so much of the discussion space. We potentially have two pathways. This is in relation to the second draft that specifically focuses on why UFOs/UAPs are not covered.

1. If people agree with the content or have further opinions, please suggest edits

and/or add your name.

2. If you do not agree with the content, and would like to lead a separate draft that makes the case for UAP relevance to SETI, perhaps advertise as such so that interested members can participate.

As for Klara's longer draft version, I see people are editing and adding some text to it as well. Perhaps we can discuss how to proceed on these drafts.

Klara:

<https://docs.google.com/> [redacted]

Jason/Kathryn: <https://docs.google.com/> [redacted]

Best
Ravi

From: STEVEN DICK <(b) (6)>
Date: Thursday, April 8, 2021 at 9:19 AM
To: Kathryn E L Denning <(b) (6)>
Cc: "Eghigian, Greg" <(b) (6)> "Haqq-Misra, Jacob D. (GSFC-6062) [Science Collaborator]" <(b) (6)> "(b) (6)" <(b) (6)> "Kopparapu, Ravi Kumar (GSFC-6990)" <ravikumar.kopparapu@nasa.gov>, Hector Socas-Navarro <(b) (6)> "(b) (6)" <(b) (6)> Julia DeMarines <(b) (6)> Chelsea Haramia <(b) (6)> Margaret Turnbull <(b) (6)> Franck Marchis <(b) (6)> Clément Vidal <(b) (6)> Anamaria Berea <(b) (6)> "(b) (6)" <(b) (6)>
Subject: Re: [EXTERNAL] Re: IAA PC SETI UFO text

Great story! As an anthropologist you were just doing your job observing another culture! I see he is still alive at 85, and probably rather wealthy.

We digress, but your last paragraph is well said.

Steve

Steven J. Dick
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(b) (6) (cell)

(b) (6)

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Classifying the Cosmos.

<https://link.springer.com/book/10.1007/978-3-030-10380-4>

Website <http://stevenjdick.com/index.html>

On Apr 7, 2021, at 7:44 PM, Kathryn E L Denning <(b) (6)> wrote:

- Regarding strategic distance I am reminded of the time von Daniken invited me to one of his conferences, all expenses paid, to Geneva. It was tempting, but I turned him down.

Ha! You too! Except you didn't fall for it, Steve. I did. When I was asked (2008?), it was by a front organization which seemed quirky but legit enough / had no obvious connection to EvD. So I said yes, and then did some digging a couple of weeks before the conference and belatedly realized what I'd gotten into. Uh-oh. Anyway, after considerable consternation and deliberation, I decided to go anyway, because hey, I'm an anthropologist, and this was going to be interesting cultural exploration... But I was concerned about lending credence by association to an ancient aliens hypothesis which I find deeply objectionable and antithetical to my work in archaeology, and a bit worried because I wasn't tenured yet. Anyway, it was a fascinating mix of presenters (quite a few conventional academics, plus a considerable number of "alt" researchers) and audience. I made my own views extremely clear in my talk (no, I don't think aliens have been here or are coming here) but was treated respectfully anyway. On the last evening of the conference at dinner, I found myself sitting at a big round banquet table, next to von Daniken himself. To my great surprise, he actually invited me and some other participants to visit further with him and his wife at one of his hotels for a couple of days. What the heck, I thought, and went, since my flight home wasn't for several days, and the other guests included a nice family with whom I felt comfortable. It was a fascinating time and I learned a lot: for example, that his Chariots of the Gods was driven significantly by his

fundamentalist / literalist take on the Bible / Ezekiel. We visited his office and he had many filing cabinets filled with conventional archaeology reports, and was actually quietly funding some conventional field archaeology around the Nazca lines in Peru. This surprised me. And he was very hospitable even though I disagreed with pretty well everything he said. Because it seemed fitting, I then went paragliding with the daughter of a university physicist who was there too, running off the edge of a cliff to soar above the giant flying saucer at the center of EvD's defunct alien theme park, "Mystery Park". Can't make this stuff up. Anyway, I'm glad I went because for me, it defused some of the mystery about what that community was thinking and talking about, and has enabled me to have more effective conversations with members of the public and students since then, on many occasions. However... it was not without professional risk or ambivalence. And yeah, I ended up on a brochure.

Anyway, that's mostly a digression: just a (hopefully mildly amusing) story about one person wandering "outside the lines", not about what's right for a committee which has some important specific tasks to focus on. But there's also a point: strategic distance as a collective doesn't preclude individual explorations in keeping with one's own convictions. Even though we're not inviting the UFO conference to come to us, some of us can still go to them.

From: STEVEN DICK <(b) (6)>
Sent: Wednesday, April 7, 2021 4:54 PM
To: Eghigian, Greg <(b) (6)>
Cc: Kathryn E L Denning <(b) (6)> <(b) (6)>
<(b) (6)> Kopparapu, Ravi Kumar (GSFC-6990)
<ravikumar.kopparapu@nasa.gov>; Hector Socas-Navarro
<(b) (6)> <(b) (6)> Julia DeMarines
<(b) (6)> Chelsea Haramia
<(b) (6)> Margaret Turnbull <(b) (6)>
Franck Marchis <(b) (6)> Clément Vidal
<(b) (6)> Anamaria Berea <(b) (6)>
<(b) (6)>
Subject: Re: [EXTERNAL] Re: IAA PC SETI UFO text

The "strategic distance" that Kathryn mentions here is important. It may sound elitist, but it also stems from SETI's very beginnings and remains important in my view, in part because the astronomy and UFO communities are so different. I recall John Billingham saying in response to my question about this many moons ago that SETI has a hard enough

time being reputable without involving UFOs. OK, we have to have the opportunity to grow, but that must be based on evidence, and as Greg says, there really doesn't seem to be anything compellingly new. From my point of view one relatively new and simple argument against the ET hypothesis for UFOs is that now virtually everyone has a camera on their phone, and we still have no good evidence. UFOs could be the result of some psychological, social, or scientific phenomenon, and I'm all for investigating that, but there is no reason to jump to ETs, and given that stance it is beyond the scope of the PC. "Extraordinary claims ..." etc. BTW, in the many SETI conferences I've attended I don't recall a single paper on UFOs. And although the broader field of astrobiology prides itself on its interdisciplinarity, again UFOs have seemed a bridge too far.

Regarding strategic distance I am reminded of the time von Daniken invited me to one of his conferences, all expenses paid, to Geneva. It was tempting, but I turned him down. I later saw the conference brochure, including slick photos of the participants, implying they supported von Daniken's hypothesis. On the other hand I did earlier bring up Sagan and the 1969 UFO AAAS session. I think the difference here is that the SETI PC has a specific purpose, whereas the AAAS is a much broader umbrella for ideas, including far out ones.

We have to keep an open mind, but was it Sagan or Feynman who said an open mind is good as long as your brains don't fall out. Nonetheless, this is an interesting case of negotiating disciplinary boundaries.

Steve

Steven J. Dick
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[10380-4](#)

Website <http://stevenjdick.com/index.html>

On Apr 7, 2021, at 3:42 PM, Eghigian, Greg <(b) (6)> wrote:

I share Kathryn's interest in hearing everyone's perspective here – very enlightening. I also find her intervention here quite helpful. The shared research program as being one driven primarily by astronomy goes back to SETI's very beginnings. One therefore needs to ask whether new information or changing developments in research more generally leads one to now question this anchoring.

From my perspective, I would add that I see nothing in the world of recent ufology and UFO sightings that leads me to believe we have seen any new evidence or developments on that side of things that would compel one to reconsider things. This includes the revelations since 2017 about AATIP.

By this I am not saying that the governing assumption here – that UAP do not fall under the jurisdiction of SETI – should not be questioned. I'm simply saying, I see no new compelling UFO evidence – nothing that we haven't seen or heard about for decades before – leads one down that path. It may be, however, that SETI researchers today think that a "hard" boundary is no longer defensible for other reasons. And that seems to be what I am hearing from some of you here.

Greg Eghigian
Professor of History

Department of History
108 Weaver Building
Penn State University
University Park, PA 16802

Ph: (b) (6)
Fax: 814-863-7840
Email: (b) (6)

From: Kathryn E L Denning <(b) (6)>
Sent: Wednesday, April 7, 2021 3:16 PM
To: (b) (6) <(b) (6)>
(b) (6) <(b) (6)>
Cc: Kopparapu, Ravi Kumar (GSFC-6990)
<ravikumar.kopparapu@nasa.gov>; Hector Socas-Navarro
<(b) (6)> Eghigian, Greg <(b) (6)>
STEVEN DICK <(b) (6)>
(b) (6) <(b) (6)> Julia
DeMarines <(b) (6)> Chelsea
Haramia <(b) (6)> Margaret Turnbull
<(b) (6)> Franck Marchis
<(b) (6)> Clément Vidal
<(b) (6)> Anamaria Berea
<(b) (6)>
Subject: RE: [EXTERNAL] Re: IAA PC SETI UFO text

Yep, Jacob's correct, that happened. I was just thinking of Paul Davies too, and the diversity of papers etc that I've heard at IAA SETI events over the years. It makes it hard to generalize precisely about who we are and what we do and don't do. But overall, the Committee has been primarily focused on the astronomy, the possible outcomes of astronomy-based searches, and issues of ethics and policy related to that. I'm not sure how to characterize the many, many past discussions about transmissions (de novo and reply) or ways of communicating, but in general, these are all predicated on the idea of tremendous distance between us and putative aliens, discounting the idea that they're landing in the backyard. Simply put, I think the committee has generally held a common assumption that no, aliens aren't here, so to find them we must look far away.... although some have chosen occasionally to question that assumption, the main shared research program of this community is still primarily about the astronomy.

I do think that UFOs/UAPs are something of a special case in the broad terrain of extraterrestrial speculation, specifically because that is a cultural phenomenon and separate research community of its own, with some troubling

features at times. This tends to support the pragmatic argument for generally maintaining some strategic distance.

It's really interesting to be learning more about people's views. We haven't had many conversations like this lately.

Cheers,
KD

From: Jacob Haqq Misra <(b) (6)>
Sent: Wednesday, April 7, 2021 2:36 PM
To: Jason Wright <(b) (6)>
Cc: Kopparapu, Ravi Kumar (GSFC-6990) <ravikumar.kopparapu@nasa.gov>; Haqq-Misra, Jacob D. (GSFC-6062)[Science Collaborator] <(b) (6)>
Hector Socas-Navarro <(b) (6)> Eghigian, Greg <(b) (6)> STEVEN DICK <(b) (6)> Kathryn E L Denning <(b) (6)> Julia DeMarines <(b) (6)> Chelsea Haramia <(b) (6)> Margaret Turnbull <(b) (6)> Franck Marchis <(b) (6)> Clément Vidal <(b) (6)> Anamaria Berea <(b) (6)> <(b) (6)>
Subject: Re: [EXTERNAL] Re: IAA PC SETI UFO text

Jason, I actually remember attending an IAA PC seminar organized by Paul Davies many years ago, when there was a Post-detection committee. The talk was given by a researcher who was investigating DNA evidence for ETI, which would be motivated by the directed panspermia hypothesis. So my experience is that this committee is in fact about all possibilities for detecting ETI, including those beyond the tools of traditional astronomy.

On Wed, Apr 7, 2021 at 2:23 PM Jason Wright

<(b) (6)> wrote:

I think this paragraph is not a compromise at all; it is completely at odds with the rest of the document. It's basically saying that a scientific investigation into UFOs is in scope of the committee as long as 1) it's scientifically rigorous and 2) it's investigating them as alien technology.

If that's what we mean, I think we need to start over.

Again, I'm not saying we *can't* study UFOs as alien spacecraft scientifically. My understanding was that such work was simply not what this committee was about.

For instance, this committee also doesn't consider that there may be evidence of alien technology among archeological artifacts or in our DNA or in our thoughts and dreams. One can formulate perfectly scientific ways to consider those hypotheses as well, but I would consider them out of scope because they do not use the methods of astronomy and planetary science (to be fair, I also think these are not likely to be fruitful paths to follow for other reasons, which I also think about UFOs, but that's a separate argument).

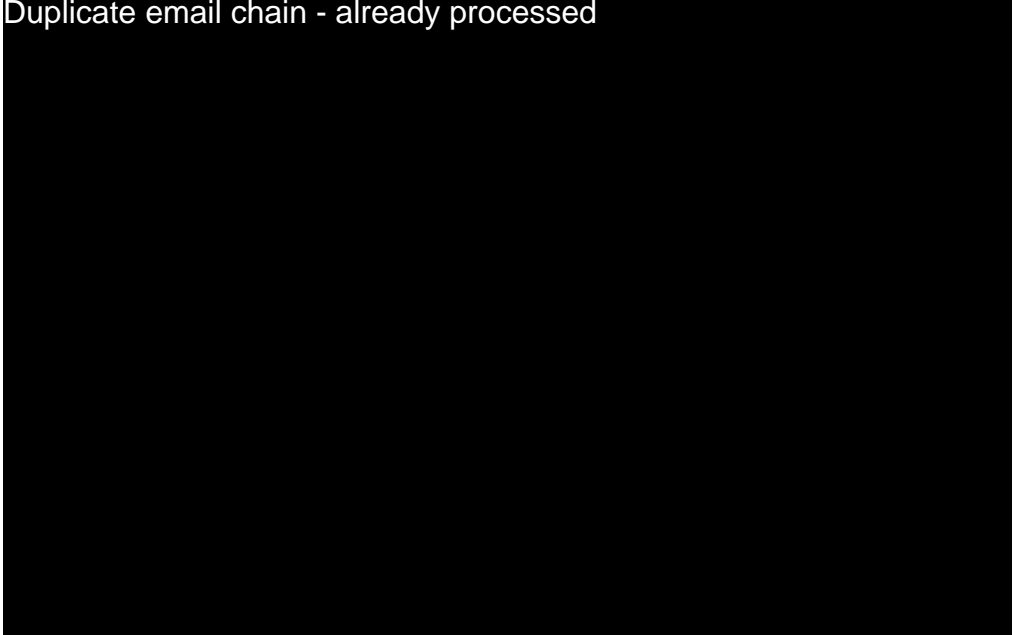
Perhaps the best way forward is for Jacob and Ravi to lead a second report for consideration by the full PC that argues for expanding the committee's scope to include UFOs?

But I've probably taken up too much space on this at this point. I'll let the rest of this ad hoc subcommittee weigh in.

Jason

On Wed, Apr 7, 2021 at 2:05 PM Kopparapu, Ravi Kumar (GSFC-6990) <ravikumar.kopparapu@nasa.gov> wrote:

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From: [Kathryn E L Denning](#)
To: [Clément Vidal](#); [STEVEN DICK](#)
Cc: [Eghigian, Greg](#); (b) (6); (b) (6); [Kopparapu, Ravi Kumar \(GSFC-6990\)](#); [Hector Socas-Navarro](#); (b) (6); [Julia DeMarines](#); [Chelsea Haramia](#); [Margaret Turnbull](#); [Franck Marchis](#); [Anamaria Berea](#); [Haqq-Misra, Jacob D. \(GSFC-6062\)](#)[Science Collaborator]
Subject: RE: [EXTERNAL] Re: IAA PC SETI UFO text
Date: Friday, April 9, 2021 1:17:13 PM

Hello Clément,

And thanks for this useful commentary. A few thoughts, for whatever these are worth:

- I am personally concerned by the following speculative scenario. ET visitation will actually happen or be already in some UFO report data, and the scientific community would have missed it or dismissed a priori. We would not have seen it because ufologists would have put too much noise in the data, and many of their pseudo-scientific investigations would have discredited entirely the worth of studying the ET visitation possibility

This concern is valid, in my opinion. I see this as the main question before us right now : what should this particular Committee, as a collective, do about it, how well equipped are we to try, and what is the cost/benefit ratio of such attempts in relation to SETI's central project which continues to be our responsibility. I continue to think that we are not collectively well-equipped to address this problem, although some of our individual members are.

- Of course, as you all, I'm also extremely concerned about the idea of opening the UFO door for the discipline. So maybe only the very best and most rigorous UFO-UAV scientists should be allowed to participate, maybe with a PhD level and/or academic affiliation as a requirement? By the way, could we make a list of respectable UFO-UAV scientists?

Alas, if we apply that requirement, it would exclude some other people who have been participating in IAA SETI sessions over the years. Also, a PhD in an irrelevant subject doesn't help much, and this is a common hallmark of "alt" research. I like the idea of compiling some names of those who have been doing rigorous work, though.

I simply don't know anything about the three UFO-related papers that were rejected this time by our Committee's referees. Maybe they were rigorously presented and seemed reasonable, but maybe they weren't. i.e. I don't know if the subject matter was the only problem. I also don't know if this is a common situation from year to year, as I've never sat on that committee. I've seen some pretty wacky New Age stuff submitted to astrobiology conferences though.

But I just want to underscore something here: in practice, the subject of local visitors HAS been addressed at various times in different IAA SETI sessions, despite the official prohibition. E.g.

- Schuch (who our newer members may not all know, but he has been a member of the IAA SETI group for a very long time, including on the Exec, and ran the SETI League for many years) presented on a case study of alleged ET tech years ago at IAA SETI
<http://resources.iaaseti.org/abst2005/shuch.pdf>

- Walton tackled this problem of demarcation previously within the context of the Committee: <http://resources.iaaseti.org/abst2005/walton.pdf>
- Schenkel talked at an IAA SETI session in the mid-2000s and around the same time he addressed this topic of local visitors <http://www.setileague.org/editor/travel.htm>
- I'm not sure of the exact content of this paper but it was certainly exploratory and allowed for the possibility of interstellar travel and the problem of spaceship detection <https://iafastro.directory/iac/archive/browse/IAC-14/A4/2/23542/>
- And as was recently mentioned on the list, we did have some papers at the IAA SETI satellite meeting in 2008: <http://resources.iaaseti.org/paris08.pdf>

A few more thoughts:

I don't see IAA SETI as an all-powerful entity which polices what is legitimate inquiry about aliens and what isn't. We're just not that organized. We're also not that effective at taking care of a variety of SETI-specific concerns.

I don't think of the UFO/UAV community as a tractable entity with a clear discipline: it's much more amorphous than that, and massive as well. And there will be highly disparate and varied positions from SETI researchers as well as UFO researchers. The "we" and "they" break down into many differing voices.

I see the merit to your idea below, Clément, but for whatever it's worth, my own experience doing extensive work regarding the relationship between "alternative" and "mainstream" archaeology researchers indicates that if one wants to promote dialogue across such dividing lines, that's most effectively done informally, one-on-one or in small groups, with individual authors engaging in dialogues or joint author projects, and visiting each other's conferences or online meetings. i.e. read a book, write to the author, have a conversation, see if it's useful, check out a meeting, gain some knowledge, and maybe present a report back to your disciplinary colleagues I don't think a formalistic top-down approach is the most effective strategy. But perhaps it's predictable that an anthropologist would say that :)

Seth Shostak would have some valuable input, I expect, given his extensive experience with public debates e.g. with Stanton Friedman and public events.

Best wishes to you all,
KD

From: Clément Vidal <(b) (6)>

Sent: Friday, April 9, 2021 6:12 AM

To: STEVEN DICK <(b) (6)>
Cc: Kathryn E L Denning <(b) (6)> Eghigian, Greg <(b) (6)> (b) (6)
(b) (6) Kopparapu, Ravi Kumar (GSFC-6990) <ravikumar.kopparapu@nasa.gov>;
Hector Socas-Navarro <(b) (6)> (b) (6) Julia DeMarines
<(b) (6)> Chelsea Haramia <(b) (6)> Margaret Turnbull
<(b) (6)> Franck Marchis <(b) (6)> Anamaria Berea
<(b) (6)>
Subject: Re: [EXTERNAL] Re: IAA PC SETI UFO text

Dear all,

Thanks for this stimulating conversation. Here are three sets of ideas, I haven't integrated them in the document yet as I'm not sure whether they really fit the purpose of the primary document.

The concern

I am personally concerned by the following speculative scenario. ET visitation will actually happen or be already in some UFO report data, and the scientific community would have missed it or dismissed a priori. We would not have seen it because ufologists would have put too much noise in the data, and many of their pseudo-scientific investigations would have discredited entirely the worth of studying the ET visitation possibility. Of course, as you all, I'm also extremely concerned about the idea of opening the UFO door for the discipline. So maybe only the very best and most rigorous UFO-UAV scientists should be allowed to participate, maybe with a PhD level and/or academic affiliation as a requirement? By the way, could we make a list of respectable UFO-UAV scientists?

A typology of interactions for ufology and astrobiology

Since the relations between ufology and the scientific community have been tense and distrustful, different ufologists and astrobiologists are likely to have different positions on their suitable interactions. The situation is very similar to the question of the interaction between science and religion.

I propose to articulate a typology of interactions between ufology and astrobiology inspired by (Polkinghorne 1998), so we can at least agree on how much we disagree.

- (1) conflict between the disciplines
- (2) independence of the disciplines
- (3) dialogue between the disciplines where they overlap
- (4) integration of both into one field

(from: Polkinghorne, J. C. 1998. *Science and Theology: An Introduction*. London : Minneapolis, Minn: SPCK ; Fortress Press.)

We could make explicit each of our respective positions, and possibly later invite the astrobiological & ufology communities to also do so.

eg Clément Vidal would lean towards (3), saying that UFO reports should attract the attention of scientists, but only after going through several tight scientific filters (e.g. multiple independent observations, sufficient data quality, the phenomenon is repeating, future tests or predictions may be possible, etc.)

Leveraging the passion of ufologists for science education and citizen astrobiology projects

Conflicts arise when there is a common goal. Ufologists and astrobiologists have a passion in a common goal: the possibility of finding extraterrestrial life!

Only the methods to conduct this investigation change (see Baird, John C. 1989. *The Inner Limits of Outer Space*. Dartmouth.)

I do like Sagan's position to study UFO reports as an opportunity for science education. As a side note, his open-mindedness to approach ufology fits with open mindedness to explore the interaction between spirituality / religion and science. As a long term strategy, we might try to redirect or broaden the public and ufologist passion towards citizen astrobiology projects (e.g.:

<https://planethunters.org/>)

What do you think?

I hope this is helpful.

All the best,

Clément Vidal.

<http://www.clemvidal.com> | [@clemvidal](#)

[TEDx](#) | [Book](#) | [Patreon](#) | [Blog](#) | [EDU](#)

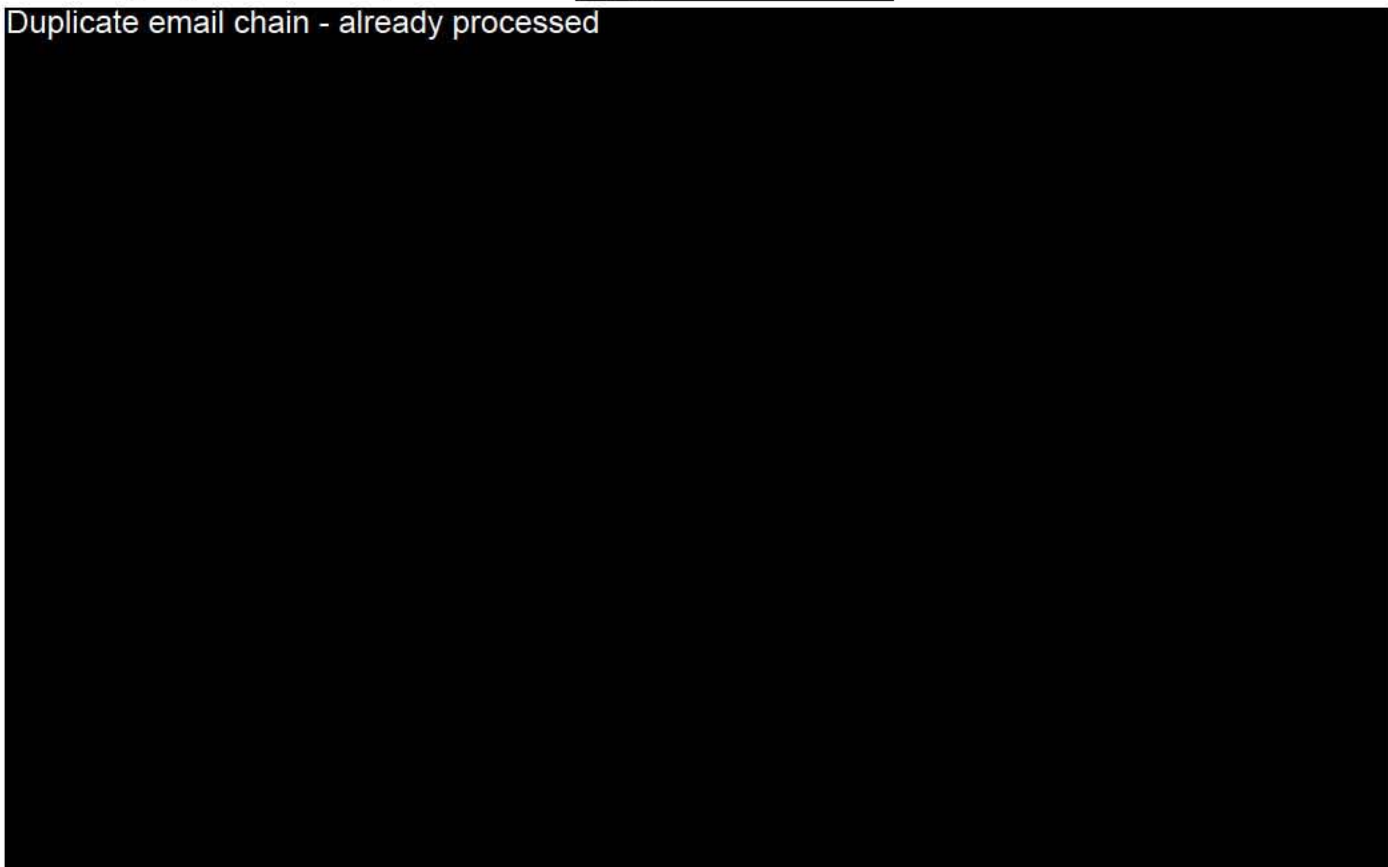
Center Leo Apostel, Vrije Universiteit Brussel

Krijgskundestraat 33. 1160 Brussels, Belgium

Tel: +32 2 644 26 77

On Thu, 8 Apr 2021 at 15:19, STEVEN DICK <(b) (6)> wrote:

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Requester: John Greenewald

Request #: 21-HQ-F-00603

11 page(s) containing duplicate information is/are held in the file.

From: [Eghigian, Greg](#)
To: (b) (6) [Kathryn E L Denning](#)
Cc: [Kopparapu, Ravi Kumar \(GSFC-6990\)](#); [STEVEN DICK](#); (b) (6) [Hector Socas-Navarro](#); (b) (6) [Julia DeMarines](#); [Chelsea Haramia](#); [Margaret Turnbull](#); [Franck Marchis](#); [Clément Vidal](#); [Anamaria Berea](#); [Haqq-Misra, Jacob D. \(GSFC-6062\) \[Science Collaborator\]](#)
Subject: Re: [EXTERNAL] Re: IAA PC SETI UFO text
Date: Wednesday, April 14, 2021 1:40:49 PM

I've added just a couple comments in the document, centering on wording.

Greg Eghigian
Professor of History

Department of History
108 Weaver Building
Penn State University
University Park, PA 16802
Ph: (b) (6)
Fax: 814-863-7840
Email: (b) (6)

From: Jason Wright <(b) (6)>
Sent: Wednesday, April 14, 2021 10:45 AM
To: Kathryn E L Denning <(b) (6)>
Cc: [Kopparapu, Ravi Kumar \(GSFC-6990\)](#) <ravikumar.kopparapu@nasa.gov>; [STEVEN DICK](#) <(b) (6)> [Eghigian, Greg](#) <(b) (6)> <(b) (6)> <(b) (6)> [Hector Socas-Navarro](#) <(b) (6)> <(b) (6)> <(b) (6)> [Julia DeMarines](#) <(b) (6)> [Chelsea Haramia](#) <(b) (6)> [Margaret Turnbull](#) <(b) (6)> [Franck Marchis](#) <(b) (6)> [Clément Vidal](#) <(b) (6)> [Anamaria Berea](#) <(b) (6)>
Subject: Re: [EXTERNAL] Re: IAA PC SETI UFO text

Hi, all. Things have been quiet for a few days so I'm interpreting that as people having had their say. I have a sense that we have converged, so I've produced another draft that may be nearly final:

<https://docs.google.com> [redacted]

Kathryn: the Walton link is just to an abstract; is that very interesting paper available somewhere? I cannot find it.

Here are some updates I've made to the document, attempting to incorporate our discussion and capture our diverse viewpoints.

- I've added this language:

The committee does occasionally accept abstracts for topics outside its scope at its meetings, and so the exclusion of UFO topics is not absolute, however there is a strong expectation that such abstracts will not be accepted.

I think this both reflects the reality that we have had many abstracts over the years that are out of scope and also leaves the door open for them to be accepted in special circumstances, which is a step towards Jacob and

Ravi's position.

- I have added a summary explaining to the PC how this discussion went. (This could probably use tweaking by people).

- I have also added some bullets to our recommendations, pointing out that Klara's effort to define a broader scope of the committee and Clément and others' desire to probe the boundaries of SETI and UFO work more broadly seems to have support from committee members.

- Finally, we have a placeholder for how interested people can learn more about SETI with no text. **Would someone like to fill that in?**

- **Please look over these and provide comments. Please also add your name if you would like to be listed as an author** (I have not added anyone's name but mine since I don't want to presume to add your name until you've seen what I think is a near final version).

Jason

On Fri, Apr 9, 2021 at 1:15 PM Kathryn E L Denning <(b) (6)> wrote:

Thanks Ravi – personally, I've been glad to learn more about your views.

I'm going to sit back for a bit and let others catch up and weigh in.

I do think there's utility in a paper that carefully makes the case for UAP relevance to SETI, and I'd like to hear it at a conference, but I don't know if the Committee would adopt it as a formal position.

Cheers,

KD

From: Kopparapu, Ravi Kumar (GSFC-6990) <ravikumar.kopparapu@nasa.gov>

Sent: Friday, April 9, 2021 7:25 AM

To: STEVEN DICK <(b) (6)> Kathryn E L Denning <(b) (6)>

Cc: Eghigian, Greg <(b) (6)> Haqq-Misra, Jacob D. (GSFC-6062) [Science Collaborator]

<(b) (6)> <(b) (6)> Hector Socas-Navarro <(b) (6)>

<(b) (6)> Julia DeMarines <(b) (6)> Chelsea Haramia

<(b) (6)> Margaret Turnbull <(b) (6)> Franck Marchis

<(b) (6)> Clément Vidal <(b) (6)> Anamaria Berea

<(b) (6)>
Subject: Re: [EXTERNAL] Re: IAA PC SETI UFO text

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Requester: John Greenewald

Request #: 21-HQ-F-00603

9 page(s) containing duplicate information is/are held in the file.

From: [Hector Socas-Navarro](#)
To: STEVEN DICK
Cc: [Jason Wright](#); [Kathryn E L Denning](#); [Kopparapu, Ravi Kumar \(GSFC-6990\)](#); [Eghigian, Greg](#); [Haqq-Misra, Jacob D. \(GSFC-6062\)\[Science Collaborator\]](#); (b) (6); [Julia DeMarines](#); [Chelsea Haramia](#); [Margaret Turnbull](#); [Franck Marchis](#); [Clément Vidal](#); [Anamaria Berea](#)
Subject: Re: [EXTERNAL] IAA PC SETI UFO text
Date: Thursday, April 15, 2021 6:17:56 AM

That's because the Moon has a very old surface. An ETA that may have fallen there millions of years ago, or even more, might still be visible. Earth, on the other hand, has a very dynamic surface.

Hector

On Wed, Apr 14, 2021 at 8:08 PM STEVEN DICK <(b) (6)> wrote:

Interesting reporting regarding Jim Benford's article in the recent Astrobiology journal to search for artifacts (SETA) on the Moon. But not on Earth.

https://www.space.com/intelligent-aliens-search-artifacts-moon?utm_source=Selligent&utm_medium=email&utm_campaign=SDC_Newsletter&utm_content=SDC_Newsletter+&utm_term=3440728

Steven J. Dick
21406 Clearfork Ct
Ashburn, VA 20147
(b) (6) (cell)
(b) (6)

Space, Time, and Aliens: Collected Works on Cosmos and Culture
<https://www.springer.com/gp/book/9783030416133>

Astrobiology, Discovery, and Societal
Impact www.cambridge.org/9781108426763

Classifying the Cosmos. <https://link.springer.com/book/10.1007/978-3-030-10380-4>

Website <http://stevenjdick.com/index.html>

On Apr 14, 2021, at 10:45 AM, Jason Wright <(b) (6)> wrote:

Hi, all. Things have been quiet for a few days so I'm interpreting that as people having had their say. I have a sense that we have converged, so I've produced another draft that may be nearly final:

<https://docs.google.co>

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- I have also added some bullets to our recommendations, pointing out that Klara's effort to define a broader scope of the committee and Clément and others' desire to probe the boundaries of SETI and UFO work more broadly seems to have support from committee members.

- Finally, we have a placeholder for how interested people can learn more about SETI with no text. **Would someone like to fill that in?**

- Please look over these and provide comments. Please also add your name if you would like to be listed as an author (I have not added anyone's name but mine since I don't want to presume to add your name until you've seen what I think is a near final version).

Jason

On Fri, Apr 9, 2021 at 1:15 PM Kathryn E L Denning <(b) (6)> wrote:

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Cheers,

KD

From: Kopparapu, Ravi Kumar (GSFC-6990)

<ravikumar.kopparapu@nasa.gov>

Sent: Friday, April 9, 2021 7:25 AM

To: STEVEN DICK <(b) (6)> Kathryn E L Denning
<(b) (6)>

Cc: Eghigian, Greg <(b) (6)> Haqq-Misra, Jacob D. (GSFC-6062)
[Science Collaborator] <(b) (6)> Hector

Socas-Navarro <(b) (6)> Julia

DeMarines <(b) (6)> Chelsea Haramia

<(b) (6)> Margaret Turnbull <(b) (6)>

Franck Marchis <(b) (6)> Clément Vidal

<(b) (6)> Anamaria Berea <(b) (6)>

Subject: Re: [EXTERNAL] Re: IAA PC SETI UFO text

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Requester: John Greenewald

Request #: 21-HQ-F-00603

17 page(s) containing duplicate information is/are held in the file.

From: [Kopparapu, Ravi Kumar \(GSFC-6990\)](#)
To: [Clément Vidal](#)
Cc: [Haqq-Misra, Jacob D. \(GSFC-6062\)\[Science Collaborator\]](#)
Subject: FW: [EXTERNAL] Re: IAA PC SETI UFO text
Date: Thursday, April 15, 2021 5:29:18 PM

Hi Clément,
Copying just you and Jacob.

The point you raised about where else the UAP science investigations would be submitted is a point that Jacob and I raised to others in the committee. However, the response seems to be “not SETI”. While there is definitely a need for UAP studies to prove relevance to SETI, if they are not included in any of the science meetings either SETI or not, how else would they make a case for a scientific investigation? The investigations I am talking about are not witness accounts that may be more interest to sociologists. The ones I am talking about are actual instrument scientific investigation cases that the UAP researchers could present. It is a self-fulfilling prophecy of a scientific investigation: UAP are not scientific because no scientific evidence of their nature is presented. And you can't present them at scientific conferences....because they are not proved to be scientific. The google document says “taboo” should be prevented, but it literally puts in writing it without actually saying the word.

To be clear, I do not subscribe to the idea UAP are ET or relevant to SETI. I don't know what they are. But to ***not*** at least hear the case in case it might be, and shut down all avenues, is just intellectually closing oneself and perpetuates distrust between the communities.

Ravi

From: Clément Vidal <(b) (6)>
Date: Thursday, April 15, 2021 at 4:22 PM
To: Kathryn E L Denning <(b) (6)>
Cc: STEVEN DICK <(b) (6)> "Eghigian, Greg" <(b) (6)> "Haqq-Misra, Jacob D. (GSFC-6062)[Science Collaborator]" <(b) (6)> <(b) (6)> <(b) (6)> "Kopparapu, Ravi Kumar (GSFC-6990)" <ravikumar.kopparapu@nasa.gov>, Hector Socas-Navarro <(b) (6)> <(b) (6)> Julia DeMarines <(b) (6)> Chelsea Haramia <(b) (6)> Margaret Turnbull <(b) (6)> Franck Marchis <(b) (6)> Anamaria Berea <(b) (6)>
Subject: Re: [EXTERNAL] Re: IAA PC SETI UFO text

Dear all,

Thanks Jason for compiling the new text. I added a suggestion to add UFO/UAV organizations that do

work that we would consider acceptable (it could be debunking work too). Maybe as Kevin Knuth suggested, the Scientific Coalition for UAP Studies (SCU), <https://www.explorescu.org/> ?

I see now more clearly the scope limitation of SETI IAA, which by focusing on using astronomy and astrophysics knowledge and techniques, leaves out a set of speculative possibilities regarding extraterrestrials here on Earth. These include:

- UFO-UAV phenomena that could be studied scientifically
- SETA on Earth / ET visitation
- Panspermia (e.g. x-ray resistant bacteria)
- Directed panspermia (actually in between SETA and panspermia)
- etc.

Studying such possibilities may indeed require different or complementary expertise and research strategy. However, if SETI IAA doesn't cover this set of possibilities, which organization could or would want to?

A core problem is that bold pseudo-scientific claims of the UFO community have led scientists to associate any claim/search of extraterrestrial life on Earth as pseudo-scientific. I don't think the road would be easy to change this wrong association.

Thanks for your thoughtful comments, Kathryn, below are a few replies.

On Fri, 9 Apr 2021 at 19:15, Kathryn E L Denning <(b) (6)> wrote:

I like the idea of compiling some names of those who have been doing rigorous work, though.

Indeed, it's important to know an order of magnitude of many potential serious UFO/UAV researchers we would want to open a door to (1, 10, 100?). If it's in the 1-10 range, we might try to identify them and work directly with them if appropriate.

But I just want to underscore something here: in practice, the subject of local visitors HAS been addressed at various times in different IAA SETI sessions, despite the official prohibition. E.g.(...)

Great list, thanks for compiling this.

there will be highly disparate and varied positions from SETI researchers as well as UFO researchers. The "we" and "they" break down into many differing voices.

Agreed, we need to be careful about stereotypes...

I don't think a formalistic top-down approach is the most effective strategy. But perhaps it's

| predictable that an anthropologist would say that :)

I'm proposing a longer-term vision, not a specific strategy to reach it. The time-proven bottom-up strategies you propose (one-on-one meetings, small study groups, etc.) could help to reach a longer-term vision, as well as some top-down ones -if and when possible and desirable!

| Seth Shostak would have some valuable input, I expect, given his extensive experience with public debates e.g. with Stanton Friedman and public events.

I agree it would be nice to have his input!

Best wishes,
Clément.

From: Clément Vidal <(b) (6)>
Sent: Friday, April 9, 2021 6:12 AM
To: STEVEN DICK <(b) (6)>
Cc: Kathryn E L Denning <(b) (6)> Eghigian, Greg <(b) (6)>
(b) (6) (b) (6) Kopparapu, Ravi Kumar (GSFC-6990)
<ravikumar.kopparapu@nasa.gov>; Hector Socas-Navarro <(b) (6)>
(b) (6) Julia DeMarines <(b) (6)> Chelsea Haramia
<(b) (6)> Margaret Turnbull <(b) (6)> Franck Marchis
<(b) (6)> Anamaria Berea <(b) (6)>
Subject: Re: [EXTERNAL] Re: IAA PC SETI UFO text

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Request #: 21-HQ-F-00603

13 page(s) containing duplicate information is/are held in the file.

From: [Eghigian, Greg](#)
To: STEVEN DICK; (b) (6)
Cc: [Clément Vidal](#); [Kathryn E L Denning](#); (b) (6) [Kopparapu, Ravi Kumar \(GSFC-6990\)](#); [Hector Socas-Navarro](#); (b) (6) [Julia DeMarines](#); [Chelsea Haramia](#); [Margaret Turnbull](#); [Franck Marchis](#); [Anamaria Berea](#); [Haqq-Misra, Jacob D. \(GSFC-6062\)](#)[Science Collaborator]
Subject: Re: [EXTERNAL] Re: IAA PC SETI UFO text
Date: Friday, April 16, 2021 9:42:36 AM

I concur completely with Steve's perspective here.

Greg

Greg Eghigian
Professor of History

Department of History
108 Weaver Building
Penn State University
University Park, PA 16802
Ph: (b) (6)
Fax: 814-863-7840
Email: (b) (6)

From: STEVEN DICK <(b) (6)>
Sent: Friday, April 16, 2021 9:26 AM
To: (b) (6) <(b) (6)>
Cc: [Clément Vidal](#) <(b) (6)> [Kathryn E L Denning](#) <(b) (6)> [Eghigian, Greg](#) <(b) (6)> <(b) (6)> <(b) (6)> [Kopparapu, Ravi Kumar \(GSFC-6990\)](#) <ravikumar.kopparapu@nasa.gov>; [Hector Socas-Navarro](#) <(b) (6)> <(b) (6)> <(b) (6)> [Julia DeMarines](#) <(b) (6)> [Chelsea Haramia](#) <(b) (6)> [Margaret Turnbull](#) <(b) (6)> [Franck Marchis](#) <(b) (6)> [Anamaria Berea](#) <(b) (6)> <(b) (6)> <(b) (6)>
Subject: Re: [EXTERNAL] Re: IAA PC SETI UFO text

I think you have nicely laid out the two competing sentiments and the two-pronged approach, Jason. I have always advocated that the few percent of UFO reports that remain unexplained deserve further study, whether social, psychological, or scientific, and that may also be the sentiment of others in the “inclusive” group. The immediate question, though, is the role of the IAA SETI PC. Unless we want to expand the scope of the PC to include UFOs, a bold move that I would not rule out in the longer term if that’s what others want, I would accept the current document roughly as is. I would not object to Franck Marchis’s sentence about encouraging future scientific and societal impact studies on UFOs. But expanding the scope to UFOs any further than that would have practical problems that have already been mentioned, notably finding reputable UFO experts to evaluate reports, the extent to which this

would come to dominate the PC and press coverage, how this might affect the reputation of the PC, etc. And I have the feeling the full PC would not endorse this expansion without the longer-term study.

Perhaps we should take a hint from the astrobiology journals that represent the scope of the field. Although they have laudably expanded to include the search for artifacts (SETA) such as Benford's recent article I sent earlier, none of them, to my knowledge, include articles on UFOs. Someone correct me if I'm wrong.

So the bottom line is I endorse your document and the two-pronged approach. If the longer-term document develops some interesting arguments, we can always revisit the decision.

Steve

Steven J. Dick
21406 Clearfork Ct
Ashburn, VA 20147

(b) (6) cell)

(b) (6)

Space, Time, and Aliens: Collected Works on Cosmos and Culture

<https://www.springer.com/gp/book/9783030416133>

Astrobiology, Discovery, and Societal

Impact www.cambridge.org/9781108426763

Classifying the Cosmos. <https://link.springer.com/book/10.1007/978-3-030-10380-4>

Website <http://stevenjdick.com/index.html>

On Apr 15, 2021, at 10:10 PM, Jason Wright <(b) (6)> wrote:

Based on the comments, I think there are two broad, competing sentiments about this document:

The first is a more "UFO inclusive" one, which includes the desires to:

- Explicitly lay down standards by which UFO studies could be included in PC activities
- State which UFO studies or groups are doing scientifically sound research
- Explore the state of UFO studies generally
- Rehabilitate UFO inquiry by having the PC endorse and promote a scientifically rigorous study of them

The second is more "UFO exclusive" seeking to:

- Have the PC maintain a "strategic distance" from UFO studies
- Produce a short document that defines UFO studies as out of scope (but explaining that they are nonetheless occasionally considered)
- Not weigh in on the current state of UFO studies in any way
- Endorse the desire of PC members *individually* to explore issues related to UFO studies

(Obviously, this is an overgeneralization, and individual members have more nuanced views than these).

In drafting the current document I have so far followed Steve's suggestion, which attempts to thread this needle and reach consensus by separating our efforts here into two parts:

1)

- Produce a short document simply explaining why UFO studies have been and are out of scope
- Make recommendations to formalize this in our terms of reference

2)

- Endorse a separate, longer effort to define the PC's scope more generally, especially the location of its boundary with UFO studies, essentially as outlined in Klara's document
- Acknowledge the desire of some on the committee to evaluate the state of the art of UFO studies as part of that effort
- Acknowledge the interest in broadening the PC's scope to include UFO studies, and the possibility that the longer effort may end with such a recommendation

While not exactly a compromise, this approach leaves the door open to the "UFO inclusive" goals, as a separate effort the PC can undertake from this one. This two-prong approach is, obviously, my preference, but it may not have majority support here.

My question to the whole subcommittee is: is this two-prong approach enough of a compromise to get, if not consensus, broad support from this subcommittee? That is, given the framing above, **would you endorse the document roughly as-is?**

If not we may want to explore other ways to blend the perspectives, perhaps with the production of a minority report.

On Thu, Apr 15, 2021 at 4:22 PM Clément Vidal <(b) (6)> wrote:

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Requester: John Greenewald

Request #: 21-HQ-F-00603

16 page(s) containing duplicate information is/are held in the file.

From: [Jacob Haqq Misra](#)
To: [Hector Socas-Navarro](#)
CC: [Jason Wright](#); [Jacob Haqq Misra](#); [STEVEN DICK](#); [Anamaria Berea](#); [Kathryn E L Denning](#); [Kopparapu, Ravi Kumar \(GSFC-6990\)](#); [Eghigian, Greg](#); [Julia DeMarines](#); [Chelsea Haramia](#); [Margaret Turnbull](#); [Franck Marchis](#); [Clément Vidal](#); [Haqq-Misra, Jacob D. \(GSFC-6062\)](#) | Science Collaborator (b) (6)
Subject: Re: [EXTERNAL] IAA PC SETI UFO text
Date: Saturday, April 17, 2021 10:06:38 AM

Thanks Jason. I agree with the sentence you added. But as it stands now, I still do not feel comfortable signing because it seems to me that the document now makes conflicting recommendations:

- Add to the terms of reference a UFO exclusion reading “the committee’s work excludes studies of UFOs or Unidentified Aerial Phenomena”
- The committee should perform further work that more fully explores the boundaries between UFO studies and astronomical SETI, the extent to which they complement or diverge from one another, and explaining under what circumstances UFO abstracts could be accepted

The second bullet indicates that more work is needed to understand any possible connections between UFOs/UAP and SETI. If we acknowledge that more work is needed, then it does not make sense to me that we “exclude” such topics prematurely. Personally, I would like to see this “further work” performed before the committee issues any statement at all on the relevance or exclusion of UFOs/UAP.

But that is just my opinion. It is seeming unlikely that we will find a compromise, so I can just omit my name from this paper. I would very much be interested in contributing to another paper that actually tries to identify areas of overlap and define criteria for exactly how abstracts can/should be evaluated for relevance.

Jacob

On Sat, Apr 17, 2021 at 9:56 AM Hector Socas-Navarro <(b) (6)> wrote:
> **All:** I would like to get a sense of the group if we’re close, or if we need to try a different approach.

How do you want to assess this? Maybe have a poll? I’m happy with the current draft, FWIW

Hector

On Sat, Apr 17, 2021 at 2:32 PM Jason Wright <(b) (6)> wrote:
Hi, Jacob. Thanks for your input.

Under the two prong-approach, we will recommend to the full PC that there be a larger effort to define the scope of the committee with respect to UFOs and under what circumstances we would accept their abstracts. I’ve re-written the fifth recommendation to read:

- The committee should perform further work that more fully explores the boundaries between UFO studies and astronomical SETI, the extent to which they complement or diverge from one another, and explaining under what circumstances UFO abstracts could be accepted

I think this accomplishes what you’re after?

Franck, I’ve reworded your suggested addition in a way that I think makes it more clear that we are simply appreciating others that do such work, not referring to the PC’s work. Let me know if I’ve retained your meaning.

Anamaria and **Franck,** I’ve tried to scrupulously avoid characterizing any existing UFO research (good or bad) except to acknowledge that good work can be done. Under the two-prong approach, such assessments are a larger project. I think Klara’s outline provides a good map for that.

All: I would like to get a sense of the group if we’re close, or if we need to try a different approach. I thank Steven and Greg and Jacob for their feedback on this so far.

Jason

PS—I thought this group would be interested to learn that Avi Loeb is the featured speaker at the “Contact in the Desert” show this summer:

<https://contactinthedesert.com/home/about-the-show/>

On Sat, Apr 17, 2021 at 8:49 AM Jacob Haqq Misra <(b) (6)> wrote:

Hi Jason,

Thanks for sending the updated document. I do not feel comfortable signing my name to this, mostly because I do not feel that we have actually addressed my initial concern at the start of this conversation.

The document states in many places that study of UAP/UFOs is "excluded" by the committee. However, at the end of the document is this sentence: *"Finally, we note that the committee does occasionally accept abstracts for topics outside its scope at its meetings, however we expect such exceptions to be rare and well justified."*

The question I am interested in is this: **under what specific conditions would an out-of-scope abstract be accepted by the committee?** This has broad relevance beyond UAP/UFOs. I can imagine a situation in which the committee has to decide whether or not to accept abstracts from a wide range of non-astronomy disciplines (history, anthropology, Earth science, etc.) that might make a strong case for relevance to SETI. I do not think it is sufficient to say that there are occasional "exceptions" without explicitly explaining how exceptions will be evaluated.

The entire conversation started because of the lack of transparency in how three submitted UFO abstracts were rejected by the committee as "out of scope" but with no additional details provided. In my mind, any paper we write should directly address the process by which abstracts are evaluated and under what specific conditions exceptions could be made.

Jacob

On Fri, Apr 16, 2021 at 3:35 PM STEVEN DICK <(b) (6)> wrote:

Hi Anamaria,

Your points are well taken, and I think the gist of your last paragraph could be added to the draft.

Sorry to hear about your vaccine side effects, but all for a good cause.

Steve

Steven J. Dick
21406 Clearfork Ct
Ashburn, VA 20147
(b) (6) (cell)
(b) (6)

Space, Time, and Aliens: Collected Works on Cosmos and Culture

<https://www.springer.com/gp/book/9783030416133>

Astrobiology, Discovery, and Societal Impact www.cambridge.org/9781108426763

Classifying the Cosmos. <https://link.springer.com/book/10.1007/978-3-030-10380-4>

Website <http://stevenjdick.com/index.html>

On Apr 15, 2021, at 4:10 PM, Anamaria Berea <(b) (6)> wrote:

I know I am coming late to the party (very sorry, I have been dealing with terrible side effects from the COVID vaccine, plus the end of the academic year), but I subscribe to the ideas in the draft that Jason posted and, as a member of the committee, but not an astronomer, I would like to add my perspective as an economist and data scientist with the following:

While there is a lot of open data that can be accessed for analysis regarding UAPs and UFOs (per Kevin's email, which I also whole heartedly liked in detail and reasoning), there are no standards for collecting and storing these data, whether these are witness accounts, videos or images. Currently, in data science, video and image algorithms are sophisticated enough to extract details unavailable to human experts, but without human labeling or metadata, the results can be potentially biased (as we currently see in AI and NLP algorithms that are fed specific types of datasets). On another hand, we know from multiple year long studies of social media data that human accounts and witnesses can also be very biased, there is a lot of confirmation bias in opinion polls, and therefore we cannot converge to one scientific truth based on human subjects unstandardized data

alone, without having surveys or experiments designed with the very specific goal of studying the UAPs.

This does not mean that the phenomenon cannot be studied. On the contrary, any phenomenon that has "unknown" attached to it should be studied, but, since within an international organization such as IAA we need to conform to scientific and methodological rigors, which include data protocols, UAPs currently do not have such data protocols for collection, analysis and dissemination of results that are similar to SETI observations that come from instruments, scientific experiments and thorough collections.

Let me know if you would like to include this and I will add it to the draft.

Best,

Anamaria Berea, PhD, PhD
Associate Term Professor
Computational and Data Sciences
Director of Graduate Studies
Computational Social Sciences
Department of Computational and Data Sciences
College of Science
MAIS Concentration Head for CSS
College of Humanities and Social Sciences
George Mason University
ph: 703-993-3624
Research Hall
Room 226, MSN 6A12
Fairfax, VA, 22030

"I think it is possible for ordinary people to choose to be extraordinary." – Elon Musk


On Apr 15, 2021, at 6:38 AM, Hector Socas-Navarro <(b) (6)> wrote:

Hi Jason,

I like this draft, thanks for writing it. I only left some minor comments

Hector

On Wed, Apr 14, 2021 at 3:45 PM Jason Wright <(b) (6)> wrote:
Duplicate email chain - already processed



Deletion Page

Requester: John Greenewald

Request #: 21-HQ-F-00603

12 page(s) containing duplicate information is/are held in the file.

From: [Klara Anna Capova](#)
To: [Kathryn E L Denning](#)
Cc: [Anamaria Berea](#); [Chelsea Haramia](#); [Clément Vidal](#); [Eghigian, Greg](#); [Franck Marchis](#); [Hector Socas-Navarro](#); [Jacob Haqq Misra](#); [Jason Wright](#); [Julia DeMarines](#); [Kopparapu, Ravi Kumar \(GSFC-6990\)](#); [Margaret Turnbull](#); [STEVEN DICK](#); [Haqq-Misra, Jacob D. \(GSFC-6062\)](#)[Science Collaborator]
Subject: Re: [EXTERNAL] IAA PC SETI UFO text
Date: Saturday, April 17, 2021 10:51:46 AM

Hello everyone,

Really interesting topics for discussions, glad to see the conversation keeps going. I am have a tight work schedule until end of April; looking forward to catching up then.

Kind regards,

Klara

On Sat, 17 Apr 2021 at 16:38, Kathryn E L Denning <(b) (6)> wrote:

Hi all, just a quick note to say that I am still interested in this conversation but can't review developments from the past week and weigh in until Monday 19th at the earliest.

Cheers,

KD

From: Jason Wright <(b) (6)>
Sent: Saturday, April 17, 2021 10:19 AM
To: Hector Socas-Navarro <(b) (6)>
Cc: Jacob Haqq Misra <(b) (6)> STEVEN DICK <(b) (6)>
Anamaria Berea <(b) (6)> Kathryn E L Denning <(b) (6)>
Kopparapu, Ravi Kumar (GSFC-6990) <ravikumar.kopparapu@nasa.gov>; Eghigian, Greg <(b) (6)> <(b) (6)> Julia DeMarines <(b) (6)>
<(b) (6)> Chelsea Haramia <(b) (6)> Margaret Turnbull <(b) (6)> Franck Marchis <(b) (6)> Clément Vidal <(b) (6)>
Subject: Re: [EXTERNAL] IAA PC SETI UFO text

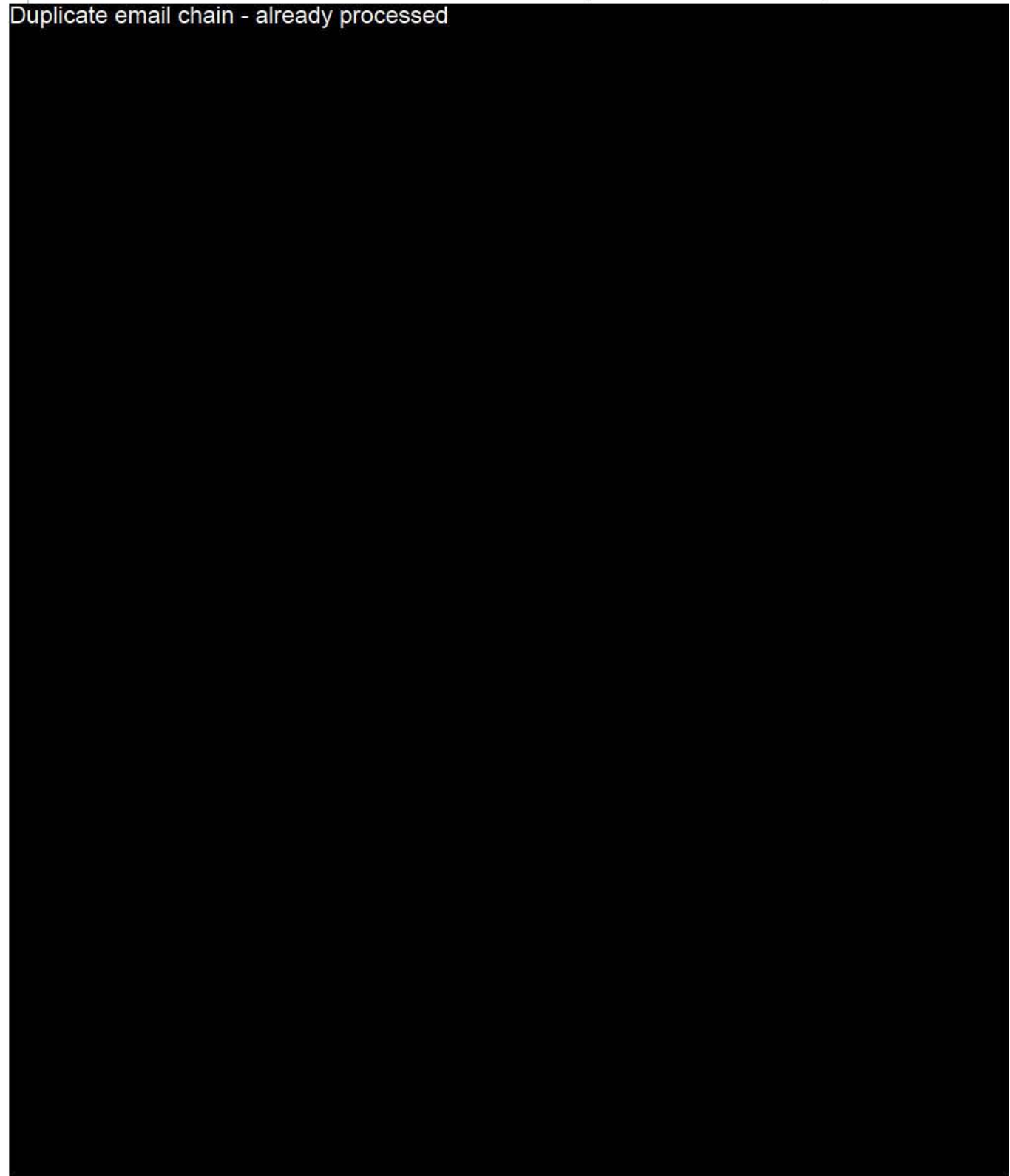
Yes, I'm thinking a poll right here in this thread. Right now I'm counting four 'yesses': Jason, Hector, Greg, Steve; and one 'no': Jacob. Alternatively people can add their names directly to the document.

If we have a supermajority of 'yesses' then I think we can polish and call this prong done. If we are close to evenly split or majority 'no', then I think we should re-evaluate.

Jason

On Sat, Apr 17, 2021 at 9:56 AM Hector Socas-Navarro <(b) (6)> wrote:

Duplicate email chain - already processed



Deletion Page

Requester: John Greenewald

Request #: 21-HQ-F-00603

34 page(s) containing duplicate information is/are held in the file.

From: [Jacob Haqq Misra](#)
To: [Clément Vidal](#)
Cc: [Kopparapu, Ravi Kumar \(GSFC-6990\)](#); [Jacob Haqq Misra](#); [Haqq-Misra, Jacob D. \(GSFC-6062\)\[Science Collaborator\]](#)
Subject: [EXTERNAL] Re: Paradox of UAV/UFO research
Date: Wednesday, April 21, 2021 8:58:34 AM

Hi Clément,

Thanks for your email. I agree with most of what you say, although it seems like the consensus of the SETI PC is headed in a different direction. Ideally, a community of rationally-minded skeptics should approach the UAP issue, as you say, which also has the benefit of science education for the public.

Frustratingly, Ravi and I have found very little success in engaging scientists in thinking seriously about this issue. Likewise, many of the people who investigate UAP are very firmly rooted in the ETI hypothesis and are unwilling to find common ground with mainstream scientists. Very few seem to take Sagan's approach where we remain cautiously skeptical but also open to the possibility of new discoveries if supported by data.

Jacob

On Mon, Apr 19, 2021 at 9:04 AM Clément Vidal <(b) (6)> wrote:
Hi Ravi & Jacob,

Thanks for layout out this contradiction clearly (and Jacob for articulating the ambivalence of the document in the main thread). I do agree the subject-matter is highly sensitive and even taboo.

There is a core psychological reason for that. If proven true, it would be a discovery of aliens that are extremely nearby and possibly have had influence on Earth's history. This would be worldview-shattering. In impact studies of discoveries of ETs (see e.g. [my paper](#) on the subject), distance is often the main impact factor.

I see a similar psychological reluctance towards searching for technosignatures VS biosignatures. The impact of finding technosignatures is humanity-shattering, meaning we would not be the most intelligent species in the universe anymore. On the other hand finding biosignatures is no problem for humanity's ego.

I'm not sure where to go regarding the specific goals of IAA-SETI and this particular document.

But I tend to agree with you Jacob that we're not really ready and well-equipped to open the door to UFOs. Scientifically, it would be nice to have a hierarchical system to deal systematically with UFO/UAV claims / hypotheses.

- First level researchers would do some debunking or scientific checks (reports as non-usable, lack of data, meteorological phenomenon, etc.). A decision tree could even be easily made to facilitate these checks.

- Second level researchers would go through the more data-backed and hard to explain cases.

The reason for this two-layered structure is to avoid an overload of irrelevant pseudo-scientific reports. I think a community of rational skeptics could easily perform the first level work. SETI experts / astrobiologists would only pay attention to the claims that pass this first series of tests. The system might be implemented with tools such as [issue tracking systems](#).

Also, I proposed (and Carl Sagan before!) that the first-level could be seen as an opportunity for science education.

What do you think?

All the best,
Clément.

On Thu, 15 Apr 2021 at 23:29, Kopparapu, Ravi Kumar (GSFC-6990) <ravikumar.kopparapu@nasa.gov> wrote:

Hi Clément,

Copying just you and Jacob.

The point you raised about where else the UAP science investigations would be submitted is a point that Jacob and I raised to others in the committee. However, the response seems to be “not SETI”. While there is definitely a need for UAP studies to prove relevance to SETI, if they are not included in any of the science meetings either SETI or not, how else would they make a case for a scientific investigation? The investigations I am talking about are not witness accounts that may be more interest to sociologists. The ones I am talking about are actual instrument scientific investigation cases that the UAP researchers could present. It is a self-fulfilling prophecy of a scientific investigation: UAP are not scientific because no scientific evidence of their nature is presented. And you can't present them at scientific conferences....because they are not proved to be scientific. The google document says “taboo” should be prevented, but it literally puts in writing it without actually saying the word.

To be clear, I do not subscribe to the idea UAP are ET or relevant to SETI. I don't know what they are. But to ***not*** at least hear the case in case it might be, and shut down all avenues, is just intellectually closing oneself and perpetuates distrust between the communities.

Ravi

From: [Kopparapu, Ravi Kumar \(GSFC-6990\)](#)
To: [Shekhtman, Lonnie \(GSFC-690.0\)\[ADNET SYSTEMS INC\]](#)
Subject: Re: Did you see this UFO story?
Date: Monday, May 3, 2021 9:40:41 AM

I will surely let you know.

From: "Shekhtman, Lonnie (GSFC-690.0)[ADNET SYSTEMS INC]"
<lonnie.shekhtman@nasa.gov>
Date: Monday, May 3, 2021 at 9:37 AM
To: "Kopparapu, Ravi Kumar (GSFC-6990)" <ravikumar.kopparapu@nasa.gov>
Subject: Re: Did you see this UFO story?

Really?!?! That sounds exciting. If I can attend to be a fly on the wall, I would love that. I can guarantee to keep everything confidential. I'm super interested. Keep me in mind ...

Lonnie

--

Lonnie Shekhtman
Senior Science Writer
Solar System Exploration
NASA's Goddard Space Flight Center
301-614-6833

From: "Kopparapu, Ravi Kumar (GSFC-6990)" <ravikumar.kopparapu@nasa.gov>
Date: Monday, May 3, 2021 at 9:31 AM
To: "Shekhtman, Lonnie (GSFC-690.0)[ADNET SYSTEMS INC]" <lonnie.shekhtman@nasa.gov>
Subject: Re: Did you see this UFO story?

Oh! I did not!. Thank you for sending this article. I am going to read it as soon as possible. I am hoping to get involved or begin some sort of a meeting to discuss how to pursue scientific investigation of UFOs. Need to know how to get in contact with the right people.

From: "Shekhtman, Lonnie (GSFC-690.0)[ADNET SYSTEMS INC]"
<lonnie.shekhtman@nasa.gov>
Date: Monday, May 3, 2021 at 9:25 AM
To: "Kopparapu, Ravi Kumar (GSFC-6990)" <ravikumar.kopparapu@nasa.gov>
Subject: Did you see this UFO story?

Hey Ravi,

Did you see this recent New Yorker story: "[How the Pentagon Started Taking U.F.O.s Seriously?](#)"

Haven't read it yet, but it's on my list. Thought you would enjoy it, too, if you haven't yet seen it.

Lonnie

--

Lonnie Shekhtman
Senior Science Writer
Solar System Exploration
NASA's Goddard Space Flight Center
301-614-6833

From: [Kopparapu, Ravi Kumar \(GSFC-6990\)](#)
To: [Shekhtman, Lonnie \(GSFC-690.0\)\[ADNET SYSTEMS INC\]](#)
Subject: Re: Did you see this UFO story?
Date: Monday, May 3, 2021 9:42:15 AM

Thanks!

From: "Shekhtman, Lonnie (GSFC-690.0)[ADNET SYSTEMS INC]"
<lonnie.shekhtman@nasa.gov>
Date: Monday, May 3, 2021 at 9:41 AM
To: "Kopparapu, Ravi Kumar (GSFC-6990)" <ravikumar.kopparapu@nasa.gov>
Subject: Re: Did you see this UFO story?

Here's a PDF ...

There was a also a podcast episode this weekend:

<https://podcasts.google.com/feed/aHR0cDovL2ZlZWRzLndueWMub3JnL25ld3lvcmtlcnJhZGlvaG91cg/episode/OTdhZGQ3ZDgtNDI5OS00NzQ5LTg0YWUtOTNiMTRmZjg1MGYw?hl=en&ved=2ahUKEwj6ytq70a3wAhVDBs0KHb5Dd4QieUEgQIBxAF&ep=6>

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Lonnie Shekhtman
Senior Science Writer
Solar System Exploration
NASA's Goddard Space Flight Center
301-614-6833

From: "Kopparapu, Ravi Kumar (GSFC-6990)" <ravikumar.kopparapu@nasa.gov>
Date: Monday, May 3, 2021 at 9:35 AM
To: "Shekhtman, Lonnie (GSFC-690.0)[ADNET SYSTEMS INC]" <lonnie.shekhtman@nasa.gov>
Subject: Re: Did you see this UFO story?

So, this article is short and ended abruptly. The full article seems to be missing?

From: "Shekhtman, Lonnie (GSFC-690.0)[ADNET SYSTEMS INC]"
<lonnie.shekhtman@nasa.gov>
Date: Monday, May 3, 2021 at 9:25 AM
To: "Kopparapu, Ravi Kumar (GSFC-6990)" <ravikumar.kopparapu@nasa.gov>
Subject: Did you see this UFO story?

Hey Ravi,

Did you see this recent New Yorker story: "[How the Pentagon Started Taking U.F.O.s Seriously?](#)"

Haven't read it yet, but it's on my list. Thought you would enjoy it, too, if you haven't yet seen it.

Lonnie

--

Lonnie Shekhtman
Senior Science Writer
Solar System Exploration
NASA's Goddard Space Flight Center
301-614-6833

A REPORTER AT LARGE MAY 10, 2021 ISSUE

HOW THE PENTAGON STARTED TAKING U.F.O.S SERIOUSLY

For decades, flying saucers were a punch line. Then the U.S. government got over the taboo.

By **Gideon Lewis-Kraus**

April 30, 2021



In the past three years, high-level officials have publicly conceded their bewilderment about unidentified aerial phenomena. Above: Four mysterious objects spotted in Salem, Massachusetts, in 1952. Photo illustration by Paul Sahre



0:00 / 1:35:25

Audio: Listen to this article.

On May 9, 2001, Steven M. Greer took the lectern at the National Press Club, in Washington, D.C., in pursuit of the truth about unidentified flying objects. Greer, an emergency-room physician in Virginia and an outspoken ufologist, believed that the government had long withheld from the American people its familiarity with alien visitations. He had founded the Disclosure Project in 1993 in an attempt to penetrate the sanctums of conspiracy. Greer's reckoning that day featured some twenty speakers. He provided, in support of his claims, a four-hundred-and-ninety-two-page dossier called the "Disclosure Project Briefing Document." For public officials too busy to absorb such a vast tract of suppressed knowledge, Greer had prepared a ninety-five-page "Executive Summary of the Disclosure Project Briefing Document." After some throat-clearing, the "Executive Summary" began with "A Brief Summary," which included a series of bullet points outlining what amounted to the greatest secret in human history.

Over several decades, according to Greer, untold numbers of alien craft had been observed in our planet's airspace; they were able to reach extreme velocities with no visible means of lift or propulsion, and to perform stunning maneuvers at g-forces that would turn a human pilot to soup. Some of these extraterrestrial spaceships had been "downed, retrieved and studied since at least the 1940s and possibly as early as the 1930s." Efforts to reverse engineer such extraordinary machines had led to "significant technological breakthroughs in energy generation." These operations had mostly been classified as "cosmic top secret," a tier of clearance "thirty-eight levels" above that typically granted to the Commander-in-Chief. Why, Greer asked, had such transformative technologies been hidden for so long? This was obvious. The "social, economic and geo-political order of the world" was at stake.

The idea that aliens had frequented our planet had been circulating among ufologists since the postwar years, when a Polish émigré, George Adamski, claimed to have rendezvoused with a race of kindly, Nordic-looking Venusians who were disturbed by the domestic and interplanetary effects of nuclear-bomb tests. In the summer of 1947, an alien spaceship was said to have crashed near Roswell, New Mexico. Conspiracy theorists believed that vaguely anthropomorphic bodies had been recovered there, and that the crash debris had been entrusted to private military contractors, who raced to unlock alien hardware before the Russians could. (Documents unearthed after the fall of the Soviet Union suggested that the anxiety about an arms race supercharged by alien technology was mutual.) All of this, ufologists claimed, had been covered up by Majestic 12, a clandestine, para-governmental organization convened under executive order by President Truman. President Kennedy was assassinated because he planned to level with Premier Khrushchev; Kennedy had confided in Marilyn Monroe, thereby sealing her fate. Representative Steven Schiff, of New Mexico, spent years trying to get to the bottom of the Roswell incident, only to die of "cancer."

Greer's "Executive Summary" was woolly, but discerning readers could find within it answers to many of the most frequently asked questions about U.F.O.s—assuming, as Greer did, that U.F.O.s are helmed by extraterrestrials. Why are they so elusive? Because the aliens are monitoring us. Why? Because they are discomfited by our aspiration to "weaponize space." Have we shot at them? Yes. Should we shoot at them? No. Really? Yes. Why not? They're friendly. How do we know? "Obviously, any civilization capable of routine interstellar travel could terminate our civilization in a nanosecond, if that was their intent. That we are still breathing the free air of Earth is abundant testimony to the non-hostile nature of these ET civilizations." (One obvious question seems not to have occurred to Greer: Why, if these spacecraft are so advanced, do they allegedly crash all the time?)

At the press conference, Greer appeared in thin-framed glasses, a baggy, funeral suit, and a red tie askew in a starched collar. "I know many in the media would like to talk about 'little green men,'" he said. "But, in reality, the subject is laughed at because it is

so serious. I have had grown men weep, who are in the Pentagon, who are members of Congress, and who have said to me, 'What are we going to do?' Here is what we will do. We will see that this matter is properly disclosed."

Among the other speakers was Clifford Stone, a retired Army sergeant, who purported to have visited crash sites and seen aliens, both dead and alive. Stone said that he had catalogued fifty-seven species, many of them humanoid. "You have individuals that look very much like you and myself, that could walk among us and you wouldn't even notice the difference," he said.

Leslie Kean, an independent investigative journalist and a novice U.F.O. researcher who had worked with Greer, watched the proceedings with unease. She had recently published an article in the *Boston Globe* about a new omnibus of compelling evidence concerning U.F.O.s, and she couldn't understand why a speaker would make an unsupported assertion about alien cadavers when he could be talking about hard data. To Kean, the corpus of genuinely baffling reports deserved scientific scrutiny, regardless of how you felt about aliens. "There were some good people at that conference, but some of them were making outrageous, grandiose claims," Kean told me. "I knew then that I had to walk away." Greer had hoped that members of the media would cover the event, and they did, with frolicsome derision. He also hoped that Congress would hold hearings. By all accounts, it did not.



“Hold on, boys! Consumer trying to boost the local economy coming through!”

Cartoon by Frank Cotham

Ufologists have perpetual faith in the imminence of Disclosure, a term of art for the government’s rapturous confession of its profound U.F.O. knowledge. In the years after the press conference, the expected announcement was apparently postponed by the events of September 11th, the War on Terror, and the financial crisis. In 2009, Greer issued a “Special Presidential Briefing for President Barack Obama,” in which he claimed that the inaction of Obama’s predecessors had “led to an unacknowledged crisis that will be the greatest of your Presidency.” Obama’s response remains unknown, but in 2011 ufologists filed two petitions with the White House, to which the Office of Science and Technology Policy responded that it could find no evidence to suggest that any “extraterrestrial presence has contacted or engaged any member of the human race.”

The government may not have been in regular touch with exotic civilizations, but it had been keeping something from its citizens. By 2017, Kean was the author of a best-selling U.F.O. book and was known for what she has termed, borrowing from the political scientist Alexander Wendt, a “militantly agnostic” approach to the phenomenon. On December 16th of that year, in a front-page story in the *Times*, Kean, together with two *Times* journalists, revealed that the Pentagon had been running a surreptitious U.F.O. program for ten years. The article included two videos, recorded by the Navy, of what were being described in official channels as “unidentified aerial phenomena,” or U.A.P. In blogs and on podcasts, ufologists began referring to “December, 2017” as shorthand for the moment the taboo began to lift. Joe Rogan, the popular podcast host, has often mentioned the article, praising Kean’s work as having precipitated a cultural shift. “It’s a dangerous subject for someone, because you’re open to ridicule,” he said, in an episode this spring. But now “you could say, ‘Listen, this is not something to be mocked anymore—there’s something to this.’”

Since then, high-level officials have publicly conceded their bewilderment about U.A.P. without shame or apology. Last July, Senator Marco Rubio, the former acting chairman of the Select Committee on Intelligence, spoke on CBS News about mysterious flying objects in restricted airspace. “We don’t know what it is,” he said, “and it isn’t ours.” In December, in a video interview with the economist Tyler Cowen, the former C.I.A. director John Brennan admitted, somewhat tortuously, that he didn’t quite know what to think: “Some of the phenomena we’re going to be seeing continues to be unexplained and might, in fact, be some type of phenomenon that is the result of something that we don’t yet understand and that could involve some type of activity that some might say constitutes a different form of life.”

Last summer, David Norquist, the Deputy Secretary of Defense, announced the formal existence of the Unidentified Aerial Phenomena Task Force. The 2021 Intelligence Authorization Act, signed this past December, stipulated that the government had a hundred and eighty days to gather and analyze data from disparate agencies. Its report is expected in June. In a recent interview with Fox News, John Ratcliffe, the former director of National Intelligence, emphasized that the issue was no longer to be taken lightly. “When we talk about sightings,” he said, “we are talking about objects that have been seen by Navy or Air Force pilots, or have been picked up by satellite imagery, that frankly engage in actions that are difficult to explain, movements that are hard to replicate, that we don’t have the technology for, or are travelling at speeds that exceed the sound barrier without a sonic boom.”

Leslie Kean is a self-possessed woman with a sensible demeanor and a nimbus of curly graying hair. She lives alone in a light-filled corner apartment near the northern extreme of Manhattan, where, on the wall behind her desk, there is a framed black-and-white image that looks like a sonogram of a Frisbee. The photograph was given to her, along with chain-of-custody documentation, by contacts in the Costa Rican government; in her estimation, it is the finest image of a U.F.O. ever made public.

The first time I visited, she wore a black blazer over a T-shirt advertising “The Phenomenon,” a documentary from 2020 with strikingly high production values in a genre known for grainy footage of dubious provenance. Kean is stubborn but unassuming, and she tends to speak of the impact of “the *Times* story,” and the new cycle of U.F.O. attention it has inaugurated, as if she had not been its principal instigator. She told me, “When the New York *Times* story came out, there was this sense of ‘This is what the U.F.O. people have wanted forever.’”

Kean is always assiduously polite toward the “U.F.O. people,” although she stands apart from the ufological mainstream. “It’s not necessarily that what Greer was saying was wrong—maybe there have been visits by extraterrestrials since 1947,” she said. “It’s that you have to be strategic about what you say to be taken seriously. You don’t put out someone talking about alien bodies, even if it might be true. Nobody was ready for that; they didn’t even know that U.F.O.s were real.” Kean is certain that U.F.O.s are real. Everything else—what they are, why they’re here, why they never alight on the White House lawn—is speculation.

Kean feels most at home in the borderlands between the paranormal and the scientific; her latest project examines the controversial scholarship on the possibility of consciousness after death. Until recently, she dreaded the inevitable dinner-party moment when other guests asked about her line of work and she had to mumble something about U.F.O.s. “Then they’d sort of giggle,” she said, “and I would have to say, ‘There’s actually a lot of serious information.’” Her blunt, understated way of talking about incomprehensible data gives her an air of probity. During my visit, as she peered at her extensive library of canonical ufology texts—with such titles as “Extraterrestrial Contact” and “Above Top Secret”—she sighed and said, “Unfortunately, most of these aren’t very good.”

In her best-selling book, “UFOs: Generals, Pilots, and Government Officials Go on the Record,” published in 2010 by an imprint of Random House, Kean wrote that “the U.S. government routinely ignores UFOs and, when pressed, issues false explanations. Its indifference and/or dismissals are irresponsible, disrespectful to credible, often expert witnesses, and potentially dangerous.” Her book is a sweeping reminder that this was not always the case. In the decades after the Second World War, about half of all Americans, including many in power, accepted U.F.O.s as a matter of course. Kean sees herself as a custodian of this lost history. In her apartment, a tranquil space decorated with a Burmese Buddha and bowls of pearlescent seashells, Kean sat down on the floor, opened her file cabinets, and disappeared into a drift of declassified memos, barely legible teletypes, and yellowing copies of *The Saturday Evening Post* and the *Times Magazine* featuring flying-saucer covers and long, serious treatments of the phenomenon.

Kean grew up in New York City, a descendant of one of the nation’s oldest political dynasties. Her grandfather Robert Winthrop Kean served ten terms in Congress; he traced his ancestry, on his father’s side, to John Kean, a South Carolina delegate to the Continental Congress, and, on his mother’s, to John Winthrop, one of the Puritan founders of the Massachusetts Bay Colony. She speaks of her family’s legacy in rather abstract terms, except when discussing the abolitionist William Lloyd Garrison, her grandfather’s great-grandfather, whom she regards as an inspiration. Her uncle is Thomas Kean, who served two terms as New Jersey’s governor and went on to chair the 9/11 Commission.

Kean attended the Spence School and went to college at Bard. She has a modest family income, and spent her early adult years as a “spiritual seeker.” After helping to found a Zen center in upstate New York, she worked as a photographer at the Cornell Lab of Ornithology. In the late nineteen-nineties, after a visit to Burma to interview political prisoners, she stumbled into a career in investigative journalism. She took a job at KPFA, a radio station in Berkeley, as a producer and on-air host for “Flashpoints,” a left-wing drive-time news program, where she covered wrongful convictions, the death penalty, and other criminal-justice issues.

In 1999, a journalist friend in Paris sent her a ninety-page report by a dozen retired French generals, scientists, and space experts, titled “Les OVNI et la Défense: À Quoi Doit-On Se Préparer?”—“U.F.O.s and Defense: For What Must We Prepare Ourselves?” The authors, a group known as COMETA, had analyzed numerous U.F.O. reports, along with the associated radar and photographic evidence. Objects observed at close range by military and commercial pilots seemed to defy the laws of physics; the authors noted their “easily supersonic speed with no sonic boom” and “electromagnetic effects that interfere with the operation of nearby radio or electrical apparatus.” The vast majority of the sightings could be traced to meteorological or earthly origins, or could not be studied, owing to paltry evidence, but a small percentage of them appeared to involve, as the report put it, “completely unknown flying machines with exceptional performances that are guided by a natural or artificial intelligence.” COMETA had resolved, through the process of elimination, that “the extraterrestrial hypothesis” was the most logical explanation.

Kean had read Whitley Strieber’s “Communion,” the 1987 cult best-seller about alien abduction, but until receiving the French findings she had never had more than a mild interest in U.F.O.s. “I had spent years at KPFA reporting on the horrors of the world, injustice and oppression, and giving voice to the voiceless,” she recalled. As she acquainted herself with the plenitude of odd episodes, it was as if she’d seen beyond our own dismal reality and the limitations of conventional thinking, and caught a glimpse of an enchanted cosmos. “To me, this just transcended the endless struggle of human beings,” she told me, during a long walk around her neighborhood. “It was a planetary concern.” She stopped in the middle of the street. Gesturing toward a heavily overcast sky, she said, “Why should we assume we already understand everything there is to know, in our infancy here on this planet?”

An editor of the Boston *Globe’s* Focus section, who had admired Kean’s writing on Burma, tentatively agreed to work with her on a story about U.F.O.s. Kean chose not to discuss it with her KPFA colleagues, apprehensive that they would consider the topic, at best, frivolous. She was certain, though, that anyone given access to the French report’s data and conclusions would understand why she had dropped everything else. She refused to include any ironizing asides in the article, which was published on May 21, 2000, as a straightforward summary of the COMETA investigations. “But then, of course, nothing happened,” she said. “And that was the beginning of my education in the power of the stigma.”



“Why should we assume we already understand everything?” Leslie Kean says. Photograph by Tonje Thilesen for The New Yorker

ome aficionados believe that U.F.O.s have been documented since Biblical times; in “The Spaceships of Ezekiel,” published in 1974, Josef F. Blumrich, a NASA engineer, argued that the prophet’s heavenly vision of wheels within wheels was an encounter not with God but with an alien spaceship. In “The UFO Controversy in America” (1975), David Jacobs wrote about a series of “airship” sightings across the country in 1896 and 1897. Spaceships, in our descriptions, have always displayed capabilities just beyond our technological horizon, and with our own wartime advances they grew staggeringly impressive. It’s generally agreed that the modern U.F.O. era began on June 24, 1947, when a private aviator named Kenneth Arnold, while flying a CallAir A-2, saw a loose formation of nine undulating objects near Mt. Rainier. They had the shape of boomerangs or tailless manta rays, and in his estimation they moved at two to three times the speed of sound. He described their motion as that of a “saucer skipped over water.” A newspaper headline conjured “flying saucers.” By the end of the year, at least eight hundred and fifty similar domestic sightings had been reported, according to one independent U.F.O. investigator. Meanwhile, scientists asserted that flying saucers didn’t exist because they *couldn’t* exist. The *Times* quoted Gordon Atwater, an astronomer at the Hayden Planetarium, who attributed the flurry of reports to a combination of a “mild case of meteorological jitters” and “mass hypnosis.”

Within government circles, the issue of how seriously to take what they renamed “unidentified flying objects” provoked a deep conflict. By September of 1947, incoming reports of sightings had become too profuse for the Air Force to ignore. That month, in a classified communiqué, Lieutenant General Nathan F. Twining advised the commanding general of the armed forces that “the phenomenon reported is something real and not visionary or fictitious.” The “Twining memo,” which has since gained ecclesiastical stature among ufologists, articulated concerns that some foreign rival—say, the Soviet Union—had made an unimaginable technological breakthrough, and it initiated a classified study, Project Sign, to investigate. Its officials were evenly split between those who thought that the “flying discs” were of plausibly “interplanetary” origin and those who chalked up the sightings to rampant misperception. On the one hand, according to a memo, a full twenty per cent of U.F.O. reports lacked ordinary explanations. On the other hand, there was no dispositive evidence—the wreckage of a crashed saucer, perhaps—and, as a scientist at the RAND Corporation reasoned, interstellar travel was simply infeasible.

But unaccountable things kept happening. In 1948, about a year after the Arnold sighting, two pilots in an Eastern Airlines DC-3 saw a large, cigar-shaped light speed toward them at a tremendous velocity before making an impossibly abrupt turn and vanishing into a clear sky. A pilot in a second plane, and a few witnesses on the ground, gave compatible accounts. It was the first time that a U.F.O. had been observed at close range: the two pilots described seeing a row of windows as it streaked past. Project Sign investigators filed a top-secret “Estimate of the Situation” memorandum, which leaned in favor of the extraterrestrial hypothesis. But, opponents argued, if they were here, wouldn’t they have notified us?

In July, 1952, such a formal notification seemed to nearly occur, when an armada of U.F.O.s reportedly violated restricted airspace over the White House. The *Times* headline resembled something out of a Philip K. Dick novel: “FLYING OBJECTS NEAR WASHINGTON SPOTTED BY BOTH PILOTS AND RADAR: AIR FORCE REVEALS REPORTS OF SOMETHING, PERHAPS ‘SAUCERS,’ TRAVELING SLOWLY BUT JUMPING UP AND DOWN.” The Air Force, playing down the incident, told the newspaper that no defensive measures had been taken, although it subsequently emerged that the military had scrambled jets to intercept the trespassers. Major General John Samford, the Air Force’s director of intelligence, held the largest press conference since the end of the Second World War. Samford, who had the grave mien of a lawman in a John Ford movie, squinted as he referred to “a certain percentage of this volume of reports that have been made by credible observers of relatively incredible things.”

The following January, the C.I.A. secretly convened an advisory group of experts, led by Howard P. Robertson, a mathematical physicist from Caltech. The “Robertson panel” determined not that we were being visited by U.F.O.s but that we were being inundated with too many U.F.O. reports. This was a real problem: if notices of genuine incursions over U.S. territory could be lost in a maelstrom of kooky hallucination, there could be grave consequences for national security—for instance, Soviet spy planes could operate with impunity. The Cold War made it crucial that the U.S. government be perceived to have full control over its airspace.

To stem the flood of reports, the panel recommended that “the national security agencies take immediate steps to strip the Unidentified Flying Objects of the special status they have been given and the aura of mystery they have unfortunately acquired.” It also suggested that civilian U.F.O. groups be infiltrated and monitored, and enlisted the media in the debunking effort. The campaign culminated in a 1966 TV special, “UFO: Friend, Foe or Fantasy?,” in which the CBS anchorman Walter Cronkite patiently consigned U.F.O.s to the oblivion of the third category.

Not all members of the military were content with this stance. Vice Admiral Roscoe Hillenkoetter, the first director of the C.I.A., told a *Times* reporter, “Behind the scenes, high-ranking Air Force officers are soberly concerned about the UFOs. But through official secrecy and ridicule, many citizens are led to believe the unknown flying objects are nonsense.”

The government maintained one public repository for U.F.O. reports: Project Blue Book, a continuation of Project Sign, which operated out of Wright-Patterson Air Force Base, near Dayton, Ohio. Blue Book was a meagerly funded division run by a series of low-ranking officers who would have preferred any other billet. The program’s only continuous presence, and its only in-house scientist, was an Ohio State astronomer named J. Allen Hynek, a U.F.O. skeptic and a former member of the Robertson panel. Initially, Hynek assumed a “commonsense” approach; as he later wrote, “I felt the lack of ‘hard’ evidence justified the practical ‘it just can’t be’ attitude.” Ninety-five per cent of supposed U.F.O.s really did have a garden-variety derivation: uncommon clouds, weather balloons, atmospheric temperature inversions. Luminous orbs were attributable to Venus; silent triangles could be connected to classified military technology. (The U-2 spy plane and the SR-71 Blackbird were often reported as U.F.O.s, a confusion embraced by the counterintelligence community, which was eager to keep these projects secret.) But the remaining five per cent, despite the government’s best efforts, could not be neatly resolved. Hynek, to his surprise, developed sympathy for the people who saw U.F.O.s; they were much more likely to be respectable, embarrassed citizens than cranks, hoaxsters, and “U.F.O. buffs.”

Still, he was expected to do his job. Beginning on March 14, 1966, more than a hundred witnesses in and around Dexter, Michigan, reported seeing glowing lights and large football shapes at low altitudes. Hynek arrived to discover a community in a state of “near hysteria.” At a press conference on March 25th, under pressure to avert panic, Hynek attributed some of the sights to the moon and the stars and others to the spontaneous combustion of decomposing vegetation, or “swamp gas.” The people of Michigan took this as an affront. (“Swamp gas” became a common ufological metonym for the government’s patronizing obfuscation.) Gerald Ford, a native of Grand Rapids and at the time the House Minority Leader, called for congressional hearings, “in the firm belief that the American public deserves a better explanation than thus far given by the Air Force.” In testimony before the House Armed Services Committee, Hynek recommended that an independent body be set up to evaluate the merits of Project Blue Book and finally settle the question of U.F.O. legitimacy. In seventeen years, Blue Book had reviewed approximately twelve thousand cases; seven hundred and one of them remained unexplained.

In late 1966, Edward U. Condon, a physicist at the University of Colorado, was given three hundred thousand dollars to conduct such a study. The project was plagued by infighting, especially after the discovery of a memo written by a coordinator noting that a truly disinterested approach would have to allow for the fact that U.F.O.s might exist. That was out of the question—their behavior was not commensurable with our understanding of universal laws. The associated scientists, the coordinator proposed, should stress to their colleagues that they were primarily interested in the psychological and social circumstances of U.F.O. believers. In other words, sightings should be understood as metaphors—for Cold War anxiety or ambivalence about technology.

The thousand-page “Scientific Study of Unidentified Flying Objects,” or the Condon Report, as it became known, was completed in the late fall of 1968. Of the ninety-one Blue Book cases selected for examination, thirty of them remained official mysteries. In a “puzzling and unusual” incident in 1956, a preternaturally fast object was recorded on multiple radars near a U.S. Air Force base in England. One of Condon’s researchers wrote that “the apparently rational, intelligent behavior of the UFO suggests a mechanical device of unknown origin as the most probable explanation of this sighting.” As Tim McMillan, a retired police lieutenant who writes about U.F.O.s and national defense, put it to me, “You didn’t even need the other seven hundred cases. You only needed *one* like that to say, ‘Hey, we should look into this.’ ”

Condon, who announced long before the study was complete that U.F.O.s were unmitigated bunk, wrote the report’s summary and its “Conclusions and Recommendations” section. He seemed to have only a glancing familiarity with the other nine hundred pages of the report. As he put it, “Careful consideration of the record as it is available to us leads us to conclude that further extensive studies of UFOs probably cannot be justified in the expectation that science will be advanced thereby.” Schoolchildren, he advised, should not be given credit for work involving U.F.O.s. Scientists should take their talents and their money elsewhere. Project Blue Book was shut down in January, 1970.

In 1972, Hynek published “The UFO Experience: A Scientific Enquiry,” a scathing postmortem on Blue Book and the Condon Report, and a blueprint for systematic research. Blue Book’s remit had not been to try to explain U.F.O.s, he wrote; rather, it had been to explain them away. The Condon Report, which focussed on disproving any conjecture about alien spaceships, was even worse. What was instead required was an agnostic approach, one biased in favor neither of extraterrestrial craft nor of the weather or Venus. U.F.O.s were unidentified by definition. But, as Kean writes in her book, the Condon Report licensed scientists and officials to look the other way; meanwhile, “the media could enjoy the ride while making fun of UFOs or relegating them to science fiction.” The Robertson panel had finally succeeded in its mission: “The ‘golden age’ of official investigations, congressional hearings, press conferences, independent scientific study, powerful citizen groups, best-selling books, and magazine cover stories had come to an end.” Hynek founded an independent organization to continue his research, but he died, at age seventy-five, in 1986, without having altered the course of public opinion.

Once it was clear that U.F.O.s were going to be her life’s work, Kean resolved to ally herself with the research tradition that Hynek had pioneered. Ufologists liked to dwell on certain historic encounters, like Roswell, where any solid evidence that might once have existed had become hopelessly entangled with mythology. Kean chose to focus on “the really good cases” that had been reported since the close of Blue Book, including those that involved professional observers, such as pilots, and ideally multiple witnesses; those that had been substantiated with photos or radar tracks; and especially those in which experts had

eliminated other interpretations. One case she studied involved a spooky incident in England in 1980, known as “Britain’s Roswell,” in which several U.S. Air Force officers claimed to have observed a U.F.O. at close range just outside R.A.F. Bentwaters, in Rendlesham Forest. The deputy base commander made a contemporaneous audio recording. The details of the incident as it is described in Kean’s book are sensational, to say the least. Another witness, Sergeant James Penniston, said that he got close enough to a silent triangular craft to feel its electric charge and to note the hieroglyphic-like designs etched into its surface.

Kean has always avoided the word “disclosure,” but it was clear to her that, notwithstanding the Condon Report, the government had concealed a persistent interest in U.F.O.s. In 1976, Major Parviz Jafari, a squadron commander in the Iranian Air Force, was dispatched in an F-4 jet to intercept a glowing diamond outside Tehran, near the Soviet border. In a contribution to Kean’s book, Jafari wrote that, as he approached the object, it was “flashing with intense red, green, orange and blue lights so bright that I was not able to see its body.” He found his weapons and radio communications jammed. American intelligence sources in Iran described the incident in a classified, four-page memo to Washington. Kean read to me an assessment attached to the document, written by Colonel Roland Evans: “An outstanding report. This case is a classic, which meets all the criteria necessary for a valid study of the UFO phenomenon.” She arched her brow and said, “I mean, you don’t see that written very often in a government document, especially when they’re telling you they’re not interested.”

In 2002, Larry Landsman, the director of projects for the Sci Fi Channel (now Syfy), invited Kean to lead a broad public “effort seeking new government records on a well-documented UFO case,” one that might provide fodder for a television special. Sci Fi’s producers hired lawyers, researchers, and a P.R. group—the Washington-based firm PodestaMattoon. Edwin S. Rothschild, the head of PodestaMattoon’s energy and environment sector at the time, remembered telling Kean, “Most people may have this idea that there’s something out there, but there are also people who think that, if you start talking about it, you could be a kook.” He went on, “We had to draw a firm line between the people who would not have credibility and those who would.”

Kean selected an incident that occurred in Kecksburg, Pennsylvania, a rural hamlet southeast of Pittsburgh, on December 9, 1965, in which an object the size of a Volkswagen Beetle allegedly hurtled from the sky. According to multiple witnesses, the acorn-shaped bulk had been removed from the woods on a flatbed truck as service members guarded the area with guns. Kean filed Freedom of Information Act requests for NASA files, including some that she believed contained information about debris that was retrieved from the scene. NASA claimed that the relevant records had gone missing in 1987. After a fruitless appeal, Kean filed a lawsuit against NASA to force its compliance. Rothschild introduced Kean to John Podesta, President Clinton’s former chief of staff, who had a well-known interest in both government transparency and U.F.O.s. Podesta agreed to publicly support the suit. The case dragged on for four years, until Kean won a settlement. She received hundreds of largely irrelevant documents. Podesta told me, “There was a real story there, and you know that when the boxes are missing in the basement and the dog ate my homework. They just refused to own up to what had actually happened. I was perfectly willing to believe that it was the debris of a Soviet satellite that we didn’t want to return, but there was nothing that provided any clarity—and after forty years there was no plausible reason for them not to come clean and just say what they thought it was.”

As Kean discovered, a legacy of Cold War paranoia and obstructionism continued to bedevil the U.F.O. issue. On November 7, 2006, at about 4 P.M., a revolving, metallic-looking disk was seen suspended approximately nineteen hundred feet above Gate C17 at Chicago’s O’Hare Airport. The object hovered for several minutes before accelerating at a severe incline and leaving “an almost perfect circle in the cloud layer where the craft had been,” as one anonymous witness subsequently put it. When the Chicago *Tribune* published an account of the sighting—not a single witness was willing to go on the record—it became the most-read

article on the newspaper's Web site up to that time. Initially, the Federal Aviation Administration denied that it had any information about the incident, but media pressure brought to light a taped phone conversation between a United Airlines supervisor and an air-traffic controller. In the recording, the supervisor, named Sue, asks, "Hey, did you see a flying disk out by C17?" She is met with audible laughter. "A flying . . . you're seeing flying disks?" the controller asks. Sue replies, "Well, that's what a pilot in the ramp area at C17 told us." There is a pause. "You're celebrating Christmas today?" the controller asks, then continues, "I haven't seen anything, Sue, and if I did I wouldn't admit to it."

The F.A.A. claimed that it must have been a "hole-punch cloud"—a cirrocumulus or altocumulus cloud crisply perforated with a circular gap, which occasionally appears in below-freezing temperatures. According to meteorologists whom Kean interviewed, it was much too warm that day for hole-punch clouds to occur. The episode sparked Kean's indignation. As she put it in her book, "Those who *do* know the facts about the O'Hare incident continue to mistrust our government, which has demonstrated, once again, that it will avoid dealing with UFO incidents at all costs."

Kean looked abroad for cases that were treated with greater open-mindedness, and did not have to wait long. On Monday, April 23, 2007, an eighteen-passenger plane operated by Aurigny Air Services departed from Southampton, England, for a routine flight to Alderney, one of the Channel Islands. The captain, Ray Bowyer, had been a professional pilot for eighteen years. In the previous decade, he had flown the forty-minute Channel crossing more than a thousand times. That particular day, the plane took off as scheduled, and climbed through a layer of shallow haze before reaching cruising altitude. Bowyer engaged the autopilot and turned his attention to some paperwork.

At 2:06 P.M., Bowyer looked up to discover a gleaming yellow light directly ahead. He first thought that it was sunlight reflecting off the glass vinerias of Guernsey's tomato industry below, but the light did not flicker. Bowyer reached for his binoculars. At a magnification of ten times, the yellow glow took on the contour of a corporeal object. It had a long, thin, cigarlike shape, with sharp edges and pointed ends, like a wheel viewed in profile. It was stationary, and radiated a brilliance that was "difficult to describe," Bowyer later wrote, but he "was able to look at this fantastic light without discomfort." Moments later, he saw a second object, which appeared to move in formation with the first. The passenger seated behind Bowyer, whose name was not made public, reached forward to borrow the binoculars. Three rows back, Kate Russell, an Alderney resident, looked up from her book, and she and her husband both saw the "sunlight-colored" objects. When the flight landed in Alderney, Bowyer filed the details with Britain's Civil Aviation Authority—which has a Mandatory Occurrence Report system—including a sketch of what he'd seen. In his professional opinion, the objects were each about the size of a "reasonably large town." He had time for a quick cup of tea before his return to Southampton.

Local papers made reference to "The X-Files," and the C.A.A. refused to provide further information. A number of Freedom of Information Act requests were filed by the sorts of people who regularly FOIA U.F.O.s. A week after the sighting, the U.K.'s Ministry of Defence concluded that, because the flight position reported was in French airspace, a definitive identification was not the British government's problem. Nevertheless, three weeks later, the British ministry released the available documentation, a packet that included corroborating radar data from an air-traffic controller on the nearby island of Jersey and a statement from a second commercial pilot in the vicinity, who had seen the objects from a different direction.

Ten months later, David Clarke, a known U.F.O. skeptic, along with three collaborators, published an audit. The "Report on Aerial Phenomena Observed Near the Channel Islands, UK, April 23 2007" was drafted with the cooperation of dozens of domain experts—meteorologists, oceanographers, harbormasters—and various French institutes and British ministries, and it

culminated with sixteen prevailing hypotheses, ranked by plausibility. Largely ruled out were such atmospheric aberrations as sun dogs and lenticular clouds, and an exceedingly rare and poorly understood seismological phenomenon known as “earthquake lights,” in which tectonic distress expresses itself in bluish auroras or orbs. The report concluded, “In summary, we are unable to explain the UAP sightings satisfactorily.”

Soon after the Alderney encounter, Kean began working with James Fox, the director of the documentary “The Phenomenon,” to organize an event at the National Press Club. She and Fox chose a date that roughly coincided with the first anniversary of the O’Hare sighting. Among the fourteen speakers were Major Jafari, of the “dogfight over Tehran,” and Captain Bowyer, whom Kean encouraged to expound on the differences that he had observed between the official treatment of U.F.O. encounters in the U.K. and the U.S. “I would have been shocked if I was told that the C.A.A. would obstruct an investigation, or if the C.A.A. told me that what I had seen was something entirely different,” Bowyer said at the lectern, contrasting his experience with the episode at O’Hare. “But it seems that pilots in America are used to this kind of thing, as far as I can tell.”

None of the speakers made mention of Roswell, alien bodies, reverse-engineered craft, or government coverups. Over the next two years, Kean collected their accounts, and other reports, for her book. In it, she argued that, for reasons of safety and security, and to encourage people who saw peculiar stuff in the sky to speak out, the government needed some sort of centralized U.F.O. agency. Many other countries had followed the lead set by France, and had either declassified and published U.F.O. files (the U.K., Denmark, Brazil, Russia, Sweden) or formed their own official organizations dedicated to the issue (Peru, Chile). The problem in the U.S., as Kean saw it, was that discrete initiatives had been driven by interested individuals; there was no single clearing house for salient data. She met with her uncle Thomas Kean to discuss the U.F.O. issue and her proposal for a dedicated agency, in the context of his experience as chair of the 9/11 Commission. He told me, “Like a lot of Americans, I had an immense curiosity about U.F.O.s. The government hasn’t come clean about what they have.”

Kean’s book, which was praised by the theoretical physicist Michio Kaku as “the gold standard for U.F.O. research,” and to which John Podesta had contributed a foreword, enhanced and expanded her influence. In June of 2011, Podesta invited Kean to make a confidential presentation at a think tank he founded, the Center for American Progress. Standing alongside a physicist from Johns Hopkins University and foreign military figures, Kean advised the audience—officials from NASA, the Pentagon, and the Department of Transportation, along with congressional staff and retired intelligence officials—that the challenge was “to undo fifty years of reinforcement of U.A.P. as folklore and pseudoscience.”

Podesta told me, “It wasn’t a bunch of people coming in looking like they were going to a ‘Star Wars’-memorabilia convention—it was serious people from the national-security arena who wanted answers to these unexplained phenomena.” Soon after the event, he said, a Democratic senator invited him for a meeting. “I thought it was going to be on food stamps and tax cuts or whatever, and the door closed and they said, ‘I don’t want anybody to know this, but I’m really interested in U.F.O.s, and I know you are, too. So what do you know?’ ”

In August, 2014, Kean visited the West Wing to meet again with Podesta, who was by then an adviser to President Obama. She had scaled down her request, proposing that a single individual in the Office of Science and Technology Policy be assigned to

I handle the issue. Nothing came of it. She was, however, a well-known figure on the international U.F.O. circuit and had a cordial relationship with the Chilean government's Comité de Estudios de Fenómenos Aéreos Anómalos (CEFAA). She had begun breaking stories from its case files with an atypical recklessness. Kean's work from this period, mostly published on the Huffington Post, shows signs of agitation and evangelism. In March of 2012, she wrote an article called "UFO Caught on Tape Over Santiago Air Base," which referred to a video provided by CEFAA. Kean described the video as showing "a dome-shaped, flat-bottomed object with no visible means of propulsion . . . flying at velocities too high to be man-made." She asked, "Is this the case UFO skeptics have been dreading?"

For the most part, people who do not feel that U.F.O.s represent a meaningful category of study regard the opposing view as a harmless curiosity. The world is full of weird, unaccountable convictions: some people believe that leaving your neck exposed in winter makes you ill, and others believe in U.F.O.s. But a small fraction of nonbelievers, known as "debunkers," mirror ardent belief with equally ardent doubt. When Kean wrote about the CEFAA video, debunkers leaped at the chance to point out that the object in the case they had been dreading was in all probability a housefly or a beetle buzzing around the camera lens. Robert Sheaffer, the proprietor of a blog called Bad UFOs, wrote in his column in the *Skeptical Inquirer*, "Indeed, the very fact that a video of a fly doing loops is being cited by some of the world's top UFOlogists as among the best UFO images of all time reveals how utterly lightweight even the best UFO photos and videos are." Kean consulted with four entomologists, who mostly declined to issue a categorical judgment on the matter, and urged patience with CEFAA's ongoing investigation.

"An informed skeptic is a very different thing from a debunker on a mission," she wrote to me. "There are many out there who are on a mission to debunk UFOs at all costs. They're not rational and they're not informed." Kean thought that they were blinded by zealotry. The skeptic Michael Shermer, for example, in a review of Kean's book, had idly adduced that a wave of silent black triangles seen over Belgium in 1989 and 1990 were probably experimental, classified stealth bombers—despite official attestations to the fact that any government would be crazy to trot out its latest devices over heavily populated areas of Western Europe.

A tendency to discount or overlook inconvenient facts is a thing debunkers and believers have in common. One dogged British researcher has convincingly shown that the Rendlesham case, or Britain's Roswell, probably consisted of a concatenation of a meteor, a lighthouse perceived through woods and fog, and the uncanny sounds made by a muntjac deer. Eyewitness reports are subject to considerable embroidery over time, and strings of improbable coincidences can easily be rendered into an occult pattern by a human mind prone to misapprehension and eager for meaning. The researcher had exhaustively demystified the case, and I was perturbed to learn that Kean seemed unfazed by his verdict. When I asked her about it, she did little more than shrug, as though to suggest that such fluky accounts violated Occam's razor. Even if Rendlesham was "complex," she said, it was still "one of the top ten U.F.O. encounters of all time." And, besides, there were always other cases. Hynek, in "The UFO Experience," had contended that U.F.O. sightings represented a phenomenon that had to be taken in aggregate—hundreds upon hundreds of incredible stories told by credible people.

Many U.F.O. debunkers are overtly hostile, but Mick West has a mild, disarming manner, one that only occasionally recalls the performative deference with which an orderly might cajole a patient back into his straitjacket. He grew up in a small mill town in northern England. His family did not have a television or a phone, and he learned to read with his father's collection of Marvel comics. He was very good at math, and, after buying an early home computer with his earnings from a newspaper route, he became obsessed with primitive video games. As an adolescent, in the early nineteen-eighties, he loved science fiction, and was bewitched by a magazine called *The Unexplained: Mysteries of Mind, Space and Time*. The periodical was full of "true" stories about

U.F.O.s and the paranormal—ghosts and the menacing creatures of cryptozoology. He used to lie in bed at night, as he wrote in his book, “Escaping the Rabbit Hole,” “literally trembling with the thought that some alien could enter my room and spirit me away to perform experiments on me.” Of particular cause for terror was the “Kelly-Hopkinsville encounter,” a 1955 case in which a Kentucky farmhouse was said to have come under attack by little green men.

As West became scientifically literate, he came to trust that the Kelly-Hopkinsville “aliens” were probably owls. Rather than cure his interest in the paranormal, however, this understanding refined it, and he began to take pleasure in the patient dismantling of unsound logic. This practice had, for West, therapeutic value, and as an adult his childhood anxieties are manifested only in a vestigial discomfort with the dark. In the nineties, West moved to California, where he co-founded a video-game studio; he is best known as one of the programmers behind the hugely popular Tony Hawk franchise. In 1999, the company he worked for was acquired by Activision, and, before the age of forty, he more or less retired. He found himself involved in Wikipedia edit wars concerning such contentious topics as homeopathy, scientific foreknowledge in sacred texts, and vegetarian lions. He eventually established his own Web site to combat the widespread misinformation surrounding Morgellons disease, an affliction with no established medical basis, which is characterized by the worry that strange fibres are emerging from one’s skin. Then he took on the chemtrails theory, and engaged with 9/11 truthers. As he put it in his book, “A small part of the reason why I debunk now (and still occasionally address ghost stories) is anger at the fear this nonsense instilled in me as a young child.”

West is a thoughtful, intelligent man. His e-mails feature numbered and lettered lists and light math. Everything he told me was perfectly persuasive, but even an hour on the phone with him left me feeling vaguely demoralized. Morgellons sufferers and chemtrail hysterics, he supposed, would be grateful to be relieved of their baseless fears, just as he had been disburdened of the psychic hazard posed by farmhouse aliens—and he didn’t see why U.F.O. advocates should be any different. He seemed unable to envisage that someone might find solace in the decentering prospect that we are not alone in a universe we ultimately know very little about.

In 2013, West founded Metabunk, an online forum where like-minded contributors examine anomalous phenomena. On January 6, 2017, another skeptic brought to his attention a Huffington Post piece by Kean. In the article, “Groundbreaking UFO Video Just Released by Chilean Navy,” Kean wrote in detail about an “exceptional nine-minute” film, shot on infrared cameras from a helicopter, that CEFAA had been studying for two years. West watched the clip with an immediate sense of recognition. He posted the link to Skydentity, a Metabunk subforum, positing his theory that the video’s odd formations were “aerodynamic contrails,” which he was used to seeing as planes flew over his home in Sacramento. By January 11th, the community had ascertained that the purported U.F.O. was IB6830, a regularly scheduled passenger flight from Santiago to Madrid.

U.F.O. inquiries can proceed only through the process of elimination, a style of argument that is highly vulnerable to erroneous assumptions. In this case, as the Metabunk participants extrapolated, the helicopter pilots had inaccurately gauged the distance and altitude of the U.F.O., and viable possibilities—such as its being a commercial airliner in a takeoff climb—had been prematurely ruled out. West was not surprised. Although Kean regards pilots as “the world’s best-trained observers of everything that flies,” even Hynek determined, in 1977, that pilots are particularly prone to error. (He asserted, however, that “they do slightly better in groups.”) As West has written, “You can’t be an expert in the unknown.”

During one of my phone calls with Kean—greatly pleasurable distractions that tended to absorb entire afternoons—I mentioned to her that I had been in touch with Mick West. It was the only time I had known her to grow peevish. “If Mick were really

interested in this stuff, he wouldn't debunk every single video," she said, almost pityingly. "He would admit that at least some of them are genuinely weird."

Robert Bigelow was three years old in the spring of 1947, when his grandparents were almost run off the road by a glowing object in the mountains northwest of Las Vegas. The Nevada desert of the early atomic age was one of the few places a child could see nuclear tests or rocket launches from his back yard, and Bigelow's dreams of space exploration commingled with his curiosity about U.F.O.s. In the late nineteen-sixties, when he was in his early twenties, he began to invest in real estate—first in Las Vegas, then across the Southwest—and eventually he made a fortune with Budget Suites of America, a chain of extended-stay motels. Later, he founded a private company, Bigelow Aerospace, to build inflatable astronaut habitats. In 1995, he established the National Institute for Discovery Science, which described itself as "a privately funded science institute engaged in research of aerial phenomena, animal mutilations, and other related anomalous phenomena." Among the consultants he hired was Hal Puthoff, whose work in paranormal studies dated back decades, to Project Stargate, a C.I.A. program to investigate how "remote viewing," a form of long-distance E.S.P., might be useful in Cold War espionage. The next year, Bigelow purchased Skinwalker Ranch, a four-hundred-and-eighty-acre parcel a few hours southeast of Salt Lake City, named for a shape-shifting Navajo witch. Its previous owners had described being driven away by coruscating spheres, exsanguinated cattle, and wolflike creatures impervious to gunshots. In 2004, in the wake of a purported decrease in domestic paranormal activity, Bigelow shut down his institute, but he kept the ranch.

In 2007, Bigelow received a letter from a senior official at the Defense Intelligence Agency who was curious about Skinwalker. Bigelow connected him to an old friend from the Nevada desert, Senator Harry Reid, who was then the Senate Majority Leader, and the two men met to discuss their common interest in U.F.O.s. The D.I.A. official later visited Skinwalker, where, from a double-wide observation trailer on site, he is said to have had a spectral encounter; as one Bigelow affiliate described it, he saw a "topological figure" that "appeared in mid-air" and "went from pretzel-shaped to Möbius-strip-shaped."

Reid reached out to Senator Ted Stevens, of Alaska, who believed he'd seen a U.F.O. as a pilot in the Second World War, and Senator Daniel Inouye, of Hawaii. In the 2008 Supplemental Appropriations Bill, twenty-two million dollars of so-called black money was set aside for a new program. The Pentagon was not enthusiastic. As one former intelligence official put it, "There were some government officials who said, 'We shouldn't be doing this, this is really ridiculous, this is a waste of money.'" He went on, "And then Reid would call them out of a meeting and say, 'I want you to be doing this. This was appropriated.' It was sort of like a joke that bordered on an annoyance and people worried that if this all came out, that the government was spending money on this, this will be a bad story." The Advanced Aerospace Weapon System Applications Program was announced in a public solicitation for bids to examine the future of warfare. U.F.O.s were not mentioned, but according to Reid the subtext was clear. Bigelow Aerospace Advanced Space Studies, or BAASS, a Bigelow Aerospace subsidiary, was the only bidder. When Bigelow won the government contract, he contacted the same cohort of paranormal investigators he'd worked with at his institute. Other participants were recruited from within the Pentagon's ranks. In 2008, Luis Elizondo, a longtime counterintelligence officer working in the Office of the Undersecretary of Defense for Intelligence and Security, was visited by two people who asked him

what he thought about U.F.O.s. He replied that he didn't think about them, which was apparently the correct answer, and he was asked to join.

Bigelow believes, as one source put it to me, that "there are aliens walking around at the supermarket." According to an article by Tyler Rogoway and Joseph Trevithick, on the Web site the Drive, Bigelow hired investigators to look into reports at Skinwalker of doglike creatures who smelled of sulfur and goblins with long, pendulous arms, as well as U.F.O. activity near Mt. Shasta. The program appears to have produced little more than a series of thirty-eight papers, all unclassified except one, about the kind of technology a U.F.O. might exploit—including work on the theoretical viability of warp drives and "spacetime metric engineering." Bigelow's researchers, convinced that crash debris was being hidden in some remote hangar, wanted access to the government's classified data on U.F.O.s. In June, 2009, Senator Reid filed a request that the program be awarded "restricted special access program," or SAP, status. The following month, BAASS issued a four-hundred-and-ninety-four-page "Ten Month Report." The portions of the report that were leaked to Tim McMillan, along with additional sections that I was able to review, were almost exclusively about U.F.O.s, and the information provided was not limited to mere sightings; it included a photo of a supposed tracking device that supposed aliens had supposedly implanted in a supposed abductee. As one former government official told me, "The report arrived here and I read the whole thing and immediately concluded that releasing it would be a disaster." In November, 2009, the Defense Department preemptorily denied the request for SAP status. (A representative of BAASS declined to comment for this article.)

Soon afterward, Elizondo, the counterintelligence officer, was asked to take over the program. Beginning in 2010, he turned an outsourced study of Utah cryptids into the Advanced Aerospace Threat Identification Program, or AATIP, an in-house effort that focussed on the national-security implications of military U.A.P. encounters. According to Elizondo, the program studied a number of incidents in depth, including what later became known as the "Nimitz encounter."

The Nimitz Carrier Strike Group was conducting training operations in restricted waters off the coast of San Diego and Baja California in November of 2004, when the advanced SPY-1 radar on one of the ships, the U.S.S. Princeton, began to register some strange presences. They were logged as high as eighty thousand feet, and as low as the ocean's surface. After about a week of radar observations, Commander David Fravor, a graduate of the elite Topgun fighter-pilot school and the commanding officer of the Black Aces squadron, was sent on an intercept mission. As he approached the location, he looked down and saw a roiling shoal in the water and, hovering above it, a white oval object that resembled a large Tic Tac. He estimated it to be about forty feet long, with no wings or other obvious flight surfaces and no visible means of propulsion. It appeared to bounce around like a Ping-Pong ball. Two other pilots, one seated behind him and one in a nearby plane, gave similar accounts. Fravor descended to chase the object, which reacted to his maneuvers before departing abruptly at high speed. Upon Fravor's return to the Nimitz, another pilot, Chad Underwood, was dispatched to follow up with more advanced sensory equipment. His aircraft's targeting pod recorded a video of the object. The clip, known as "FLIR1"—for "forward-looking infrared radar," the technology used to capture the incident—features one minute and sixteen seconds of a blurry ashen dot against a gunmetal background; in the final few seconds, the dot appears to outwit the radar lock and make a rapid getaway.

Elizondo's exposure to cases like the Nimitz encounter convinced him that U.A.P.s were real, but the government's willingness to invest resources in the issue remained uncertain. Elizondo tried repeatedly to brief General James Mattis, the Secretary of Defense, about AATIP's research, and was blocked by underlings. (General Mattis's personal assistant at the time does not recall being approached by Elizondo.)

On October 4, 2017, at the behest of Christopher K. Mellon, a former Deputy Assistant Secretary of Defense for Intelligence, Leslie Kean was called to a confidential meeting in the bar of an upscale hotel near the Pentagon. She was greeted by Hal Puthoff, the longtime paranormal investigator, and Jim Semivan, a retired C.I.A. officer, who introduced her to a sturdy, thick-necked, tattooed man with a clipped goatee named Luis Elizondo. The previous day had been his last day of work at the Pentagon. Over the next three hours, Kean was taken through documents that proved the existence of what was, as far as anyone knew, the first government inquiry into U.F.O.s since the close of Project Blue Book, in 1970. The program that Kean had spent years lobbying for had existed the whole time.

After Elizondo resigned, he and other key AATIP participants—including Mellon, Puthoff, and Semivan—almost immediately joined To the Stars Academy of Arts & Science, an operation dedicated to U.F.O.-related education, entertainment, and research, and organized by Tom DeLonge, a former front man of the pop-punk outfit Blink-182. Later that month, DeLonge invited Elizondo onstage at a launch event. Elizondo announced that they were “planning to provide never-before-released footage from real U.S. government systems—not blurry amateur photos but real data and real videos.”

Kean was told that she could have the videos, along with chain-of-custody documentation, if she could place a story in the *Times*. Kean soon developed doubts about DeLonge, after he appeared on Joe Rogan’s podcast to discuss his belief that what crashed at Roswell was a reverse-engineered U.F.O. built in Argentina by fugitive Nazi scientists, but she had full confidence in Elizondo. “He had incredible gravitas,” Kean told me. She called Ralph Blumenthal, an old friend and a former *Times* staffer at work on a biography of the Harvard psychiatrist and alien-abduction researcher John Mack; Blumenthal e-mailed Dean Baquet, the paper’s executive editor, to say that they wanted to pitch “a sensational and highly confidential time-sensitive story” in which a “senior U.S. intelligence official who abruptly quit last month” had decided to expose “a deeply secret program, long mythologized but now confirmed.” After a meeting with representatives from the Washington, D.C., bureau, the *Times* agreed. The paper assigned a veteran Pentagon correspondent, Helene Cooper, to work with Kean and Blumenthal.

On Saturday, December 16, 2017, their story—“GLOWING AURAS AND ‘BLACK MONEY’: THE PENTAGON’S MYSTERIOUS U.F.O. PROGRAM”—appeared online; it was printed on the front page the next day. Accompanying the piece were two videos, including “FLIR1.” Senator Reid was quoted as saying, “I’m not embarrassed or ashamed or sorry I got this going.” The Pentagon confirmed that the program had existed, but said that it had been closed down in 2012, in favor of other funding priorities. Elizondo claimed that the program had continued in the absence of dedicated funding. The article dwelled not on the reality of the U.F.O. phenomenon—the only actual case discussed at any length was the Nimitz encounter—but on the existence of the covert initiative. The *Times* article drew millions of readers. Kean noticed a change almost immediately. When people asked her at dinner parties what she did for a living, they no longer giggled at her response but fell rapt. Kean gave all the credit to Elizondo and Mellon for coming forward, but she told me, “I never would have ever imagined I could have ended up writing for the *Times*. It’s the pinnacle of everything I’ve ever wanted to do—just this miracle that it happened on this great road, great journey.”

It was hard to tell, however, what exactly AATIP had accomplished. Elizondo went on to host the History Channel docuseries “Unidentified,” in which he solemnly invokes his security oath like a catchphrase. He insisted to me that AATIP had made important strides in understanding the “five observables” of U.A.P. behavior—including “gravity-defying capabilities,” “low observability,” and “transmedium travel.” When I pressed for details, he reminded me of his security oath.

Perhaps unsurprisingly for a Pentagon project that had begun as a contractor's investigation into goblins and werewolves, and had been reincarnated under the aegis of a musician best known for an album called "Enema of the State," AATIP was subject to intense scrutiny. Kean is unwavering in her belief that she and an insider exposed something formidable, but a former Pentagon official recently suggested that the story was more complicated: the program she disclosed was of little consequence compared with the one she set in motion. Widespread fascination with the idea that the government cared about U.F.O.s had inspired the government at last to care about U.F.O.s.

Within a month of the *Times* article's publication, the Pentagon's U.A.P. portfolio was reassigned to a civilian intelligence official with a rank equivalent to that of a two-star general. This successor—who did not want to be named, lest U.F.O. nuts swarm his doorstep—had read Kean's book. He channelled the cascade of media interest to argue that, without a process to handle uncategorizable observations, rigid bureaucracies would overlook anything that didn't follow a standard pattern. At the height of the Cold War, the government had worried that the noise of lurid phantasmagoria might drown out signals relevant to national security, or even provide cover for adversarial incursions; now, it seemed, the concern was that valuable intelligence wasn't being reported. (The Nimitz encounter didn't become subject to official investigation until years after the incident, when an errant file landed on the desk of someone who decided that it merited pursuit.) "What we needed," the former Pentagon official said, "was something like the post-9/11 fusion centers, where a D.O.D. guy can talk to an F.B.I. guy and an N.R.O. guy—everything we learned from the 9/11 Commission."

In the summer of 2018, Elizondo's successor brandished Kean's article to make this case to members of Congress. According to the former Pentagon official, a member of the Senate Armed Services Committee inserted language into the classified annex of the 2019 National Defense Authorization Act, passed in August of 2018, that obligated the Pentagon to continue the investigations. "The U.A.P. issue is being taken very seriously now even compared to where it was two or three years ago," the former Pentagon official said.

The activity intensified. In April of 2019, the Navy revised its official guidelines for pilots, encouraging them to report U.A.P.s without fear of scorn or censure. In June, Senator Mark Warner, of Virginia, admitted that he had been briefed on the U.A.P. matter. In September, a spokesperson for the Navy announced that the "FLIR1" video, along with two videos associated with sightings off the East Coast in 2015, showed "incursions into our military training ranges by unidentified aerial phenomena." The "unidentified" label had been given an institutional imprimatur.

The debunkers were unimpressed by the designation, and their work continued apace. Mick West devoted multiple YouTube videos to his contention that "FLIR1" shows, in all likelihood, a distant plane. He maintained that the remainder of the available evidence from the Nimitz encounter was even shakier: he suspects that the presences picked up by the U.S.S. Princeton were probably birds or clouds, registered by a brand-new and likely miscalibrated radar system—the U.S.S. Roosevelt, off the East Coast, had also received a technological upgrade before a similar raft of sightings in 2014 and 2015—and that the Tic Tac-shaped object Commander Fravor saw was something like a target balloon. He has no explanation for what the other pilots saw, but points out that perceptions are subject to illusion, and memory is malleable.

Were our finest pilots and radar operators so inept that they were unable to recognize an airplane in restricted airspace? Or was the government using the word “unidentified” to conceal some deeply classified program that a branch of the service was testing without bothering to notify the Nimitz pilots? The former Pentagon official assured me that West “doesn’t have the whole story. There’s data he will never see—there’s much more that I would include in a classified environment.” He went on, “If Mick West feeds the stigma that allows a potential adversary to fly all over your back yard, then, cool—just because it looks weird, I guess we’ll ignore it.”

The point of using the term “unidentified,” he said, was “to help remove the stigma.” He told me, “At some point, we needed to just admit that there are things in the sky we can’t identify.” Despite the fact that most adults carry around exceptionally good camera technology in their pockets, most U.F.O. photos and videos remain maddeningly indistinct, but the former Pentagon official implied that the government possesses stark visual documentation; Elizondo and Mellon have said the same thing. According to Tim McMillan, in the past two years, the Pentagon’s U.A.P. investigators have distributed two classified intelligence papers, on secure networks, that allegedly contain images and videos of bizarre spectacles, including a cube-shaped object and a large equilateral triangle emerging from the ocean. One report brooked the subject of “alien” or “non-human” technology, but also provided a litany of prosaic possibilities. The former Pentagon official cautioned, “‘Unidentified’ doesn’t mean little green men—it just means there’s something there.” He continued, “If it turns out that everything we’ve seen is weather balloons, or a quadcopter designed to look like something else, nobody is going to lose sleep over it.”

Elizondo never got to Mattis, but his successor managed to get briefings in front of Mark Esper, the Secretary of Defense, as well as the director of National Intelligence, the Senate Select Committee on Intelligence, the Senate Armed Services Committee, and several members of the Joint Chiefs of Staff. Government officials in Japan later divulged to the media that they had discussed the topic in a meeting with Esper in Guam. When I asked the former Pentagon official about other foreign governments, he hesitated, then said, “We would not have moved forward without briefing close allies. This was bigger than the U.S. government.”

In June of 2020, Senator Marco Rubio added text into the 2021 Intelligence Authorization Act requesting—though not requiring—that the director of National Intelligence, along with the Secretary of Defense, produce “a detailed analysis of unidentified aerial phenomena data and intelligence reporting.” This language, which allowed them a hundred and eighty days to produce the report, drew heavily from proposals by Mellon, and it was clear that this concerted effort, at least in theory, was a more productive and more cost-effective iteration of the original vision for AATIP. Mellon told me, “This creates an opening and an opportunity, and now the name of the game is to make sure we don’t miss that open window.”

Still, the former Pentagon official told me, “it wasn’t until August of 2020 that the effort was really real.” That month, the Deputy Secretary of Defense, David Norquist, publicly announced the existence of the Unidentified Aerial Phenomena Task Force, whose report is anticipated in June. The Intelligence Authorization Act finally passed in December. The former Pentagon official worries that an appetite for disclosure has been heedlessly stoked. “The public, I would hope, doesn’t expect to see the crown jewels,” he said.

West was nonchalant. “They’re just U.F.O. fans,” he said of Reid and Rubio. “They’ve been convinced there’s something to it and so are trying to push for disclosure.” The former Pentagon official conceded that there were “a lot of government people who are enthusiasts on the subject who watch the History Channel and eat this stuff up 24/7.” But, he said, the current mood was by no means set by “a small cadre of true believers.”

Virtually all astrobiologists suspect that we are not alone. Seth Shostak, the senior astronomer at the SETI Institute, has wagered that we will find incontrovertible proof of intelligent life by 2036. Astronomers have determined that there may be hundreds of millions of potentially habitable exoplanets in just our galaxy. Interstellar travel by living beings still seems like a wildly remote possibility, but physicists have known since the early nineteen-nineties that faster-than-light travel is possible in theory, and new research has brought this marginally closer to being achievable in practice. These advances—along with the further inference that ours is a mediocre or even inferior civilization, one that could well be millions or billions of years behind our distant neighbors—have lent a bare-bones plausibility to the idea that U.F.O.s have extraterrestrial origins.

Such a prospect, as Hynek wrote in the mid-nineteen-eighties, “overheats the human mental circuits and blows the fuses in a protective mechanism for the mind.” Its destabilizing influence was clear. I would begin interviews with sources who seemed lucid and prudent and who insisted, like Kean, that they were interested only in vetted data, and that they used the term “U.F.O.” in the strictly literal sense—whether the objects were spaceships or drones or clouds, we just didn’t know. An hour later, they would reveal to me that the aliens had been living in secret bases under the ocean for millions of years, had genetically altered primates to become our ancestors, and had taught accounting to the Sumerians.

Since 2017, Kean has covered the U.F.O. beat for the *Times*, sharing a byline with Ralph Blumenthal on a handful of stories. These have steered clear of such genre mainstays as crop circles and Nazca Lines, but their most recent article, published last July, veered into fringe territory. In it, they referred to “a series of unclassified slides,” of somewhat uncertain lineage but apparently shown at congressional briefings, that mentioned “off-world” vehicles and “crash retrievals.” Kean told me in an uncharacteristically hesitant but nonetheless matter-of-fact way that she had begun to come around to the idea that U.F.O. fragments had been hoarded somewhere. In 2019, Luis Elizondo had suggested to Tucker Carlson that such detritus existed. (He then quickly invoked his security oath.) Kean cited Jacques Vallée, perhaps the most famous living ufologist, and the basis for François Truffaut’s character in “Close Encounters of the Third Kind,” who has been working with Garry Nolan, a Stanford immunologist, to analyze purported crash material for scientific publication. (Vallée declined to speak about it on the record, concerned that it might undermine the peer-review process, but told me, “We hope it will be the first U.F.O. case published in a refereed scientific journal.”)

In the story, Kean and Blumenthal wrote that Harry Reid “believed that crashes of vehicles from other worlds had occurred and that retrieved materials had been studied secretly for decades, often by aerospace companies under government contracts.” The day after its publication, the *Times* had to append a correction: Senator Reid did not believe that crash debris had been allocated to private military contractors for study; he believed that U.F.O.s *may* have crashed, and that, if so, we *should* be studying the fallout. When I asked Reid about the confusion, he told me that he admired Kean but that he had never seen proof of any remnants—something Kean had never actually claimed. He left no doubt in our conversation as to his personal assessment. “I was told for decades that Lockheed had some of these retrieved materials,” he said. “And I tried to get, as I recall, a classified approval by the Pentagon to have me go look at the stuff. They would not approve that. I don’t know what all the numbers were, what kind of classification it was, but they would not give that to me.” He told me that the Pentagon had not provided a reason. I asked if that was why he’d requested SAP status for AATIP. He said, “Yeah, that’s why I wanted them to take a look at it. But they wouldn’t give me the clearance.” (A representative of Lockheed Martin declined to comment for this article.)

The former Pentagon official told me that he found Kean’s evidence wanting. “There are terms in Leslie’s slides that we don’t use—stuff we would never say,” he said. “It doesn’t pass the smell test.” But, when I asked him whether he thought that there might

be recovered debris somewhere, he paused for a surprisingly long time. He finally said, “I couldn’t say yes, like Lue”—Luis Elizondo—“did. I honestly don’t know.” He continued, “There are guys who spent their lives studying stuff like Roswell and died with no answers. Are we all going to die with no answers?”

Not everyone needs answers, or expects the government to provide them. In February, I spoke to Vincent Aiello, a podcaster and former fighter pilot, who served on the Nimitz at the time of the encounter. He told me that the widespread impression of Commander Fravor’s story back then, thirteen years before it became a news sensation, was that it sounded pretty far out, but that the gossip and laughter on the ship petered out after a day or two. “Most military aviators have a job to do and they do it well,” he said. “Why pursue life’s great mysteries when that’s what Geraldo Rivera is for?”

The mysteries have shown no signs of abatement. In early April, the eminent U.F.O. journalist George Knapp, along with the documentary filmmaker Jeremy Kenyon Lockyer Corbell, best known for his participation in an ill-begotten crusade to “storm” Nevada’s Area 51, released a video and a series of photos that had apparently been leaked from the U.A.P. Task Force’s classified intelligence reports. The video, taken with night-vision goggles, shows three airborne triangles, intermittently flashing with eerie incandescence as they rotate against a starry sky. Kean texted me, “Breaking huge story.” She was trying to get to the bottom of the video, but doubted that any of her sources would be willing to authenticate something so hot. The next day, the Department of Defense confirmed that the video was real and said that it had been taken by Navy personnel. Mick West argued, persuasively, that the pyramids were an airplane and two stars, distorted by a lens artifact. Kean, for her part, told me that she was “only just starting to look into the situation,” but volunteered that West was “being reasonable.” The Pentagon refused further comment.

The government may or may not care about the resolution of the U.F.O. enigma. But, in throwing up its hands and granting that there are things it simply cannot figure out, it has relaxed its grip on the taboo. For many, this has been a comfort. In March, I spoke with a lieutenant colonel in the Air Force who said that about a decade ago, during combat, he had an extended encounter with a U.F.O., one that registered on two of his plane’s sensors. For all the usual reasons, he had never officially reported the sighting, but every once in a while he’d bring a close friend into his confidence over a beer. He did not want to be named. “Why am I telling you this story?” he asked. “I guess I just want this data out there—hopefully this helps somebody else somehow.”

The object he’d encountered was about forty feet long, disobeyed the principles of aerodynamics as he understood them, and looked exactly like a giant Tic Tac. “When Commander Fravor’s story came out in the *New York Times*, all my buddies had a jaw-drop moment. Even my old boss called me up and said, ‘I read about the Nimitz, and I wanted to say I’m so sorry I called you an idiot.’” ♦

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*Gideon Lewis-Kraus is a staff writer at *The New Yorker*. He is the author of the memoir “A Sense of Direction” and the Kindle Single “No Exit.”*

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From: [Kopparapu, Ravi Kumar \(GSFC-6990\)](#)
To: [Beatriz Villarroel](#)
Subject: Re: [EXTERNAL] SV: Invitation for a virtual Technosignature seminar
Date: Thursday, May 6, 2021 10:37:16 AM

Hi Beatriz,

Oh! This is very intriguing news. As you said, this one looks like a solar system SETI artifact related that we proposed in our 2012 paper. I am certainly happy to read through the article if that is ok with you. And I will be looking forward to your paper on arxiv. You are right, time is of the essence here. Please also keep sometime after your talk next Wednesday regarding our discussion on UAP. I really would like your perspective.

Thanks

Ravi

From: Beatriz Villarroel (b) (6)
Date: Thursday, May 6, 2021 at 9:10 AM
To: "Kopparapu, Ravi Kumar (GSFC-6990)" <ravikumar.kopparapu@nasa.gov>
Subject: SV: [EXTERNAL] SV: Invitation for a virtual Technosignature seminar

Hi Ravi,

No worries, but thanks a lot for clarifying.

Today, I'll be quite swamped with writing a new article me and Lars are working on, on something we need to do urgently as a SETI community, and completely finalize within 3 to 6 months, before it's too late. I would like to post it on arXiv once I have my "simultaneous transients" paper accepted. (I just updated it from the first round of review and sent it to all coauthors before resubmission...)

I need to be quite honest. I think we've by chance probably identified the simplest technosignature (something I think you also mention in your 2012 paper) and is a question we can get answered within just a few months with the data collection in

VASCO, but it's really, really time pressuring as StarLink launches will spoil all our chances to ever conduct the necessary in-situ follow-up, in case the signature is confirmed in the data collection phase... I think we need to join forces as a community and act swiftly.

If you are interested, we will be happy to get your comments and ideas on the article, once ready.

//B.

Från: Kopparapu, Ravi Kumar (GSFC-6990) <ravikumar.kopparapu@nasa.gov>

Skickat: den 6 maj 2021 13:52:44

Till: Beatriz Villarroel

Ämne: Re: [EXTERNAL] SV: Invitation for a virtual Technosignature seminar

Hi Beatriz,

I am very sorry, this was nothing to do with you in any way at all. No one even mentioned you. It was about another speaker. I am sorry if this was not clear in my email. I will fully support you and your work if I see anyone is wrongly accusing you.

The whole incident happened because Geoff Marcy attended the seminar and someone was not comfortable him being in there. So I am making sure to request people to not forward the talk link to anyone outside the Technosignature seminar list participants. Please let me assure you again that this has nothing to do with you. I am eagerly looking forward to your talk. If you want to chat briefly to discuss this even more, I am free today.

Thank you

Ravi

From: Beatriz Villarroel (b) (6)

Date: Thursday, May 6, 2021 at 6:00 AM

To: "Kopparapu, Ravi Kumar (GSFC-6990)" <ravikumar.kopparapu@nasa.gov>

Subject: SV: [EXTERNAL] SV: Invitation for a virtual Technosignature seminar

Hi Ravi,

Thanks for emailing me. I'm not sure I understand what incident happened

yesterday. Did somebody complain on that you have invited me? If so, I'd like to know more, if you don't mind. I've experienced an inhumane amount of harassment of all kinds, sabotage, ostracism and bullying for just "being different" or "being friends with the wrong people" — more than what would fit into any article and still be deemed credible (thus, I never talk about this). I lost an entire year due to the sick leave with deep depression after all this, counting for my publication gap. So it's important for me to know if somebody in the SETI community is driving a case against me.

Nevertheless, I feel that credit needs to be given where credit is due, and I don't feel comfortable censoring away references that are important to cite... so please let me know what other solutions you have in mind.

Best wishes,

B.

Från: Kopparapu, Ravi Kumar (GSFC-6990) <ravikumar.kopparapu@nasa.gov>

Skickat: den 5 maj 2021 21:41:17

Till: Beatriz Villarroel

Ämne: Re: [EXTERNAL] SV: Invitation for a virtual Technosignature seminar

Hi Beatriz,

I am writing about your upcoming talk and an incident that happened in today's talk. Geoff Marcy attended today's Technosignature seminar and there was a concern by some that reflects on whom we are inviting. We did not invite him specifically. But someone must have forwarded the connection link. If you are planning to show any slides related to Geoff Marcy in your talk, my humble request is to skip them to prevent any more incidents. Would this be agreeable to you? If not, perhaps we can work out another solution where it might be agreeable to you and others. Thank you!

From: Beatriz Villarroel (b) (6)

Date: Wednesday, May 5, 2021 at 7:01 AM

To: "Kopparapu, Ravi Kumar (GSFC-6990)" <ravikumar.kopparapu@nasa.gov>

Cc: "Haqq-Misra, Jacob D. (GSFC-6062)[Science Collaborator]" <(b) (6)> Lars Mattsson (b) (6)

Subject: SV: [EXTERNAL] SV: Invitation for a virtual Technosignature seminar

Thanks a lot, Ravi!

I here cc Lars Mattsson, so you have his email address too :)

Best wishes,

B.

Från: Kopparapu, Ravi Kumar (GSFC-6990) <ravikumar.kopparapu@nasa.gov>

Skickat: den 4 maj 2021 23:49:04

Till: Beatriz Villarroel

Kopia: Haqq-Misra, Jacob D. (GSFC-6062)[Science Collaborator]

Ämne: Re: [EXTERNAL] SV: Invitation for a virtual Technosignature seminar

Hi Beatriz,

Wonderful! Thank you, I am eagerly looking forward for your talk.

And yes, absolutely. Please feel free to bring any of your collaborators who might be interested.

Best

Ravi

From: Beatriz Villarroel (b) (6)

Date: Tuesday, May 4, 2021 at 5:41 PM

To: "Kopparapu, Ravi Kumar (GSFC-6990)" <ravikumar.kopparapu@nasa.gov>

Cc: "Haqq-Misra, Jacob D. (GSFC-6062)[Science Collaborator]" <(b) (6)>

Subject: SV: [EXTERNAL] SV: Invitation for a virtual Technosignature seminar

Hi Ravi!

Attached at the bottom is the abstract and title for next weeks seminar.

Thanks a lot for giving me the opportunity to give a talk. Is the English in the abstract OK? (If not, please feel to correct it!)

I'd be happy to stay after the seminar and talk to you and Jacob about UAPs. Me and Lars Mattsson are working on a follow-up article for the current one in review, how about if he joins the discussions as well?

Best wishes,

B.

Title

The VASCO project: the 2021 status update

Abstract

In the “Vanishing & Appearing Sources during a Century of Observations” (VASCO) project we use optical survey data with a time window of 70 years to scan the sky in searches for unusual astrophysical transients, in particular vanishing objects. The VASCO project has a broad set of goals, which includes everything from searches for interesting long-term variable Active Galactic Nuclei (AGN), to signatures of extra-terrestrial intelligence. In this presentation, I will update the community on an interesting case of “twelve simultaneous transients”, found within a small field-of-view. I will discuss all possible or hypothetical explanations (including instrumental, astrophysical, etc) of this peculiar observation. In light of this finding, I will discuss our plans to boost up the searches. Finally, I will present a progress report on the citizen science project.

Från: Kopparapu, Ravi Kumar (GSFC-6990) <ravikumar.kopparapu@nasa.gov>

Skickat: den 4 maj 2021 20:29:52

Till: Beatriz Villarroel

Kopia: Haqq-Misra, Jacob D. (GSFC-6062)[Science Collaborator]

Ämne: Re: [EXTERNAL] SV: Invitation for a virtual Technosignature seminar

Hi Beatriz,

Could you send me a title and an abstract for your Technosignature seminar next Wednesday May 12 at 11AM Eastern U.S Time? If you can send it by this week, that would be great and I can circulate an announcement.

Also, would you have time after the seminar? Usually the seminar spills over more than an hour. Would you be able to stay a bit longer after the seminar? Jacob and I have somethings to talk with you related to UAPs.

Thanks

Ravi

From: Beatriz Villarroel (b) (6)
Date: Tuesday, March 9, 2021 at 1:25 PM
To: "Kopparapu, Ravi Kumar (GSFC-6990)" <ravikumar.kopparapu@nasa.gov>
Subject: SV: [EXTERNAL] SV: Invitation for a virtual Technosignature seminar

Yes!

Från: Kopparapu, Ravi Kumar (GSFC-6990) <ravikumar.kopparapu@nasa.gov>
Skickat: den 9 mars 2021 19:17:36
Till: Beatriz Villarroel
Ämne: Re: [EXTERNAL] SV: Invitation for a virtual Technosignature seminar

Sure, Great!

Are you available on May 12th?

From: Beatriz Villarroel (b) (6)
Date: Tuesday, March 9, 2021 at 1:12 PM
To: "Kopparapu, Ravi Kumar (GSFC-6990)" <ravikumar.kopparapu@nasa.gov>
Subject: [EXTERNAL] SV: Invitation for a virtual Technosignature seminar

Dear Ravi,

Thank you for the congratulations :-)

I'll be delighted to give a talk in May.

How about the first half of May?

All the best,

B.

Från: Kopparapu, Ravi Kumar (GSFC-6990) <ravikumar.kopparapu@nasa.gov>
Skickat: den 9 mars 2021 14:55:42
Till: Beatriz Villarroel
Ämne: Invitation for a virtual Technosignature seminar

Dear Beatriz,

Congratulations on your L'Oréal-Unesco For Women in Science award!

I am writing to invite you to give a virtual talk at [Technosignature seminar series](#) that I organize at NASA Goddard Space Flight Center. We are having a series of talks from experts on Technosignature science that includes a range of topics from Solar system to exoplanets, evolution of intelligence and technology, galactic to extra-galactic, theory and observation spanning the electromagnetic spectrum. It was a pleasure to have you at the “Technoclimates” conference last year.

The seminars are nominally on Wednesday’s starting at 11AM U.S Eastern time, with a duration of 40minutes of talk, and 20 minutes of discussion. We found that an extended discussion after a talk invites new ideas and collaborations which are crucial for developing a vibrant community. So we request you to have your talk tailored to the allocated time so that participants can discuss the topics of your talk in the 20min session.

We have open Wednesday’s from May 2021 onwards, so please choose a Wednesday that is convenient for you.

These talks will be given on zoom and we can send you a link as the date approaches, if you accept. We will also be recording the talks and make them publicly available on [SEEC \(Sellers Exoplanet Environments Collaboration\)](#) website, unless a speaker requests us not to do so. So please let us know if you would like your talk to be recorded.

I look forward to hearing from you, and thank you for your consideration.

Best
Ravi

--

Ravi kumar Kopparapu
Lead, Sellers Exoplanet Environment Collaboration (SEEC)
NASA Goddard Space Flight Center
Greenbelt, MD 20771
email: ravikumar.kopparapu@nasa.gov

From: [Kopparapu, Ravi Kumar \(GSFC-6990\)](#)
To: [Shekhtman, Lonnie \(GSFC-690.0\)\[ADNET SYSTEMS INC\]](#)
Subject: Re: [EXTERNAL] SV: Invitation for a virtual Technosignature seminar
Date: Thursday, May 6, 2021 10:37:46 AM

Ok, sounds good!

From: "Shekhtman, Lonnie (GSFC-690.0)[ADNET SYSTEMS INC]" <lonnie.shekhtman@nasa.gov>
Date: Thursday, May 6, 2021 at 10:02 AM
To: "Kopparapu, Ravi Kumar (GSFC-6990)" <ravikumar.kopparapu@nasa.gov>
Subject: Re: [EXTERNAL] SV: Invitation for a virtual Technosignature seminar

Ravi, thank you so much for inviting me! But, in this case, I think it's a little too intimate of a meeting for me to sit in. Might be kind of awkward ... Maybe when there's something bigger?

Either way, once I finish this New Yorker story, which is REALLY eye opening, I'm going to call you to find out more about what you're thinking about related to UAPs ...

I will attend the seminar!

Talk soon,
Lonnie

--

Lonnie Shekhtman
Senior Science Writer
Solar System Exploration
NASA's Goddard Space Flight Center
301-614-6833

From: "Kopparapu, Ravi Kumar (GSFC-6990)" <ravikumar.kopparapu@nasa.gov>
Date: Wednesday, May 5, 2021 at 7:25 AM
To: "Shekhtman, Lonnie (GSFC-690.0)[ADNET SYSTEMS INC]" <lonnie.shekhtman@nasa.gov>
Subject: FW: [EXTERNAL] SV: Invitation for a virtual Technosignature seminar

Hi Lonnie,

Are you interested in attending an informal meeting with the speaker (Beatriz Villarroel) of May 12th Technosignature seminar to discuss UAP? We plan to have a small discussion after her talk. Btw, her abstract (below) is also interesting and could be related.


I am not sure how much progress and what can be accomplished in this first meeting, but I want to

at least start discussing my concerns with them. Btw, Beatriz won the L'Oreal Women in Science award for 2021. <https://www.youtube.com/watch?v=i-rQ0cHeRPA>

Ravi

From: Beatriz Villarroel (b) (6)
Date: Wednesday, May 5, 2021 at 7:01 AM
To: "Kopparapu, Ravi Kumar (GSFC-6990)" <ravikumar.kopparapu@nasa.gov>
Cc: "Haqq-Misra, Jacob D. (GSFC-6062)[Science Collaborator]" <(b) (6)> Lars Mattsson (b) (6)
Subject: SV: [EXTERNAL] SV: Invitation for a virtual Technosignature seminar

Duplicate email chain - already processed



Deletion Page

Requester: John Greenewald

Request #: 21-HQ-F-00603

4 page(s) containing duplicate information is/are held in the file.

From: [Kopparapu, Ravi Kumar \(GSFC-6990\)](#)
To: [Shekhtman, Lonnie \(GSFC-690.0\)\[ADNET SYSTEMS INC\]](#)
Subject: Re: Invitation to my book club
Date: Friday, May 7, 2021 10:00:19 AM

Sure, please share.

From: "Shekhtman, Lonnie (GSFC-690.0)[ADNET SYSTEMS INC]"
<lonnie.shekhtman@nasa.gov>
Date: Friday, May 7, 2021 at 9:46 AM
To: "Kopparapu, Ravi Kumar (GSFC-6990)" <ravikumar.kopparapu@nasa.gov>
Subject: Re: Invitation to my book club

Great! I'll add you to the invite. Is it OK for me to share the PDF with the rest of the group?

--

Lonnie Shekhtman
Senior Science Writer
Solar System Exploration
NASA's Goddard Space Flight Center
301-614-6833

From: "Kopparapu, Ravi Kumar (GSFC-6990)" <ravikumar.kopparapu@nasa.gov>
Date: Friday, May 7, 2021 at 9:43 AM
To: "Shekhtman, Lonnie (GSFC-690.0)[ADNET SYSTEMS INC]" <lonnie.shekhtman@nasa.gov>
Subject: Re: Invitation to my book club

Hi Lonnie,

Yes! I am quite interested in attending the "UFO" week of your book club. I did read the New Yorker article and have some thoughts about it. So please count me in. Next Thursday 2-3pm is good.

Also, I am attaching a scientific analysis article written by Prof. James Mc Donald in 1969 of some UFO cases. He was a member of National Science Academy and his methodology is the one I try to emulate in scientifically investigating UFOs. You don't have to read all of it, but the intro is good. You may see some of my comments in there which you can ignore if you want.

Thanks

Ravi

From: "Shekhtman, Lonnie (GSFC-690.0)[ADNET SYSTEMS INC]"
<lonnie.shekhtman@nasa.gov>
Date: Friday, May 7, 2021 at 9:22 AM

To: "Kopparapu, Ravi Kumar (GSFC-6990)" <ravikumar.kopparapu@nasa.gov>

Subject: Invitation to my book club

Ravi,

I run a weekly book club for NASA science writers and public engagement people. We actually don't read a ton of books, but lots of long-form journalism ... then we pick it apart. We have planetary, helio, astro people represented, plus different centers and HQ. It's just a handful of us. A very casual thing.

We are reading the New Yorker UFO article for next week. It just occurred to me that we would loooooove to hear from you about your interest in UFOs. We'll read your SciAm piece, too. Do you have time to come hang out with us between 2-3PM on Thursday of next week? If not next week, maybe the week after or later? We meet every Thursday between 2-3.

Thanks,

Lonnie

--

Lonnie Shekhtman
Senior Science Writer
Solar System Exploration
NASA's Goddard Space Flight Center
301-614-6833

Science in Default:

Twenty-Two Years of Inadequate UFO Investigations

American Association for the Advancement of Science, 134th Meeting

General Symposium, Unidentified Flying Objects

James E. McDonald, Professor of Atmospheric Sciences

The University of Arizona

Tucson, Arizona

December 27, 1969

No scientifically adequate investigation of the UFO problem has been carried out during the entire 22 years that have now passed since the first extensive wave of sightings of unidentified aerial objects in the summer of 1947. Despite continued public interest, and despite frequent expressions of public concern, only quite superficial examinations of the steadily growing body of unexplained UFO reports from credible witnesses have been conducted in this country or abroad. The latter point is highly relevant, since all evidence now points to the fact that UFO sightings exhibit similar characteristics throughout the world.

Charging inadequacy of all past UFO investigations, I speak not only from a background of close study of the past investigations, but also from a background of three years of rather detailed personal research, involving interviews with over five hundred witnesses in selected UFO cases, chiefly in the U. S. In my opinion, the UFO problem, far from being the nonsense problem that it has often been labeled by many scientists, constitutes a problem of extraordinary scientific interest.

The grave difficulty with essentially all past UFO studies has been that they were either devoid of any substantial scientific content, or else have lost their way amidst the relatively large noise-content that tends to obscure the real signal in the UFO reports. The presence of a percentually large number of reports of misidentified natural or technological phenomena (planets, meteors, and aircraft, above all) is not surprising, given all the circumstances surrounding the UFO problem. Yet such understandable and usually easily recognized instances of misidentification have all too often been seized upon as a sufficient explanation for all UFO reports, while the residue of far more significant reports (numbering now of order one thousand) are ignored. I believe science is in default for having failed to mount any truly adequate studies of this problem, a problem that has aroused such strong and widespread public concern during the past two decades.

Unfortunately, the present climate of thinking, above all since release of the latest of a long series of inadequate studies, namely, that conducted under the direction of Dr. E. U. Condon at the University of Colorado, will make it very difficult to secure any new and more thorough investigations, yet my own examination of the problem forces me to call for just such new studies. I am enough of a realist to sense that, unless the present AAAS UFO Symposium succeeds in making the scientific community aware of the seriousness of the UFO problem, little immediate response to any call for new investigation is likely to appear.

In fact, the over-all public and scientific response to the UFO phenomena is itself a matter of substantial scientific interest, above all in its social-psychological aspects. Prior to my own investigations, I would never have imagined the wide spread reluctance to report an unusual and seemingly inexplicable event, yet that reluctance, and the attendant reluctance of scientists to exhibit serious interest in the phenomena in question,

are quite general. One regrettable result is the fact that the most credible of UFO witnesses are often those most reluctant to come forward with a report of the event they have witnessed. A second regrettable result is that only a very small number of scientists have taken the time and trouble to search out the nearly puzzling reports that tend to be diluted out by the much larger number of trivial and non-significant UFO reports. The net result is that there still exists no general scientific recognition of the scope and nature of the UFO problem.

Within the federal government, official responsibility for UFO investigations has rested with the Air Force since early 1948. Unidentified aerial objects quite naturally fall within the area of Air Force concern, so this assignment of responsibility was basically reasonable. However, once it became clear (early 1949) that UFO reports did not seem to involve advanced aircraft of some hostile foreign power, Air Force interest subsided to relatively low levels, marked, however, by occasional temporary resurgence of interest following large waves of UFO reports, such as that of 1952, or 1957, or 1965.

A most unfortunate pattern of press reporting developed by about 1953, in which the Air Force would assert that they had found no evidence of anything "defying explanation in terms of present-day science and technology" in their growing files of UFO reports. These statements to the public would have done little harm had they not been coupled systematically to press statements asserting that "the best scientific facilities available to the U. S. Air Force" had been and were being brought to bear on the UFO question. The assurances that substantial scientific competence was involved in Air Force UFO investigations have, I submit, had seriously deleterious scientific effects. Scientists who might otherwise have done enough checking to see that a substantial scientific puzzle lay in the UFO area were misled by these assurances into thinking that capable scientists had already done adequate study and found nothing. My own extensive checks have revealed so slight a total amount of scientific competence in two decades of Air Force-supported investigations that I can only regard the repeated asseverations of solid scientific study of the UFO . problem as the single most serious obstacle that the Air Force has put in the way of progress towards elucidation of the matter

I do not believe, let me stress, that this has been part of some top- secret coverup of extensive investigations by Air Force or security agencies; I have found no substantial basis for accepting that theory of why the Air Force has so long failed to respond appropriately to the many significant and scientifically intriguing UFO reports coming from within its own ranks. Briefly, I see grand foulup but not grand coverup. Although numerous instances could be cited wherein Air Force spokesmen failed to release anything like complete details of UFO reports, and although this has had the regrettable consequence of denying scientists at large even a dim notion of the almost incredible nature of some of the more impressive Air Force-related UFO reports, I still feel that the most grievous fault of 22 years of Air Force handling of the UFO problem has consisted of their repeated public assertions that they had substantial scientific competence on the job.

Close examination of the level of investigation and the level of scientific analysis involved in Project Sign (1948-9), Project Grudge (1949- 52), and Project Bluebook (1953 to date), reveals that these were, viewed scientifically, almost meaning less investigations. Even during occasional periods (e.g., 1952) characterized by fairly active investigation of UFO cases, there was still such slight scientific expertise involved that there was never any real chance that the puzzling phenomena encountered in the most significant UFO cases would be elucidated. Furthermore, the panels, consultants, contractual studies, etc., that the Air Force has had working on the UFO problem over the past 22 years have, with essentially no exception, brought almost negligible scientific scrutiny into the picture. Illustrative examples will be given.

The Condon Report, released in January, 1968, after about two years of Air Force-supported study is, in my opinion, quite inadequate. The sheer bulk of the Report, and the inclusion of much that can only be viewed as "scientific padding", cannot conceal from anyone who studies it closely the salient point that it represents an examination of only a tiny fraction of the most puzzling UFO reports of the past two decades, and that its level of scientific argumentation is wholly unsatisfactory. Furthermore, of the roughly 90 cases that it

specifically confronts, over 30 are conceded to be unexplained. With so large a fraction of unexplained cases (out of a sample that is by no means limited only to the truly puzzling cases, but includes an objectionably large number of obviously trivial cases), it is far from clear how Dr. Condon felt justified in concluding that the study indicated "that further extensive study of UFOs probably cannot be justified in the expectation that science will be advanced thereby."

I shall cite a number of specific examples of cases from the Condon Report which I regard as entirely inadequately investigated and reported. One at Kirtland AFB, November 4, 1957, involved observations of a wingless egg-shaped object that was observed hovering about a minute over the field prior to departure at a climb rate which was described to me as faster than that of any known jets, then or now. The principal witnesses in this case were precisely the type of witnesses whose accounts warrant closest attention, since they were CAA tower observers who watched the UFO from the CAA tower with binoculars. Yet, when I located these two men in the course of my own check of cases from the Condon Report, I found that neither of them had even been contacted by members of the University of Colorado project! Both men were fully satisfied that they had been viewing a device with performance characteristics well beyond any thing in present or foreseeable aeronautical technology. The two men gave me descriptions that were mutually consistent and that fit closely the testimony given on Nov. 6, 1957, when they were interrogated by an Air Force investigator. The Condon Report attempts to explain this case as a light-aircraft that lost its way, came into the field area, and then left. This kind of explanation runs through the whole Condon Report, yet is wholly incapable of explaining the details of sightings such as that of the Kirtland AFB incident. Other illustrative instances in which the investigations summarized in the Condon Report exhibit glaring deficiencies will be cited. I suggest that there are enough significant unexplainable UFO reports just within the Condon Report itself to document the need for a greatly increased level of scientific study of UFOs.

That a panel of the National Academy of Sciences could endorse this study is to me disturbing. I find no evidence that the Academy panel did any independent checking of its own; and none of that 11-man panel had any significant prior investigative experience in this area, to my knowledge. I believe that this sort of Academy endorsement must be criticized; it hurts science in the long run, and I fear that this particular instance will ultimately prove an embarrassment to the National Academy of Sciences.

The Condon Report and its Academy endorsement have exerted a highly negative influence on clarification of the long-standing UFO problem; so much, in fact, that it seems almost pointless to now call for new and more extensive UFO investigations. Yet the latter are precisely what are needed to bring out into full light of scientific inquiry a phenomenon that could well constitute one of the greatest scientific problems of our times.

Some examples of UFO cases conceded to be unexplainable in the Condon Report and containing features of particularly strong scientific interest: Utica, N.Y., 6/23/55; Lakenheath, England, 8/13/56; Jackson, Ala., 11/14/56; Norfolk, Va., 8/30/57; RB-47 case, 9/19/57; Beverly Mass., 4/22/66; Donnybrook, N.D., 8/19/66; Haynesville, La., 12/30/66; Joplin, Mo., 1/13/67; Colorado Springs, Colo., 5/13/67.

Some examples of UFO cases considered explained in the Condon Report for which I would take strong exception to the argumentation presented and would regard as both unexplained and of strong scientific interest: Flagstaff, Ariz., 5/20/50; Washington, D. C., 7/19/52; Bellefontaine, O., 8/1/52; Haneda AFB, Japan, 8/5/52; Gulf of Mexico, 12/6/52; Odessa, Wash., 12/10/52; Continental Divide, N.M., 1/26/53; Seven Isles, Quebec, 6/29/54; Niagara Falls, N.Y., 7/25/57; Kirtland AFB, N.M., 11/4/57; Gulf of Mexico, 11/5/57; Peru, 12/30/66; Holloman AFB, 3/2/67; Kincheloe AFB, 9/11/67; Vandenberg AFB, 10/6/67; Milledgeville, Ga., 10/20/67.

Illustrative Cases

The following treats in detail the four principal UFO cases referred to in my Symposium talk. They are

presented as specific illustrations of what I regard as serious shortcomings of case-investigations in the Condon Report and in the 1947-69 Air Force UFO program. The four cases used as illustrations are the following :

1. RB-47 case, Gulf Coast area, Sept. 19, 1957
2. Lakenheath RAF Station, England, August 13-14, 1956
3. Haneda AFB, Japan, August 5-6, 1952
4. Kirtland AFB, New Mexico, Nov. 4, 1957

My principal conclusions are that scientific inadequacies in past years of UFO investigations by Air Force Project Bluebook have not been remedied through publication of the Condon Report, and that there remain scientifically very important unsolved problems with respect to UFOs. The investigative and evaluative deficiencies illustrated in the four cases examined in detail are paralleled by equally serious shortcomings in many other cases in the sample of about 90 UFO cases treated in the Condon Report. Endorsement of the conclusions of the Condon Report by the National Academy of Sciences appears to have been based on entirely superficial examination of the Report and the cases treated therein. Further study, conducted on a much more sound scientific level are needed.

Case 1. USAF RB-47, Gulf Coast area, September 19-20, 1957.

Brief summary: An Air Force RB-47, equipped with ECM (Electronic Countermeasures) gear, manned by six officers, was followed over a total distance in excess of 600 miles and for a time period of more than an hour, as it flew from near Gulfport, Miss., through Louisiana and Texas, and into southern Oklahoma. The unidentified object was, at various times, seen visually by the cockpit crew (as an intense white or red light), followed by ground-radar, and detected on ECM monitoring gear aboard the RB-47. Simultaneous appearances and disappearances on all three of those physically distinct "channels" mark this UFO case as especially intriguing from a scientific viewpoint. The incident is described as Case 5 in the Condon Report and is conceded to be unexplained. The full details, however, are not presented in that Report.

1. Summary of the Case:

The case is long and involved and filled with well-attested phenomena that defy easy explanation in terms of present-day science and technology. The RB-47 was flying out of Forbes AFB, Topeka, on a composite mission including gunnery exercises over the Texas-Gulf area, navigation exercises over the open Gulf, and ECM exercises in the return trip across the south-central U.S. This was an RB-47 carrying a six-man crew, of whom three were electronic warfare officers manning ECM (Electronic counter-measures) gear in the aft portion of the aircraft. One of the extremely interesting aspects of this case is that electromagnetic signals of distinctly radar-like character appeared definitely to be emitted by the UFO, yet it exhibited performance characteristics that seem to rule out categorically its having been any conventional or secret aircraft.

I have discussed the incident with all six officers of the crew:

Lewis D. Chase, pilot, Spokane, Wash. James H. McCoid, copilot, Offutt AFB Thomas H. Hanley, navigator, Vandenberg AFB John J. Provenzano, No. 1 monitor, Wichita Frank B. McClure, No. 2 monitor, Offutt AFB Walter A. Tuchscherer, No. 3 monitor, Topeka

Chase was a Major at the time; I failed to ask for information on 1957 ranks of the others. McClure and Hanley are currently Majors, so might have been Captains or Lieutenants in 1957. All were experienced men at the time. Condon Project investigators only talked with Chase, McCoid, and McClure, I ascertained. In my

checking it proved necessary to telephone several of them more than once to pin down key points; nevertheless the total case is so complex that I would assume that there are still salient points not clarified either by the Colorado investigators or by myself. Unfortunately, there appears to be no way, at present to locate the personnel involved in ground- radar observations that are a very important part of the whole case. I shall discuss that point below.

This flight occurred in September, 1957, just prior to the crew's reassignment to a European base. On questioning by Colorado investigators, flight logs were consulted, and based on the recollection that this flight was within a short time of departure from Forces to Germany, (plus the requirement that the date match a flight of the known type and geography) the 9/19/57 date seems to have emerged. The uncertainty as to whether it was early on the 19th or early on the 20th, cited above is a point of confusion I had not noted until preparing the present notes. Hence I am unable to add any clarification, at the moment; in this matter of the date confusion found in Thayer's discussion of the case (1, pp. 136-138). I shall try to check that in the near future. For the present, it does not vitiate case-discussion in any significant way.

The incident is most inadequately described in the Condon Report. The reader is left with the general notion that the important parts occurred near Ft. Worth, an impression strengthened by the fact that both Crow and Thayer discuss meteorological data only for that area. One is also left with no clear impression of the duration, which was actually over an hour. The incident involved an unknown airborne object that stayed with the RB-47 for over 600 miles. In case after case in the Condon Report, close checking reveals that quite significant features of the cases have been glossed over, or omitted, or in some instances seriously misrepresented. I submit that to fail to inform the reader that this particular case spans a total distance-range of some 600 miles and lasted well over an hour is an omission difficult to justify.

From my nine separate interviews with the six crew members, I assembled a picture of the events that makes it even more puzzling than it seems on reading the Condon Report -- and even the latter account is puzzling enough.

Just as the aircraft crossed the Mississippi coast near Gulfport, McClure, manning the #2 monitor, detected a signal near their 5 o'clock position (aft of the starboard beam). It looked to him like a legitimate ground-radar signal, but corresponded to a position out in the Gulf. This is the actual beginning of the complete incident; but before proceeding with details it is necessary to make quite clear what kind of equipment we shall be talking about as we follow McClure's successive observations.

Under conditions of war, bombing aircraft entering hostile territory can be assisted in their penetrations if any of a variety of electronic countermeasures (ECM techniques as they are collectively termed) are brought into action against ground-based enemy radar units. The initial step in all ECM operations is, necessarily, that of detecting the enemy radar and quantitatively identifying a number of relevant features of the radar system (carrier frequency, pulse repetition frequency, scan rate, pulse width) and, above all, its bearing relative to the aircraft heading. The latter task is particularly ample in principle, calling only for direction-finding antennas which pick up the enemy signal and display on a monitor scope inside the reconnaissance aircraft a blip or lobe that paints in the relative bearing from which the signal is coming.

The ECM gear used in RB-47's in 1957 is not now classified; the #2 monitor that McClure was on, he and the others pointed out, involved an ALA-6 direction-finder with back-to-back antennas in a housing on the undersurface of the RB-47 near the rear, spun at either 150 or 300 rpm as it scanned in azimuth. Inside the aircraft, its signals were processed in an APR-9 radar receiver and an ALA-5 pulse analyzer. All later references to the #2 monitor imply that system. The #1 monitor employed an APD-4 direction finding system, with a pair of antennas permanently mounted on either wing tip. Provenzano was on the #1 monitor. Tuchscherer was on the #3 monitor, whose specifications I did not ascertain because I could find no indication that it was involved in the observations.

Returning now to the initial features of the UFO episode, McClure at first thought he had 180-degree ambiguity in his scope, i.e., that the signal whose lobe painted at his 5 o'clock position was actually coming in from the 11 o'clock position perhaps from some ground radar in Louisiana. This suspicion, he told me, was temporarily strengthened as he became aware that the lobe was moving upslope. (It is important here and in features of the case cited below to understand how a fixed ground-radar paints on the ECM monitor scope as the reconnaissance aircraft flies toward its general direction: Suppose the ground radar is, at some instant, located at the 1 o'clock position relative to the moving aircraft, i.e., slightly off the starboard bow. As the aircraft flies along, the relative bearing steadily changes, so that the fixed ground unit is "seen" successively at the 2 o'clock, the 3 o'clock, and the 4 o'clock positions, etc. The lobe paints on the monitor scope at these successive relative azimuths, the 12 o'clock position being at the top of the scope, 3 o'clock at the right, etc. Thus any legitimate signal from a fixed ground radar must move downslope, excluding the special cases in which the radar is dead ahead or dead astern. Note carefully that we deal here only with direction finding gear. Range is unknown; we are not here speaking of an airborne radar set, just a radar-frequency direction-finder. In practice, range is obtained by triangulation computations based on successive fixes and known aircraft speed.)

As the lobe continued moving upslope, McClure said the strength of the incoming signal and its pulse characteristics all tended to confirm that this was some ground unit being painted with 180-degree ambiguity for some unknown electronic reason. It was at 2800 megacycles, a common frequency for S-band search radars.

However, after the lobe swung dead ahead, his earlier hypothesis had to be abandoned for it continued swinging over to the 11 o'clock position and continued downslope on the port side. Clearly, no 180-degree ambiguity was capable of accounting for this. Curiously, however, this was so anomalous that McClure did not take it very seriously and did not at that juncture mention it to the cockpit crew nor to his colleagues on the other two monitors. This upslope-downslope "orbit" of the unknown was seen only on the ALA-6, as far as I could establish. Had nothing else occurred, this first and very significant portion of the whole episode would almost certainly have been forgotten by McClure.

The signal faded as the RB-47 headed northward to the scheduled turning point over Jackson, Miss. The mission called for simulated detection and ECM operations against Air Force ground radar units all along this part of the flight plan, but other developments intervened. Shortly after making their turn westward over Jackson, Miss., Chase noted what he thought at first were the landing lights of some other jet coming in from near his 11 o'clock position, at roughly the RB-47's altitude. But no running lights were discernible and it was a single very bright white light, closing fast. He had just alerted the rest of the crew to be ready for sudden evasive maneuvers, when he and McCoid saw the light almost instantaneously change directions and rush across from left to right at an angular velocity that Chase told me he'd never seen matched in his flight experience. The light went from their 11 o'clock to the 2 o'clock position with great rapidity, and then blinked out.

Immediately after that, Chase and McCoid began talking about it on the interphone and McClure, recalling the unusual 2800 megacycle signal that he had seen over Gulfport now mentioned that peculiar incident for the first time to Chase and McCoid. It occurred to him at that point to set his #2 monitor to scan at 2800 mcs. On the first scan, McClure told me, he got a strong 2800 mcs signal from their 2 o'clock position, the bearing on which the luminous unknown object had blinked out moments earlier.

Provenzano told me that right after that they had checked out the #2 monitor on valid ground radar stations to be sure it was not malfunctioning and it appeared to be in perfect order. He then checked on his #1 monitor and also got a signal from the same bearing. There remained, of course, the possibility that just by chance, this signal was from a real radar down on the ground and off in that direction. But as the minutes went by, and the aircraft continued westward at about 500 kts. the relative bearing of the 2800 mcs source did not move

downscope on the #2 monitor, but kept up with them.

This quickly led to a situation in which the entire 6-man crew focussed all attention on the matter; the incident is still vivid in the minds of all the men, though their recollection for various details varies with the particular activities they were engaged in. Chase varied speed, to see if the relative bearing would change but nothing altered. After over a hundred miles of this, with the 2800 mcs source keeping pace with the aircraft, they were getting into the radar-coverage area of the Carswell AFB GCI (Ground Controlled Intercept) unit and Chase radioed that unit to ask if they showed any other air traffic near the RB-47. Carswell GCI immediately came back with the information that there was apparently another aircraft about 10 miles from them at their 2 o'clock position. (The RB-47 was unambiguously identifiable by its IFF signal; the "other aircraft" was seen by "skin paint" Only, i.e., by direct radar reflection rather than via an IFF transponder, Col. Chase explained.)

This information, each of the men emphasized to me in one way or another, made them a bit uneasy for the first time. I asked McClure a question that the Colorado investigators either failed to ask or did not summarize in their Report. Was the signal in all respects comparable to that of a typical ground radar? McClure told me that this was what baffled him the most, then and now. All the radar signature characteristics, as read out on his ALA-5 pulse analyzer, were completely normal -- it had a pulse repetition frequency and pulse width like a CPS-6B and even simulated a scan rate: But its intensity, McClure pointed out, was so strong that "it would have to had an antenna bigger than a bomber to put out that much signal." And now, the implications of the events over Gulfport took on new meaning. The upscope- downscope sweep of his #2 monitor lobe implied that this source, presuming it to be the same one now also being seen on ground radar at Carswell GCI, had flown a circle around the RB-47 at 30-35,000 ft altitude while the aircraft was doing about 500 kts.

Shortly after Carswell GCI began following the two targets, RB-47 and unknown, still another significant action unfolded. McClure suddenly noted the lobe on the #2 monitor was beginning to go upscope, and almost simultaneously, Chase told me, GCI called out that the second airborne target was starting to move forward. Keep in mind that no visual target was observable here; after blinking out at the 12 o'clock position, following its lightning-like traverse across the nose of the aircraft, no light had been visible. The unknown now proceeded to move steadily around to the 12 o'clock position, followed all the while on the #2 monitor and on the GCI scope down at Carswell near Ft. Worth.

As soon as the unknown reached the 12 o'clock position, Chase and McCoid suddenly saw a bright red glow "bigger than a house", Chase said, and lying dead ahead, precisely the bearing shown on the passive radar direction-finder that McClure was on and precisely the bearing now indicated on the GCI scope. _Three independent sensing systems_ were at this juncture giving seemingly consistent-indications: two pairs of human eyes, a ground radar, and a direction-finding radar receiver in the aircraft.

One of the important points not settled by the Colorado investigations concerned the question of whether the unknown was ever painted on any radar set on the RB-47 itself. Some of the men thought the navigator had seen it on his set, others were unsure. I eventually located Maj. Hanley at Vandenberg and he informed me that all through the incident, which he remembered very well, he tried, unsuccessfully to pick up the unknown on his navigational radar (K-system). I shall not recount all of the details of his efforts and his comments, but only mention the end result of my two telephone interviews with him. The important question was what sort of effective range that set had. Hanley gave the pertinent information that it could just pick up a large tanker of the KC-97 type at about 4 miles range, when used in the "altitude- hold" mode, with antenna tipped up to maximum elevation. But both at the start of its involvement and during the object's swing into the 12 o'clock position, GCI showed it remaining close to 10 miles in range from the RB-47. Thus Hanley's inability to detect it on his K-system navigational radar in altitude hold only implies that whatever was out there had a radar cross-section that was less than about 16 times that of a KC-97 (roughly twice 4 miles, inverse 4th-power law), The unknown gave a GCI return that suggested a cross-section comparable to an ordinary aircraft, Chase told me, which is consistent with Hanley's non-detection of the object. The Condon Report gives the

impression the navigator did detect it, but this is not correct.

I have in my files many pages of typed notes on my interviews, and cannot fill in all of the intriguing details here. Suffice it to say that Chase then went to maximum allowable power, hoping to close with the unknown, but it just stayed ahead at about 10 miles as GCI kept telling them; it stayed as a bright red light dead ahead, and it kept painting as a bright lobe on the top of McClure's ALA-6 scope. By this time they were well into Texas still at about 35,000 ft and doing upwards of 500 knots, when Chase saw it begin to veer to the right and head between Dallas and Ft. Worth. Getting FAA clearance to alter his own flight plan and to make sure other jet traffic was out of his way, he followed its turn, and then realized he was beginning to close on it for the first time. Almost immediately GCI told him the unknown had stopped moving on the ground-radar scope. Chase and McCoid watched as they came almost up to it. Chase's recollections on this segment of the events were distinctly clearer than McCoid's. McCoid was, of course, sitting aft of Chase and had the poorer view; also he said he was doing fuel-reserve calculations in view of the excess fuel-use in their efforts to shake the unknown, and had to look up from the lighted cockpit to try to look out intermittently, while Chase in the forward seat was able to keep it in sight more nearly continuously. Chase told me that he'd estimate that it was just ahead of the RB-47 and definitely below them when it instantaneously blinked out. At that same moment McClure announced on the interphone that he'd lost the 2800 mcs signal, and GCI said it had disappeared from their scope. Such simultaneous loss of signal on what we can term three separate channels is most provocative, most puzzling.

Putting the aircraft into a left turn (which Chase noted consumes about 15-20 miles at top speed), they kept looking back to try to see the light again. And, about halfway through the turn (by then the aircraft had reached the vicinity of Mineral Wells, Texas, Chase said), the men in the cockpit suddenly saw the bright red light flash on again, back along their previous flight path but distinctly lower, and simultaneously GCI got a target again and McClure started picking up a 2800 mcs signal at that bearing: (As I heard one after another of these men describe all this, I kept trying to imagine how it was possible that Condon could listen, at the October, 1967, plasma conference at the UFO Project, as Col. Chase recounted all this and shrug his shoulders and walk out.)

Securing permission from Carswell GCI to undertake the decidedly non- standard maneuver of diving on the unknown, Chase put the RB-47 nose down and had reached about 20,000 ft, he recalls, when all of a sudden the light blinked out, GCI lost it on their scope, and McClure reported loss of signal on the #2 monitor: Three-channel consistency once more.

Low on fuel, Chase climbed back up to 25,000 and headed north for Oklahoma. He barely had it on homeward course when McClure got a blip dead astern and Carswell radioed that they had a target once more trailing the RB- 47 at about 10 miles. Rear visibility from the topblisters of the RB-4 now precluded easy visual check, particularly if the unknown was then at lower altitude (Chase estimated that it might have been near 15,000 ft when he lost it in the dive). It followed them to southern Oklahoma and then disappeared.

2. Discussion:

This incident is an especially good example of a UFO case in which observer credibility and reliability do not come into serious question, a case in which more than one (here three) channel of information figures in the over-all observations, and a case in which the reported phenomena appear to defy explanation in terms of either natural or technological phenomena.

In the Condon Report, the important initial incident in which the unknown 2800 MC source appeared to orbit the RB-47 near Gulfport is omitted. In the Condon Report, the reader is given no hint that the object was with the aircraft for over 600 miles and for over an hour. No clear sequence of these events is spelled out, nor is the reader made aware of all of the "three- channel" simultaneous appearances or disappearances that were so emphatically stressed to me by both Chase and McClure in my interviews with them. But even despite

those degrees of incompleteness, any reader of the account of this case in the Condon Report must wonder that an incident of this sort could be left as unexplained and yet ultimately treated, along with the other unexplained cases in that Report, as calling for no further scientific attention.

Actually, various hypotheses (radar anomalies, mirage effects) are weighed in one part of the Condon Report where this case is discussed separately (pp. 136-138). But the suggestion made there that perhaps an inversion near 2 km altitude was responsible for the returns at the Carswell GCI unit is wholly untenable. In an Appendix, a very lengthy but non-relevant discussion of ground return from anomalous propagation appears; in fact, it is so unrelated to the actual circumstances of this case as to warrant no comment here. Chase's account emphasized that the GCI radar(s) had his aircraft and the unknown object on-scope for a total flight-distance of the order of several hundred miles, including a near overflight of the ground radar. With such wide variations in angles of incidence of the ground-radar beam on any inversion or duct, however intense, the possibility of anomalous propagation effects yielding a consistent pattern of spurious echo matching the reported movements and the appearances and disappearances of the target is infinitesimal. And the more so in view of the simultaneous appearances and disappearances on the ECM gear and via visible emissions from the unknown. To suggest, as is tentatively done on p. 138 that the "red glow" might have been a "mirage of Oklahoma City", when the pilot's description of the luminous source involves a wide range of viewing angles, including two instances when he was viewing it at quite large depression angles, is wholly unreasonable. Unfortunately, that kind of casual ad hoc hypothesizing with almost no attention to relevant physical considerations runs all through the case-discussions in the treatment of radar and optical cases in the Condon Report, frequently (though not in this instance) being made the basis of "explanations" that are merely absurd. On p. 265 of the Report, the question of whether this incident might be explained in terms of any "plasma effect" is considered but rejected. In the end, this case is conceded to be unexplained.

No evidence that a report on this event reached Project Bluebook was found by the Colorado investigators. That may seem hard to believe for those who are under the impression that the Air Force has been diligently and exhaustively investigating UFO reports over the past 22 years. But to those who have examined more closely the actual levels of investigation, lack of a report on this incident is not so surprising. Other comparable instances could be cited, and still more where the military aircrews elected to spare themselves the bother of interrogation, by not even reporting events about as puzzling as those found in this RB-47 incident.

But what is of greatest present interest is the point that here we have a well-reported, multi-channel, multiple-witness UFO report, coming in fact from within the Air Force itself, investigated by the Condon Report team, conceded to be unexplained, and yet it is, in final analysis, ignored by Dr. Condon. In no section of the Report specifically written by the principal investigator does he even allude to this intriguing case. My question is how such events can be written off as demanding no further scientific study. To me, such cases seem to cry out for the most intensive scientific study -- and the more so because they are actually so much more numerous than the scientific community yet realizes. There is a scientific mystery here that is being ignored and shoved under the rug; the strongest and most unjustified shove has come from the Condon Report. "unjustified" because that Report itself contains so many scientifically puzzling unexplained cases (approximately 30 out of 90 cases considered) that it is extremely difficult to understand how its principal investigator could have construed the contents of the Report as supporting a view that UFO studies should be terminated.

Case 2. Lakenheath and Bentwaters RAF/USAF units; England, August 13-14, 1956.

Brief summary: Observations of unidentified objects by USAF and RAF personnel, extending over 5 hours, and involving ground-radar, airborne-radar, ground visual and airborne-visual sightings of high-speed unconventionally maneuvering objects in the vicinity of two RAF stations at night. It is Case 2 in the Condon Report and is there conceded to be unexplained.

1. Introduction:

This case will illustrate, in significant ways, the following points:

- a) It illustrates the fact that many scientifically intriguing UFO reports have lain in USAF/Bluebook files for years without knowledge thereof by the scientific community.
- b) It represents a large subset of UFO cases in which all of the observations stemmed from military sources and which, had there been serious and competent scientific interest operating in Project Bluebook, could have been very thoroughly investigated while the information was fresh. It also illustrates the point that the actual levels of investigation were entirely inadequate in even as unexplainable and involved cases as this one.
- c) It illustrates the uncomfortably incomplete and internally inconsistent features that one encounters in almost every report of its kind in the USAF/Bluebook files at Wright-Patterson AFB, features attesting to the dearth of scientific competence in the Air Force UFO investigations over the past 20 years.
- d) It illustrates, when the original files are carefully studied and compared with the discussion thereof in the Condon Report, shortcomings in presentation and critique given many cases in the Condon Report.
- e) Finally, I believe it illustrates an example of those cases conceded to be unexplainable by the Condon Report that argue need for much more extensive and more thorough scientific investigation of the UFO problem, a need negated in the Condon Report and in the Academy endorsement thereof.

My discussion of this case will be based upon the 30-page Bluebook case- file, plus certain other information presented on it in the Condon Report. This "Lakenheath case" was not known outside of USAF circles prior to publication of the Condon Report. None of the names of military personnel involved are given in the Condon Report. (Witness names, dates, and locales are deleted from all of the main group of cases in that Report, seriously impeding independent scientific check of case materials.) I secured copies of the case-file from Bluebook, but all names of military personnel involved in the incident were cut out of the Xerox copies prior to releasing the material to me. Hence I have been unable to interview personally the key witnesses. However, there is no indication that anyone on the Colorado Project did any personal interviews, either; so it would appear I have had access to the same basic data used in the Condon Report's treatment of this extremely interesting case.

For no justified reason, the Condon Report not only deletes witness names, but also names of localities of the UFO incidents in its main sample of 59 cases. In this Lakenheath case, deletion of locality names creates much confusion for the reader, since three distinct RAF stations figure in the incident and since the discharged non-commissioned officer from whom they received first word of this UFO episode confused the names of two of those stations in his own account that appears in the Condon Report. That, plus other reportorial deficiencies in the presentation of the Lakenheath case in the Condon Report, will almost certainly have concealed its real significance from most readers of the Report.

Unfortunately, the basic Bluebook file is itself about as confusing as most Bluebook files on UFO cases. I shall attempt to mitigate as many of those difficulties as I can in the following, by putting the account into better over-all order than one finds in the Condon Report treatment.

2. General Circumstances:

The entire episode extended from about 2130Z, August 13, to 0330Z, August 14, 1956; thus this is a night-time case. The events occurred in east-central England, chiefly in Suffolk. The initial reports centered around Bentwaters RAF Station, located about six miles east of Ipswich, near the coast, while much of the subsequent action centers around Lakenheath RAF Station, located some 20 miles northeast of Cambridge.

Sculthorpe RAF Station also figures in the account, but only to a minor extent; it is near Fakenham, in the vicinity of The Wash. GCA (Ground Controlled Approach) radars at two of those three stations were involved in the ground-radar sightings, as was an RTCC (Radar Traffic Control Center) radar unit at Lakenheath. The USAF non-com who wrote to the Colorado Project about this incident was a Watch Supervisor on duty at the Lakenheath RTCC unit that night. His detailed account is reproduced in the Condon Report (pp. 248-251). The Report comments on "the remarkable accuracy of the account of the witness as given in (his reproduced letter), which was apparently written from memory 12 years after the incident." I would concur, but would note that, had the Colorado Project only investigated more such striking cases of past years, it would have found many other witnesses in UFO cases whose vivid recollections often match surprising well checkable contemporary accounts. My experience thereon has been that, in multiple-witness cases where one can evaluate consistency of recollections, the more unusual and inexplicable the original UFO episode, the more it impressed upon the several witnesses' memories a meaningful and still-useful pattern of relevant recollections. Doubtless, another important factor operates: the UFO incidents that are the most striking and most puzzling probably have been discussed by the key witnesses enough times that their recollections have been thereby reinforced in a useful way.

The only map given in the Condon Report is based on a sketch-map made by the non-com who alerted them to the case. It is misleading, for Sculthorpe is shown 50 miles east of Lakenheath, whereas it actually lies 30 miles north-northeast. The map does not show Bentwaters at all; it is actually some 40 miles east-southeast of Lakenheath. Even as basic items as those locations do not appear to have been ascertained by those who prepared the discussion of this case in the Condon Report, which is most unfortunate, yet not atypical.

That this incident was subsequently discussed by many Lakenheath personnel was indicated to me by a chance event. In the course of my investigations of another radar UFO case from the Condon Report, that of 9/11/67 at Kincheloe AFB, I found that the radar operator involved therein had previously been stationed with the USAF detachment at Lakenheath and knew of the events at second-hand because they were still being discussed there by radar personnel when he arrived many months later.

3. Initial Events at Bentwaters, 2130Z to 2200Z

One of the many unsatisfactory aspects of the Condon Report is its frequent failure to put before the reader a complete account of the UFO cases it purports to analyze scientifically. In the present instance, the Report omits all details of three quite significant radar-sightings made by Bentwaters GCA personnel prior to their alerting the Lakenheath GCA and RTCC groups at 2255 LST. This omission is certainly not because of correspondingly slight mention in the original Bluebook case-file; rather, the Bentwaters sightings actually receive more Bluebook attention than the subsequent Lakenheath events. Hence, I do not see how such omissions in the Condon Report can be justified.

a) First radar sighting, 2130Z. Bentwaters GCA operator, A/2c _____ (I shall use a blank to indicate the names razor-bladed out of my copies of the case-file prior to release of the file items to me), reported picking up a target 25-30 miles ESE, which moved at very high speed on constant 295 deg. heading across his scope until he lost it 15-20 miles to the NW of Bentwaters. In the Bluebook file, A/2c _____ is reported as describing it as a strong radar echo, comparable to that of a typical aircraft, until it weakened near the end of its path across his scope. He is quoted as estimating a speed of the order of 4000 mph, but two other cited quantities suggest even higher speeds. A transit time of 30 seconds is given, and if one combines that with the reported range of distance traversed, 40-50 miles, a speed of about 5000- 6000 mph results. Finally, A/2c _____ stated that it covered about 5-6 miles per sweep of the AN/MPN-11A GCA radar he was using. The sweep-period for that set is given as 2 seconds (30 rpm), so this yields an even higher speed- estimate of about 9000 mph. (Internal discrepancies of this sort are quite typical of Bluebook case-files, I regret to say. My study of many such files during the past three years leaves me no conclusion but that Bluebook work has never represented high-caliber scientific work, but rather has operated as a perfunctory bookkeeping and filing operation during most of its life. Of the three speed figures just mentioned, the latter derives from the

type of observation most likely to be reasonably accurate, in my opinion. The displacement of a series of successive radar blips on a surveillance radar such as the MPN-11A, can be estimated to perhaps a mile or so with little difficulty, when the operator has as large a number of successive blips to work with as is here involved. Nevertheless, it is necessary to regard the speed as quite uncertain here, though presumably in the range of several thousand miles per hour and hence not associable with any conventional aircraft, nor with still higher-speed meteors either.)

b) Second radar sighting, 2130-2155Z. A few minutes after the preceding event, T/Sgt _____ picked up on the same MPN-11A a group of 12-15 objects about 8 miles SW of Bentwaters. In the report to Bluebook, he pointed out that "these objects appeared as normal targets on the GCA scope and that normal checks made to determine possible malfunctions of the GCA radar failed to indicate anything was technically wrong." The dozen or so objects were moving together towards the NE at varying speeds, ranging between 80 and 125 mph, and "the 12 to 15 unidentified objects were preceded by 3 objects which were in a triangular formation with an estimated 1000 feet separating each object in this formation." The dozen objects to the rear "were scattered behind the lead formation of 3 at irregular intervals with the whole group simultaneously covering a 6 to 7 mile area," the official report notes.

Consistent radar returns came from this group during their 25-minute movement from the point at which they were first picked up, 8 mi. SW, to a point about 40 mi. NE of Bentwaters, their echoes decreasing in intensity as they moved off to the NE. When the group reached a point some 40 mi. NE, they all appeared to converge to form a single radar echo whose intensity is described as several times larger than a B-36 return under comparable conditions. Then motion ceased, while this single strong echo remained stationary for 10-15 minutes. Then it resumed motion to the NE for 5-6 miles, stopped again for 3-5 minutes, and finally moved northward and off the scope.

c) Third radar sighting, 2200Z. Five minutes after the foregoing formation moved off-scope, T/Sgt _____ detected an unidentified target about 30 mi. E of the Bentwaters GCA station, and tracked it in rapid westward motion to a point about 25 mi. W of the station, where the object "suddenly disappeared off the radar screen by rapidly moving out of the GCS radiation pattern," according to his interpretation of the event. Here, again, we get discordant speed information, for T/Sgt _____ gave the speed only as being "in excess of 4000 mph," whereas the time-duration of the tracking, given as 16 sec, implies a speed of 12,000 mph, for the roughly 55 mi. track-length reported. Nothing in the Bluebook files indicates that this discrepancy was investigated further or even noticed, so one can say only that the apparent speed lay far above that of conventional aircraft.

d) Other observations at Bentwaters. A control tower sergeant, aware of the concurrent radar tracking, noted a light "the size of a pin-head at arm's length" at about 10 deg. elevation to the SSE. It remained there for about one hour, intermittently appearing and disappearing. Since Mars was in that part of the sky at that time, a reasonable interpretation is that the observer was looking at that planet.

A T-33 of the 512th Fighter Interceptor Squadron, returning to Bentwaters from a routine flight at about 2130Z, was vectored to the NE to search for the group of objects being tracked in that sector. Their search, unaided by airborne radar, led to no airborne sighting of any aircraft or other objects in that area, and after about 45 minutes they terminated search, having seen only a bright star in the east and a coastal beacon as anything worth noting. The Bluebook case-file contains 1956 USAF discussions of the case that make a big point of the inconclusiveness of the tower operator's sighting and the negative results of the T-33 search, but say nothing about the much more puzzling radar-tracking incidents than to stress that they were of "divergent" directions, intimating that this somehow put them in the category of anomalous propagation, which scarcely follows. Indeed, none of the three cited radar sightings exhibits any features typical of AP echoes. The winds over the Bentwaters area are given in the file. They jump from the surface level (winds from 230 deg. at 5-10 kts) to the 6000 ft level (260 deg., 30 kts), and then hold at a steady 260 deg. up to 50,000 ft, with speeds rising to a maximum of 90 kts near 30,000 ft. Even if one sought to invoke the highly

dubious Borden-Vickers hypothesis (moving waves on an inversion surface), not even the slowest of the tracked echoes (80-125 mph) could be accounted for, nor is it even clear that the direction would be explainable. Furthermore, the strength of the individual echoes (stated as comparable to normal aircraft returns), the merging of the 15 or so into a single echo, the two intervals of stationarity, and final motion off-scope at a direction about 45 deg. from the initial motion, are all wholly unexplainable in terms of AP in these 2130-2155Z incidents. The extremely high-speed westward motion of single targets is even further from any known radar-anomaly associated with disturbed propagation conditions. Blips that move across scopes from one sector to the opposite, in steady heading at steady apparent speed, correspond neither to AP nor to internal electronic disturbances. Nor could interference phenomena fit such observed echo behavior. Thus, this 30-minute period, 2130- 2200Z, embraced three distinct events for which no satisfactory explanation exists. That these three events are omitted from the discussions in the Condon Report is unfortunate, for they serve to underscore the scientific significance of subsequent events at both Bentwaters and Lakenheath stations.

4. Comments on Reporting of Events After 2255Z, 8/13/56:

The events summarized above were communicated to Bluebook by Capt. Edward L. Holt of the 81st Fighter-Bomber Wing stationed at Bentwaters, as Report No. IR-1-56, dated 31 August, 1956. All events occurring subsequent to 2200Z, on the other hand, were communicated to Project Bluebook via an earlier, lengthy teletype transmission from the Lakenheath USAF unit, sent out in the standard format of the report-form specified by regulation AFR200-2. Two teletype transmissions, dated 8/17/56 and 8/21/56, identical in basic content, were sent from Lakenheath to Bluebook. The Condon Report presents the content of that teletype report on pp. 252-254, in full, except for deletion of all names and localities and omission of one important item to be noted later here. However, most readers will be entirely lost because what is presented actually constitutes a set of answers to questions that are not stated! The Condon Report does not offer the reader the hint that the version of AFR200-2 appearing in the Report's Appendix, pp. 819-826 (there identified by its current designation, AFR80-17) would provide the reader with the standardized questions needed to translate much of the otherwise extremely confusing array of answers on pp. 252-254. For that reason, plus others, many readers will almost certainly be greatly (and entirely unnecessarily) confused on reading this important part of the Lakenheath report in the Condon Report.

That confusion, unfortunately, does not wholly disappear upon laboriously matching questions with answers, for it has long been one of the salient deficiencies of the USAF program of UFO report collection that the format of AFR200-2 (or its sequel AFR80-17) is usually only barely adequate and (especially for complex episodes such as that involved here) often entirely incapable of affording the reporting office enough scope to set out clearly and in proper chronological order all of the events that may be of potential scientific significance. Anyone who has studied many Bluebook reports in the AFR200-2 format, dating back to 1953, will be uncomfortably aware of this gross difficulty. Failure to carry out even modest followup investigations and incorporate findings thereof into Bluebook case-files leaves most intriguing Bluebook UFO cases full of unsatisfactorily answered questions. But those deficiencies do not, in my opinion, prevent the careful reader from discerning that very large numbers of those UFO cases carry highly significant scientific implications, implications of an intriguing problem going largely unexamined in past years.

5. Initial Alerting of Lakenheath GCA and RTCC:

The official files give no indication of any further UFO radar sightings by Bentwaters GCA from 2200 until 2255Z. But, at the latter time, another fast-moving target was picked up 30 mi. E of Bentwaters, heading almost due west at a speed given as "2000-4000 mph". It passed almost directly over Bentwaters, disappearing from their GCA scope for the usual beam-angle reasons when within 2-3 miles (the Condon Report intimates that this close in disappearance is diagnostic of AP, which seems to be some sort of tacit over- acceptance of the 1952 Borden-Vickers hypothesis), and then moving on until it disappeared from the

scope 30 mi. W of Bentwaters.

Very significantly, this radar-tracking of the passage of the unidentified target was matched by concurrent visual observations, by personnel on the ground looking up and also from an overhead aircraft looking down. Both visual reports involved only a light, a light described as blurred out by its high speed; but since the aircraft (identified as a C-47 by the Lakenheath non-com whose letter called this case to the attention of the Colorado Project) was flying only at 4000 ft, the altitude of the unknown object is bracketed within rather narrow bounds. (No mention of any sonic boom appears; but the total number of seemingly quite credible reports of UFOs moving at speeds far above sonic values and yet not emitting booms is so large that one must count this as just one more instance of many currently inexplicable phenomena associated with the UFO problem.) The reported speed is not fast enough for a meteor, nor does the low-altitude flat trajectory and absence of a concussive shock wave match any meteoric hypothesis. That there was visual confirmation from observation points both above and below this fast-moving radar-tracked object must be viewed as adding still further credence to, and scientific interest in, the prior three Bentwaters radar sightings of the previous hour.

Apparently immediately after the 2255Z events, Bentwaters GCA alerted GCA Lakenheath, which lay off to its WNW. The answers to Questions 2(A) and 2(B) of the AFR200-2 format (on p. 253 of the Condon Report) seem to imply that Lakenheath ground observers were alerted in time to see a luminous object come in, at an estimated altitude of 2000-2500 ft, and on a heading towards SW. The lower estimated altitude and the altered heading do not match the Bentwaters sighting, and the ambiguity so inherent in the AFR200-2 format simply cannot be eliminated here, so the precise timing is not certain. All that seems certain here is that, at or subsequent to the Bentwaters alert-message, Lakenheath ground observers saw a luminous object come in out of the NE at low altitude, then _stop_, and take up an easterly heading and resume motion eastward out of sight.

The precise time-sequence of the subsequent observations is not clearly deducible from the Lakenheath TWX sent in compliance with AFR200-2. But that many very interesting events, scientifically very baffling events, soon took place is clear from the report. No followup, from Bluebook or other USAF sources, was undertaken, and so this potentially very important case, like hundreds of others, simply sent into the Bluebook files unclarified. I am forced to stress that nothing reveals so clearly the past years of scientifically inadequate UFO investigation as a few days' visit to Wright- Patterson AFB and a diligent reading of Bluebook case reports. No one with any genuine scientific interest in solving the UFO problem would have let accumulate so many years of reports like this one without seeing to it that the UFO reporting and followup investigations were brought into entirely different status from that in which they have lain for over 20 years.

Deficiencies having been noted, I next catalog, without benefit of the exact time-ordering that is so crucial to full assessment of any UFO event, the intriguing observations and events at or near Lakenheath subsequent to the 2255Z alert from Bentwaters.

6. Non-chronological Summary of Lakenheath Sightings, 2255Z-0330Z.

a. Visual observations from ground. As noted two paragraphs above, following the 2255Z alert from GCA Bentwaters, USAF ground observers at the Lakenheath RAF Station observed a luminous object come in on a southwesterly heading, stop, and then move off out of sight to the east. Subsequently, at an unspecified time, two moving white lights were seen, and "ground observers stated one white light joined up with another and both disappeared in formation together" (recall earlier radar observations of merging of targets seen by Bentwaters GCA). No discernible features of these luminous sources were noted by ground observers, but both the observers and radar operators concurred in their report-description that "the objects (were) traveling at terrific speeds and then stopping and changing course immediately." In a passage of the original Bluebook report which was for some reason not included in the version presented in the Condon Report, this concordance of radar and visual observations is underscored: "Thus two radar sets (i.e., Lakenheath GCA and RATCC radars) and three ground observers report substantially same." Later in the original Lakenheath

report, this same concordance is reiterated: "the fact that radar and ground visual observations were made on its rapid acceleration and abrupt stops certainly lend credulance (sic) to the report."

Since the date of this incident coincides with the date of peak frequency of the Perseid meteors, one might ask whether any part of the visual observations could have been due to Perseids. The basic Lakenheath report to Bluebook notes that the ground observers reported "unusual amount of shooting stars in sky", indicating that the erratically moving light(s) were readily distinguishable from meteors. The report further remarks thereon that "the objects seen were definitely not shooting stars as there were no trails as are usual with such sightings." Furthermore, the stopping and course reversals are incompatible with any such hypothesis in the first place.

AFR200-2 stipulates that observer be asked to compare the UFO to the size of various familiar objects when held at arm's length (Item 1-B in the format). In answer to that item, the report states: "One observer from ground stated on first observation object was about size of golf ball. As object continued in flight it became a 'pin point'." Even allowing for the usual inaccuracies in such estimates, this further rules out Perseids, since that shower yields only meteors of quite low luminosity.

In summary of the ground-visual observations, it appears that three ground observers at Lakenheath saw at least two luminous objects, saw these over an extended though indefinite time period, saw them execute sharp course changes, saw them remain motionless at least once, saw two objects merge into a single luminous object at one juncture, and reported motions in general accord with concurrent radar observations. These ground-visual observations, in themselves, constitute scientifically interesting UFO report-material. Neither astronomical nor aeronautical explanations, nor any meteorological-optical explanations, match well those reported phenomena. One could certainly wish for a far more complete and time-fixed report on these visual observations, but even the above information suffices to suggest some unusual events. The unusualness will be seen to be even greater on next examining the ground-radar observations from Lakenheath. And even stronger interest emerges as we then turn, last of all, to the airborne-visual and airborne-radar observations made near Lakenheath.

b. Ground-radar observations at Lakenheath. The GCA surveillance radar at Lakenheath is identified as a CPN-4, while the RATCC search radar was a CPS-5 (as the non-com correctly recalled in his letter). Because the report makes clear that these two sets were concurrently following the unknown targets, it is relevant to note that they have different wavelengths, pulse repetition frequencies, and scan-rates, which (for reasons that need not be elaborated here) tends to rule out several radar-anomaly hypotheses (e.g., interference echoes from a distant radar, second-time-around effects, AP). However, the reported maneuvers are so unlike any of those spurious effects that it seems almost unnecessary to confront those possibilities here.

As with the ground-visual observations, so also with these radar-report items, the AFR200-2 format limitations plus the other typical deficiencies of reporting of UFO events preclude reconstruction in detail, and in time-order, of all the relevant events. I get the impression that the first object seen visually by ground observers was not radar-tracked, although this is unclear from the report to Bluebook. One target whose motions were jointly followed both on the CPS-5 at the Radar Air Traffic Control Center and on the shorter-range, faster-scanning CPN-4 at the Lakenheath GCA unit was tracked "from 6 miles west to about 20 miles SW where target stopped and assumed a stationary position for five minutes. Target then assumed a heading northwesterly (I presume this was intended to read 'northeasterly', and the non-com so indicates in his recollective account of what appears to be the same maneuvers) into the Station and stopped two miles NW of Station. Lakenheath GCA reports three to four additional targets were doing the same maneuvers in the vicinity of the Station. Thus two radar sets and three ground observers report substantially same." (Note that the quoted item includes the full passage omitted from the Condon Report version, and note that it seems to imply that this devious path with two periods of stationary hovering was also reported by the visual observers. However, the latter is not entirely certain because of ambiguities in the structure of the basic report as forced into the AFR200-2 format).

At some time, which context seems to imply as rather later in the night (the radar sightings went on until about 0330Z), "Lakenheath Radar Air Traffic Control Center observed object 17 miles east of Station making sharp rectangular course of flight. This maneuver was not conducted by circular path but on right angles at speeds of 600-800 mph. Object would stop and start with amazing rapidity." The report remarks that "...the controllers are experienced and technical skills were used in attempts to determine just what the objects were. When the target would stop on the scope, the MTI was used. However, the target would still appear on the scope." (The latter is puzzling. MTI, Moving Target Indication, is a standard feature on search or surveillance radars that eliminates ground returns and returns from large buildings and other motionless objects. This very curious feature of display of stationary modes while the MTI was on adds further strong argument to the negation of any hypothesis of anomalous propagation of ground-returns. It was as if the unidentified target, while seeming to hover motionless, was actually undergoing small-amplitude but high-speed jittering motion to yield a scope- displayed return despite the MTI. Since just such jittery motion has been reported in visual UFO sightings on many occasions, and since the coarse resolution of a PPI display would not permit radar-detection of such motion if its amplitude were below, say, one or two hundred meters, this could conceivably account for the persistence of the displayed return during the episodes of "stationary" hovering, despite use of MTI.)

The portion of the radar sightings just described seems to have been vividly recollected by the retired USAF non-com who first called this case to the attention of the Colorado group. Sometime after the initial Bentwaters alert, he had his men at the RATCC scanning all available scopes, various scopes set at various ranges. He wrote that "...one controller noticed a stationary target on the scopes about 20 to 25 miles southwest. This was unusual, as a stationary target should have been eliminated unless it was moving at a speed of at least 40 to 45 knots. And yet we could detect no movement at all. We watched this target on all the different scopes for several minutes and I called the GCA Unit at (Lakenheath) to see if they had this target on their scope in the same geographical location. As we watched, the stationary target started moving at a speed of 400 to 600 mph in a north- northeast direction until it reached a point about 20 miles north northwest of (Lakenheath). There was no slow start or build-up to this speed -- it was constant from the second it started to move until it stopped." (This description, written 11 years after the event, matches the 1956 intelligence report from the Lakenheath USAF unit so well, even seeming to avoid the typographical direction-error that the Lakenheath TWX contained, that one can only assume that he was deeply impressed by this whole incident. That, of course, is further indicated by the very fact that he wrote the Colorado group about it in the first place.) His letter (Condon Report, p. 249) adds that "the target made several changes in location, always in a straight line, always at about 600 mph and always from a standing or stationary point to his next stop at constant speed -- no build-up in speed at all -- these changes in location varied from 8 miles to 20 miles in length --no set pattern at any time. Time spent stationary between movements also varied from 3 or 4 minutes to 5 or 6 minutes..." Because his account jibes so well with the basic Bluebook file report in the several particulars in which it can be checked, the foregoing quotation from the letter as reproduced in the Condon Report stands as meaningful indication of the highly unconventional behavior of the unknown aerial target. Even allowing for some recollective uncertainties, the non-com's description of the behavior of the unidentified radar target lies so far beyond any meteorological, astronomical, or electronic explanation as to stand as one challenge to any suggestions that UFO reports are of negligible scientific interest.

The non-com's account indicates that they plotted the discontinuous stop- and-go movements of the target for some tens of minutes before it was decided to scramble RAF interceptors to investigate. That third major aspect of the Lakenheath events must now be considered. (The delay in scrambling interceptors is noteworthy in many Air Force-related UFO incidents of the past 20 years. I believe this reluctance stems from unwillingness to take action lest the decision-maker be accused of taking seriously a phenomenon which the Air Force officially treats as non-existent.)

c. Airborne radar and visual sightings by Venom interceptor. An RAF jet interceptor, a Venom single-seat subsonic aircraft equipped with an air-intercept (AI) nose radar, was scrambled, according to the basic

Bluebook report, from Waterbeach RAF Station, which is located about 6 miles north of Cambridge, and some 20 miles SW of Lakenheath. Precise time of the scramble does not appear in the report to Bluebook, but if we were to try to infer the time from the non-com's recollective account, it would seem to have been somewhere near midnight. Both the non-com's letter and the contemporary intelligence report make clear that Lakenheath radar had one of their unidentified targets on-scope as the Venom came in over the Station from Waterbeach. The TWX to Blue book states: "The aircraft flew over RAF Station Lakenheath and was vectored toward a target on radar 6 miles east of the field. Pilot advised he had a bright white light in sight and would investigate. At thirteen miles west (east?) he reported loss of target and white light."

It deserves emphasis that the foregoing quote clearly indicates that the UFO that the Venom first tried to intercept was being monitored via three distinct physical "sensing channels." It was being recorded by ground radar, by airborne radar, and visually. Many scientists are entirely unaware that Air Force files contain such UFO cases; for this very interesting category has never been stressed in USAF discussions of its UFO records. Note, in fact, the similarity to the 1957 RB-47 case (Case 1 above) in the evidently simultaneous loss of visual and airborne-radar signal here. One wonders if ground radar also lost it simultaneously with the Venom pilot's losing it, but, loss of visual and airborne-radar signal here. One wonders if ground radar also lost it simultaneously with the Venom pilot's losing it, but, as is so typical of AFR200-2 reports, incomplete reporting precludes clarification. Nothing in the Bluebook case-file on this incident suggests that anyone at Bluebook took any trouble to run down that point or the many other residual questions that are so painfully evident here. The file does, however, include a lengthy dispatch from the then-current Blue book officer, Capt. G. T. Gregory, a dispatch that proposes a series of what I must term wholly irrelevant hypotheses about Perseid meteors with "ionized gases in their wake which may be traced on radarscopes", and inversions that "may cause interference between two radar stations some distance apart." Such basically irrelevant remarks are all too typical of Bluebook critique over the years. The file also includes a case- discussion by Dr. J. A. Hynek, Bluebook consultant, who also toys with the idea of possible radar returns from meteor wake ionization. Not only are the radar frequencies here about two orders of magnitude too high to afford even marginal likelihood of meteor-wake returns, but there is absolutely no kinematic similarity between the reported UFO movements and the essentially straight-line hypersonic movement of a meteor, to cite just a few of the strong objections to any serious consideration of meteor hypotheses for the present UFO case. Hynek's memorandum on the case makes some suggestions about the need for upgrading Bluebook operations, and then closes with the remarks that "The Lakenheath report could constitute a source of embarrassment to the Air Force; and should the facts, as so far reported, get into the public domain, it is not necessary to point out what excellent use the several dozen UFO societies and other 'publicity artists' would make of such an incident. It is, therefore, of great importance that further information on the technical aspects of the original observations be obtained, without loss of time from the original observers." That memo of October 17, 1956, is followed in the case-file by Capt. Gregory's November 26, 1956 reply, in which he concludes that "our original analysis of anomalous propagation and astronomical is (sic) more or less correct"; and there the case investigation seemed to end, at the same casually closed level at which hundreds of past UFO cases have been closed out at Bluebook with essentially no real scientific critique. I would say that it is exceedingly unfortunate that "the facts , as so far reported" did not get into the public domain, along with the facts on innumerable other Bluebook case-files that should have long ago startled the scientific community just as much as they startled me when I took the trouble to go to Bluebook and spend a number of days studying those astonishing files.

Returning to the scientifically fascinating account of the Venom pilot's attempt to make an air-intercept on the Lakenheath unidentified object, the original report goes on to note that, after the pilot lost both visual and radar signals, "RATCC vectored him to a target 10 miles east of Lakenheath and pilot advised target was on radar and he was 'locking on.'" Although here we are given no information on the important point of whether he also saw a luminous object, as he got a radar lock-on, we definitely have another instance of at least two-channel detection. The concurrent detection of a single radar target by a ground radar and an airborne radar under conditions such as these, where the target proves to be a highly maneuverable object (see below),

categorically rules out any conventional explanations involving, say, large ground structures and propagation anomalies. That MTI was being used on the ground radar also excludes that, of course.

The next thing that happened was that the Venom suddenly lost radar lock-on as it neared the unknown target. RATCC reported that "as the Venom passed the target on radar, the target began a tail chase of the friendly fighter." RATCC asked the Venom pilot to acknowledge this turn of events and he did, saying "he would try to circle and get behind the target." His attempts were unsuccessful, which the report to Bluebook describes only in the terse comment, "Pilot advised he was unable to 'shake' the target off his tail and requested assistance." The non-com's letter is more detailed and much more emphatic. He first remarks that the UFO's sudden evasive movement into tail position was so swift that he missed it on his own scope, "but it was seen by the other controllers." His letter then goes on to note that the Venom pilot "tried everything -- he climbed, dived, circled, etc., but the UFO acted like it was glued right behind him, always the same distance, very close, but we always had two distinct targets." Here again, note how the basic report is annoyingly incomplete. One is not told whether the pilot knew the UFO was pursuing his Venom by virtue of some tail-radar warning device of type often used on fighters (none is alluded to), or because he could see a luminous object in pursuit. In order for him to "acknowledge" the chase seems to require one or the other detection-mode, yet the report fails to clarify this important point. However, the available information does make quite clear that the pursuit was being observed on ground radar, and the non-com's recollection puts the duration of the pursuit at perhaps 10 minutes before the pilot elected to return to his base. Very significantly, the intelligence report from Lakenheath to Bluebook quotes this first pilot as saying "clearest target I have ever seen on radar", which again eliminates a number of hypotheses, and argues most cogently the scientific significance of the whole episode.

The non-com recalled that, as the first Venom returned to Waterbeach Aerodrome when fuel ran low, the UFO followed him a short distance and then stopped; that important detail is, however, not in the Bluebook report. A second Venom was then scrambled, but, in the short time before a malfunction forced it to return to Waterbeach, no intercepts were accomplished by that second pilot.

7. Discussion:

The Bluebook report material indicates that other radar unknowns were being observed at Lakenheath until about 0330Z. Since the first radar unknowns appeared near Bentwaters at about 2130Z on 8/13/56, while the Lakenheath events terminated near 0330Z on 8/14/56, the total duration of this UFO episode was about six hours. The case includes an impressive number of scientifically provocative features:

1) At least three separate instances occurred in which one ground-radar unit, GCA Bentwaters, tracked some unidentified target for a number of tens of miles across its scope at speeds in excess of Mach 3. Since even today, 12 years later, no nation has disclosed military aircraft capable of flight at such speeds (we may exclude the X-15), and since that speed is much too low to fit any meteoric hypothesis, this first feature (entirely omitted from discussion in the Condon Report) is quite puzzling. However, Air Force UFO files and other sources contain many such instances of nearly hypersonic speeds of radar-tracked UFOs.

2) In one instance, about a dozen low-speed (order of 100 mph) targets moved in loose formation led by three closely-spaced targets, the assemblage yielding consistent returns over a path of about 50 miles, after which they merged into a single large target, remained motionless for some 10-15 minutes, and then moved off-scope. Under the reported wind conditions, not even a highly contrived meteorological explanation invoking anomalous propagation and inversion layer waves would account for this sequence observed at Bentwaters. The Condon Report omits all discussion of items 1) and 2), for reasons that I find difficult to understand.

3) One of the fast-track radar sightings at Bentwaters, at 2255Z, coincided with visual observations of some very-high-speed luminous source seen by both a tower operator on the ground and by a pilot aloft who saw

the light moving in a blur below his aircraft at 4000 ft altitude. The radar-derived speed "as given as 2000-4000 mph. Again, meteors won't fit such speeds and altitudes, and we may exclude aircraft for several evident reasons, including absence of any thundering sonic boom that would surely have been reported if any near hypothetical secret 1956-vintage hypersonic device were flying over Bentwaters at less than 4000 ft that night.

4) Several ground observers at Lakenheath saw luminous objects exhibiting non-ballistic motions, including dead stops and sharp course reversals.

5) In one instance, two luminous white objects merged into a single object, as seen from the ground at Lakenheath. This wholly unmeteoric and unaeronautical phenomenon is actually a not-uncommon feature of UFO reports during the last two decades. For example, radar-tracked merging of two targets that veered together sharply before joining up was reported over Kincheloe AFB, Michigan, in a UFO report that also appears in the Condon Report (p. 164), quite unreasonably attributed therein to "anomalous propagation."

6) Two separate ground radars at Lakenheath, having rather different radar parameters, were concurrently observing movements of one or more unknown targets over an extended period of time. Seemingly stationary hovering modes were repeatedly observed, and this despite use of MTI. Seemingly "instantaneous" accelerations from rest to speeds of order of Mach 1 were repeatedly observed. Such motions cannot readily be explained in terms of any known aircraft flying then or now, and also fail to fit known electronic or propagation anomalies. The Bluebook report gives the impression (somewhat ambiguously, however) that some of these two-radar observations were coincident with ground-visual observations.

7) In at least one instance, the Bluebook report makes clear that an unidentified luminous target was seen visually from the air by the pilot of an interceptor while getting simultaneous radar returns from the unknown with his nose radar concurrent with ground-radar detection of the same unknown. This is scientifically highly significant, for it entails three separate detection-channels all recording the unknown object.

8) In at least one instance, there was simultaneous radar disappearance and visual disappearance of the UFO. This is akin to similar events in other known UFO cases, yet is not easily explained in terms of conventional phenomena.

9) Attempts of the interceptor to close on one target seen both on ground radar and on the interceptor's nose radar, led to a puzzling rapid interchange of roles as the unknown object moved into tail-position behind the interceptor. While under continuing radar observation from the ground, with both aircraft and unidentified object clearly displayed on the Lakenheath ground radars, the pilot of the interceptor tried unsuccessfully to break the tail chase over a time of some minutes. No ghost-return or multiple-scatter hypothesis can explain such an event.

I believe that the cited sequence of extremely baffling events, involving so many observers and so many distinct observing channels, and exhibiting such unconventional features, should have led to the most intensive Air Force inquiries. But I would have to say precisely the same about dozens of other inexplicable Air Force-related UFO incidents reported to Bluebook since 1947. What the above illustrative case shows all too well is that highly unusual events have been occurring under circumstances where any organization with even passing scientific curiosity should have responded vigorously, yet the Air Force UFO program has repeatedly exhibited just as little response as I have noted in the above 1956 Lakenheath incident. The Air Force UFO program, contrary to the impression held by most scientists here and abroad, has been an exceedingly superficial and generally quite incompetent program. Repeated suggestions from Air Force press offices, to the effect that "the best scientific talents available to the U.S. Air Force" have been brought to bear on the UFO question are so far from the truth as to be almost laughable, yet those suggestions have served to mislead the scientific community, here and abroad, into thinking that careful investigations were yielding solid conclusions to the effect that the UFO problem was a nonsense problem. The Air Force has given us all the

impression that its UFO reports involved only misidentified phenomena of conventional sorts. That, I submit, is far from correct, and the Air Force has not responsibly discharged its obligations to the public in conveying so gross a misimpression for twenty years. I charge incompetence, not conspiracy, let me stress.

The Condon Report, although disposed to suspicion that perhaps some sort of anomalous radar propagation might be involved (I record here my objection that the Condon Report exhibits repeated instances of misunderstanding of the limits of anomalous propagation effects), does concede that Lakenheath is an unexplained case. Indeed, the Report ends its discussion with the quite curious admission that, in the Lakenheath episode, "...the probability that at least one genuine UFO was involved appears to be fairly high."

One could easily become enmeshed in a semantic dispute over the meaning of the phrase, "one genuine UFO", so I shall simply assert that my own position is that the Lakenheath case exemplifies a disturbingly large group of UFO reports in which the apparent degree of scientific inexplicability is so great that, instead of being ignored and laughed at, those cases should all along since 1947 have been drawing the attention of a large body of the world's best scientists. Had the latter occurred, we might now have some answers, some clues to the real nature of the UFO phenomena. But 22 years of inadequate UFO investigations have kept this stunning scientific problem out of sight and under a very broad rug called Project Bluebook, whose final termination on December 18, 1969 ought to mark the end of an era and the start of a new one relative to the UFO problem.

More specifically, with cases like Lakenheath and the 1957 RB-47 case and many others equally puzzling that are to be found within the Condon Report, I contest Condon's principal conclusion "that further extensive study of UFOs probably cannot be justified in the expectation that science will be advanced thereby." And I contest the endorsement of such a conclusion by a panel of the National Academy of Sciences, an endorsement that appears to be based upon essentially zero independent scientific cross-checking of case material in the Report. Finally, I question the judgment of those Air Force scientific offices and agencies that have accepted so weak a report. The Lakenheath case is just one example of the basis upon which I rest those objections. I am prepared to discuss many more examples.

8. The Extraterrestrial Hypothesis:

In this Lakenheath UFO episode, we have evidence of some phenomena defying ready explanation in terms of present-day science and technology, some phenomena that include enough suggestion of intelligent control (tail-chase incident here), or some broadly cybernetic equivalent thereof, that it is difficult for me to see any reasonable alternative to the hypothesis that something in the nature of extraterrestrial devices engaged-in something in the nature of surveillance lies at the heart of the UFO problem. That is the hypothesis that my own study of the UFO problem leads me to regard as most probable in terms of my present information. This is, like all scientific hypotheses, a working hypothesis to be accepted or rejected only on the basis of continuing investigation. Present evidence surely does not amount to incontrovertible proof of the extraterrestrial hypothesis. What I find scientifically dismaying is that, while a large body of UFO evidence now seems to point in no other direction than the extraterrestrial hypothesis, the profoundly important implications of that possibility are going unconsidered by the scientific community because this entire problem has been imputed to be little more than a nonsense matter unworthy of serious scientific attention. Those overtones have been generated almost entirely by scientists and others who have done essentially no real investigation of the problem-area in which they express such strong opinions. Science is not supposed to proceed in that manner, and this AAAS Symposium should see an end to such approaches to the UFO problem.

Put more briefly, doesn't a UFO case like Lakenheath warrant more than a mere shrug of the shoulders from science?

Case 3. Haneda Air Force Base, Japan, August 5-6, 1952.

Brief summary: USAF tower operators at Haneda AFB observed an unusually bright bluish-white light to their NE, alerted the GCI radar unit at Shiroy, which then called for a scramble of an F94 interceptor after getting radar returns in same general area. GCI ground radar vectored the F94 to an orbiting unknown target, which the F94 picked up on its airborne radar. The target then accelerated out of the F94's radar range after 90 seconds of pursuit that was followed also on the Shiroy GCI radar.

1. Introduction:

The visual and radar sightings at Haneda AFB, Japan, on August 5-6, 1952, represent an example of a long-puzzling case, still carried as an unidentified case by Project Bluebook, at my latest check, and chosen for analysis in the Condon Report. In the latter, is putatively explained in terms of a combination of diffraction and mirage distortion of the star Capella, as far as the visual parts are concerned, while the radar portions are attributed to anomalous propagation. I find very serious difficulties with those "explanations" and regard them as typical of a number of rather casually advanced explanations of long-standing UFO cases that appear in the Condon Report. Because this case has been discussed in such books as those of Ruppelt, Keyhoe, and Hall, it is of particular interest to carefully examine case-details on it and then to examine the basis of the Condon Report's explanation of it, as example of how the Condon Report disposed of old "classic cases."

Haneda AFB, active during the Korean War, lay about midway between central Tokyo and central Yokohama, adjacent to Tokyo International Airport. The 1952 UFO incident began with visual sightings of a brilliant object in the northeastern sky, as seen by two control tower operators going on duty at 2330 LST (all times hereafter will be LST). It will serve brevity to introduce some coded name designations for these men and for several officers involved, since neither the Condon Report, nor my copies of the original Bluebook case-file show names (excised from latter copies in accordance with Bluebook practice on non-release of witness names in UFO cases):

Coded Designation Identification

Airman A One of two Haneda tower operators who first sighted light; rank was A/3c.

Airman B Second Haneda tower operator to first sight light; A/1c.

Lt. A Controller on duty at Shiroy GCI unit up to 2400, August 5; 1st Lt.

Lt. B Controller at Shiroy after 0000, August 6; 1st Lt.

Lt. P Pilot of scrambled F-94; 1st Lt.

Lt. R Radar officer in F-94; 1st Lt.

Shiroy GCI Station, manned by the 528th AC&W (Aircraft Control and Warning) Group, lay approximately 20 miles NE of Haneda (specifically at 35 deg. 49' N, 140 deg. 2' E) and had a CPS-1 10-cm search radar plus a CPS 10-cm height-finding radar. Two other USAF facilities figure in the incident, Tachikawa AFB, lying just over 20 miles WNW of Haneda, and Johnson AFB, almost 30 miles NW of Haneda. The main radar incidents center over the north extremity of Tokyo Bay, roughly midway from central Tokyo to Chiba across the Bay.

The Bluebook case-file on this incident contains 25 pages, and since the incident predates promulgation of AFR200-2, the strictures on time-reporting, etc., are not here so bothersome as in the Lakenheath case of 1956, discussed above. Nevertheless, the same kind of disturbing internal inconsistencies are present here as one finds in most Bluebook case reports; in particular, there is a bothersome variation in times given for specific events in different portions of the case-file. One of these, stressed in the Condon Report, will be

discussed explicitly below; but for the rest, I shall use those times which appear to yield the greatest over-all internal consistency. This will introduce no serious errors, since the uncertainties are mostly only 1 or 2 minutes and, except for the cited instance, do not alter any important implications regardless of which cited time is used. The over-all duration of the visual and radar sightings is about 50 minutes. The items of main interest occurred between 2330 and 0020, approximately.

Although this case involves both visual and radar observations of unidentified objects, careful examination does not support the view that the same object was ever assuredly seen visually and on radar at the same time, with the possible exception of the very first radar detection just after 2330. Thus it is not a "radar-visual" case, in the more significant sense of concurrent two-channel observations of an unknown object. This point will be discussed further in Section 5.

2. Visual Observations:

a. First visual detection. At 2330, Airmen A and B, while walking across the ramp at Haneda AFB to go on the midnight shift at the airfield control tower, noticed an "exceptionally bright light" in their northeastern sky. They went immediately to the control tower to alert two other on-duty controllers to it and to examine it more carefully with the aid of the 7x50 binoculars available in the tower. The Bluebook case-file notes that the two controllers already on tower-duty "had not previously noticed it because the operating load had been keeping their attention elsewhere. "

b. Independent visual detection at Tachikawa AFB. About ten minutes later, according to the August 12, 1952, Air Intelligence Information Report (IR-35-52) in the Bluebook case-file; Haneda was queried about an unusually bright light by controllers at Tachikawa AFB, 21 miles to their WNW. IR-35-52 states: "The control tower at Tachikawa Air Force Base called Haneda tower at approximately 2350 to bring their attention to a brilliant white light over Tokyo Bay. The tower replied that it had been in view for some time and that it was being checked."

This feature of the report is significant in two respects: 1) It indicates that the luminous source was of sufficiently unusual brilliance to cause two separate groups of Air Force controllers at two airfields to respond independently and to take alert-actions; and 2) More significantly, the fact that the Tachikawa controllers saw the source in a direction "over Tokyo Bay" implies a line-of-sight distinctly south of east. From Tachikawa, even the north end of the Bay lies to the ESE. Thus the intersection of the two lines of sight fell somewhere in the northern half of the Bay, it would appear. As will be seen later, this is where the most significant parts of the radar tracking occurred subsequently.

c. Direction, intensity, and configuration of the luminous source. IR-35-52 contains a signed statement by Airman A, a sketch of the way the luminous source looked through 7-power binoculars, and summary comments by Capt. Charles J. Malven, the FEAF intelligence officer preparing the report for transmission to Bluebook.

Airman A's own statement gives the bearing of the source as NNE; Malven summary specifies only NE. Presumably the witness' statement is the more reliable, and it also seems to be given a greater degree of precision, whence a line-of-sight azimuth somewhere in the range of 25 to 35 deg. east of north appears to be involved in the Haneda sightings. By contrast, the Tachikawa sighting-azimuth was in excess of 90 deg. from north, and probably beyond 100 deg., considering the geography involved, a point I shall return to later.

Several different items in the report indicate the high intensity of the source. Airman A's signed statement refers to it as "the intense bright light over the Bay." The annotated sketch speaks of "constant brilliance across the entire area" of the (extended) source, and remarks on "the blinding effect from the brilliant light." Malven's summary even points out that "Observers stated that their eyes would fatigue rapidly when they attempted to concentrate their vision on the object," and elsewhere speaks of "the brilliant blue-white light of the object." Most of these indications of brightness are omitted from the Condon Report, yet bear on the

Capella hypothesis in terms of which that Report seeks to dispose of these visual sightings.

Airman A's filed statement includes the remark that "I know it wasn't a star, weather balloon or venus, because I compared it with all three." This calls for two comments. First, Venus is referred to elsewhere in the case-file, but this is certainly a matter of confusion, inasmuch as Venus had set that night before about 2000 LST. Since elsewhere in the report reference is made to Venus lying in the East, and since the only noticeable celestial object in that sector at that time would have been Jupiter, I would infer that where "Venus" is cited in the case-file, one should read "Jupiter." Jupiter would have risen near 2300, almost due east, with apparent magnitude -2.0. Thus Airman A's assertion that the object was brighter than "Venus" may probably be taken to imply something of the order of magnitude -3.0 or brighter. Indeed, since it is most unlikely that any observer would speak of a -3.0 magnitude source as "blinding" or "fatiguing" to look at, I would suggest that the actual luminosity, at its periods of peak value (see below) must have exceeded even magnitude -3 by a substantial margin.

Airman A's allusion to the intensity as compared with a "weather balloon" refers to the comparisons (elaborated below) with the light suspended from a pilot balloon released near the tower at 2400 that night and observed by the tower controllers to scale the size and brightness. This is a very fortunate scaling comparison, because the small battery-operated lights long used in meteorological practice have a known luminosity of about 1.5 candle. Since a 1-candle source at 1 kilometer yields apparent magnitude 0.8, inverse-square scaling for the here known balloon distance of 2000 feet (see below) implies an apparent magnitude of about -0.5 for the balloon-light as viewed at time of launch. Capt. Malven's summary states, in discussing this quite helpful comparison, "The balloon's light was described as extremely dim and yellow, when compared to the brilliant blue white light of the object." Here again, I believe one can safely infer an apparent luminosity of the object well beyond Jupiter's -2.0. Thus, we have here a number of compatible indications of apparent brightness well beyond that of any star, which will later be seen to contradict explanations proposed in the Condon Report for the visual portions of the Haneda sightings.

Of further interest relative to any stellar source hypothesis are the descriptions of the configuration of the object as seen with 7-power binoculars from the Haneda tower, and its approximate angular diameter. Fortunately, the latter seems to have been adjudged in direct comparison with an object of determinate angular subtense that was in view in the middle of the roughly 50-minute sighting. At 2400, a small weather balloon was released from a point at a known distance of 2000 ft from the control tower. Its diameter at release was approximately 24 inches. (IR-35-52 refers to it as a "ceiling balloon", but the cloud-cover data contained therein is such that no ceiling balloon would have been called for. Furthermore, the specified balloon mass, 30 grams, and diameter, 2 ft, are precisely those of a standard pilot balloon for upper-wind measurement. And finally, the time [2400 LST = 1500Z] was the standard time for a pilot balloon run, back in that period.) A balloon of 2-ft diameter at 2000-ft range would subtend 1 milliradian, or just over 3 minutes of arc, and this was used by the tower observers to scale the apparent angular subtense of the luminous source. As IR-35-52 puts it: "Three of the operators indicated the size of the light, when closest to the tower, was approximately the same as the small ceiling balloons (30 grams, appearing 24 inches in diameter) when launched from the weather station, located at about 2000 ft from the tower. This would make the size of the central light about 50 ft in diameter, when at the 10 miles distance tracked by GCI... A lighted weather balloon was launched at 2400 hours..." Thus, it would appear that an apparent angular subtense close to 3 minutes of arc is a reasonably reliable estimate for the light as seen by naked eye from Haneda. This is almost twice the average resolution-limit of the human eye, quite large enough to match the reported impressions that it had discernible extent, i.e., was not merely a point source.

But the latter is very much more clearly spelled out, in any event, for IR-35-52 gives a fairly detailed description of the object's appearance through 7-power binoculars. It is to be noted that, if the naked-eye diameter were about 3 minutes, its apparent subtense when viewed through 7X-binoculars would be about 20 minutes, or two-thirds the naked-eye angular diameter of the full moon -- quite large enough to permit recognition of the finer details cited in IR-35-52, as follows: "The light was described as circular in shape,

with brilliance appearing to be constant across the face. The light appeared to be a portion of a large round dark shape which was about four times the diameter of the light. When the object was close enough for details to be seen, a smaller, less brilliant light could be seen at the lower left hand edge, with two or three more dim lights running in a curved line along the rest of the lower edge of the dark shape. Only the lower portion of the darker shape could be determined, due to the lighter sky which was believed to have blended with the upper side of the object. No rotation was noticed. No sound was heard."

Keeping in mind that those details are, in effect, described for an image corresponding in apparent angular size to over half a lunar diameter, the detail is by no means beyond the undiscernible limit. The sketch included with IR-35-52 matches the foregoing description, indicating a central disc of "constant brilliance across entire area (not due to a point source of light)", an annular dark area of overall diameter 3-4 times that of the central luminary, and having four distinct lights on the lower periphery, "light at lower left, small and fairly bright, other lights dimmer and possibly smaller." Finally, supportive comment thereon is contained in the signed statement of Airman A. He comments: "After we got in the tower I started looking at it with binoculars, which made the object much clearer. Around the bright white light in the middle, there was a darker object which stood out against the sky, having little white lights along the outer edge, and a glare around the whole thing."

All of these configurational details, like the indications of a quite un- starlike brilliance, will be seen below to be almost entirely unexplainable on the Capella hypothesis with which the Condon Report seeks to settle the Haneda visual sightings. Further questions ultimately arise from examination of reported apparent motions of the luminous source, which will be considered next.

d. Reported descriptions of apparent motions of the luminous source. Here we meet the single most important ambiguity in the Haneda case-file, though the weight of the evidence indicates that the luminous object exhibited definite movements. The ambiguity arises chiefly from the way Capt. Malven summarized the matter in his IR-35-52 report a week after the incident; "The object faded twice to the East, then returned. Observers were uncertain whether disappearance was due to a dimming of the lights, rotation of object, or to the object moving away at terrific speed, since at times of fading the object was difficult to follow closely, except as a small light, Observer C did agree that when close, the object did appear

In contrast to the above form in which Malven summarized the reported motions, the way Airman A described them in his own statement seems to refer to distinct motions, including transverse components: "I watched it disappear twice through the glasses. It seemed to travel to the East and gaining altitude at a very fast speed, much faster than any jet. Every time it disappeared it returned again, except for the last time when the jets were around. It seemed to know they were there. As for an estimate of the size of the object -- I couldn't even guess." Recalling that elsewhere in that same signed statement this tower controller had given the observed direction to the object as NNE, his specification that the object "seemed to travel to the East" seems quite clearly to imply a non radial motion, since, if only an impression of the latter were involved, one would presume he would have spoken of it in some such terms as "climbing out rapidly to the NNE". Since greater weight is presumably to be placed on direct-witness testimony than on another's summary thereof, it appears necessary to assume that not mere radial recession but also transverse components of recession, upwards and towards the East, were observed.

That the luminous source varied substantially in angular subtense is made very clear at several points in the case-file: One passage already cited discusses the "size of the light, when closest to the tower...", while, by contrast, another says that: "At the greatest distance, the size of the light appeared slightly larger than Venus, approximately due East of Haneda, and slightly brighter." (For "Venus" read "Jupiter" as noted above. Jupiter was then near quadrature with angular diameter of around 40 seconds of arc. Since the naked eye is a poor judge of comparative angular diameters that far below the resolution limit, little more can safely be read into that statement than the conclusion that the object's luminous disc diminished quite noticeably and its apparent brightness fell to a level comparable to or a bit greater than Jupiter's when at greatest perceived distance. By

virtue of the latter, it should be noted, one has another basis for concluding that when at peak brilliance it must have been considerably brighter than Jupiter's -2.0, a conclusion already reached by other arguments above.

In addition to exhibiting what seems to imply recession, eastward motion, and climb to disappearance, the source also disappeared for at least one other period far too long to be attributed to any scintillation or other such meteorological optical effect: "When we were about half way across the ramp (Airman A stated), it disappeared for the first time and returned to approximately the same spot about 15 seconds later." There were scattered clouds over Haneda at around 15-16,000 ft, and a very few isolated clouds lower down, yet it was full moon that night and, if patches of clouds had drifted very near the controllers' line-of-sight to the object, they could be expected to have seen the clouds. (The upper deck was evidently thin, for Capt. Malven notes in his report that "The F94 crew reported exceptional visibility and stated that the upper cloud layer did not appreciably affect the brilliancy of the moonlight.") A thin cloud interposed between observer and a distant luminous source would yield an impression of dimming and enhanced effective angular diameter, not dimming and reduced apparent size, as reported here. I believe the described "disappearances" cannot, in view of these several considerations, reasonably be attributed to cloud effects.

I have now summarized the essential features of the Haneda report dealing with just the visual observations of some bright luminous source that initiated the alert and that led to the ground-radar and air borne-radar observations yet to be described. Before turning to those, which comprise, in fact, the more significant portion of the over-all sighting, it will be best to turn next to a critique of the Blue book and the Condon Report attempts to give an explanation of the visual portions of the sighting.

3. Bluebook Critique of the Visual Sightings:

In IR-35-52. Capt, Malven offers only one hypothesis, and that in only passing manner: He speculates briefly on whether "reflections off the water (of the Bay, I presume) were...sufficient to form secondary reflections off the lower clouds," and by the latter he refers to "isolated patches of thin clouds reported by the F-94 crew as being at approximately 4000 feet..." He adds that "these clouds were not reported to be visible by the control tower personnel," which, in view of the 60-mile visibility cited elsewhere in the case-file and in view of the full moon then near the local meridian, suggests that those lower clouds must have been exceedingly widely scattered to escape detection by the controllers.

What Malven seems to offer there, as an hypothesis for the observed visual source, is cloud-reflection of moonlight -- and in manner all too typical of many other curious physical explanations one finds scattered through Bluebook case-files, he brings in a consideration that reveals lack of appreciation of what is central to the issue. If he wants to talk about cloud-reflected moonlight, why render a poor argument even weaker by invoking not direct moon light but moonlight secondarily reflected off the surface of Tokyo Bay? Without even considering further that odd twist in his tentative hypothesis, it is sufficient to note that even direct moonlight striking a patch of cloud is not "reflected in any ordinary sense of that term. It is scattered from the cloud droplets and thereby serves not to create any image of a discrete light source of blinding intensity that fatigues observers' eyes and does the other things reported by the Haneda observers, but rather serves merely to palely illuminate a passing patch of cloud material. A very poor hypothesis.

Malven drops that hypothesis without putting any real stress on it (with judgment that is not always found where equally absurd "explanations" have been advanced in innumerable other Bluebook case-files by reporting officers or by Bluebook staff members). He does add that there was some thunderstorm activity reported that night off to the northwest of Tokyo, but mentions that there was no reported electrical activity therein. Since the direction is opposite to the line of sight and since the reported visual phenomena bear no relation to lightning effects, this carried the matter no further, and the report drops that point there.

Finally, Malven mentions very casually an idea that I have encountered repeatedly in Bluebook files yet

nowhere else in my studies of atmospheric physics, namely, "reflections off ionized portions of the atmosphere." He states: "Although many sightings might be attributed to visual and electrical reflections off ionized areas in the atmosphere, the near-perfect visibility on the night of the sighting, together with the circular orbit of the object would tend to disprove this theory." Evidently he rejects the "ionized areas" hypothesis on the ground that presence of such areas is probably ruled out in view of the unusually good visibility reported that night. I trust that, for most readers of this discussion, I would only be belaboring the obvious to remark that Bluebook mythology about radar and visual "reflections" off "ionized regions" in the clear atmosphere (which mythology I have recently managed to trace back even to pre-1950 Air Force documents on UFO reports) has no known basis in fact, but is just one more of the all too numerous measures of how little scientific critique the Air Force has managed to bring to bear on its UFO problems over the years.

Although the final Bluebook evaluation of this entire case, including the visual portions, was and is "Unidentified", indicating that none of the above was regarded as an adequate explanation of even the visual features of the report, one cannot overlook extremely serious deficiencies in the basic reporting and the interrogation and follow-up here. This incident occurred in that period which my own studies lead me to describe as sort of a highwater mark for Project Bluebook. Capt. Edward J. Ruppelt was then Bluebook Officer at Wright-Patterson AFB, and both he and his superiors were then taking the UFO problem more seriously than it was taken by USAF at any other time in the past 22 years. Neither before nor after 1952-3 were there as many efforts made to assemble case-information, to go out and actually check in the field on sightings, etc. Yet it should be uncomfortably apparent already at this point in this discussion of the Haneda case that quite basic points were not run to ground and pinned down. Ruppelt, in his 1956 book, speaks of this Haneda case as if it were regarded as one of the most completely reported cases they'd received as of mid-1952. He mentioned that his office sent a query to FEAF offices about a few points of confusion, and that the replies came back with impressive promptness, etc. If one needed some specific clue to the regrettably low scientific level of the operation of Bluebook even during this period of comparatively energetic case-investigation, one can find it in study of the Haneda report. Even so simple a matter as checking whether Venus was actually in the East was obviously left undone; and numerous cross-questions and followup queries on motions, angles, times, etc., not even thought of. That, I stress, is what any scientist who studies the Bluebook files as I have done will find all through 22 years of Air Force handling of the UFO problem. Incompetence and superficiality -- even at the 1952 highwater mark under Ruppelt's relatively vigorous! ♦

And in the final paragraph discussing this case, the Condon Report merely rounds it off to: "In summary, it appears that the most probable causes of this UFO report are an optical effect on a bright light source that produced the visual sighting..." (and goes on to a remark on the radar portions we have yet to examine here).

There are some very serious difficulties with the more specific parts of the suggested explanation, and the vagueness of the other parts is sufficiently self-evident to need little comment.

First, nothing in the literature of meteorological optics discusses any diffraction-produced corona with a dark annular space extending out to three or four diameters of the central luminary, such as is postulated in the above Condon Report explanation. The radial intensity pattern of a corona may be roughly described as a damped oscillatory radial variation of luminosity, with zero intensity minima (for the simple case of a monochromatic luminary) at roughly equal intervals, and no broad light-free annulus comparable to that described in detail by the Haneda controllers. Thus, lack of understanding of the nature of corona is revealed at the outset in attempting to fit the Haneda observations to such a phenomenon.

Second, droplets certainly do not have to be "spaced at regular intervals" to yield a corona, and Minnaert's book makes no such suggestion, another measure of misunderstanding of the meteorological optics here concerned. Nor is there any physical mechanism operating in clouds capable of yielding any such regular

droplet spacing. Both Minnaert and cloud physics are misunderstood in that passage.

Third, one quickly finds, by some trial calculations, using the familiar optical relation (Exner equation) for the radial positions of the minima of the classical corona pattern, that the cited drop diameter of 0.2 mm = 200 microns was obtained in the Condon Report by back-calculating from a tacit requirement that the first-order minimum lay close to 3 milliradians, for these are the values that satisfy the Exner equation for an assumed wavelength of about 0.5 microns for visible light. This discloses even more thorough misunderstanding of corona optics, for that first-order minimum marks not some outer edge of a broad dark annulus as described and sketched by the Haneda tower operators, but the outer edge of the innermost annulus of high intensity of diffracted light. This clearly identifies basic misunderstanding of the matters at hand.

Fourth, the just-cited computation yielded a droplet diameter of 200 microns, which is so large as to be found only in drizzling or raining clouds and never in thin scattered clouds of the sort here reported, clouds that scarcely attenuated the full moon's light. That is, the suggestion that "patches of fog or mist" collected under an hypothesized inversion could grow droplets of that large size is meteorologically out of the question. If isolated patches of clouds interposed themselves on an observer's line of sight to some distant luminary, under conditions of the sort prevailing at Haneda that night, drop diameters down in the range of 10-20 microns would be the largest one could expect, and the corona-size would be some 10 to 20 times greater than the 3 milliradians which was plugged into the Exner equation in the above computation.

Fifth, the vague suggestion that "Raman brightening" or other "interference effects associated with propagation within and near the top of an inversion" is involved here makes the same serious error that is made in attempted optical explanations of other cases in the Condon Report. Here we are asked to consider that light from Capella, whose altitude was about 8 deg. above the NE horizon (a value that I confirm) near the time of the Haneda observations, was subjected to Raman brightening or its equivalent; yet one of the strict requirements of all such interference effects is that the ray paths impinge on the inversion surface at grazing angles of incidence of only a small fraction of a degree. No ground observer viewing Capella at 8 deg. elevation angle could possibly see anything like Raman brightening, for the pertinent angular limits would be exceeded by one or two orders of magnitude. Added to this measure of misunderstanding of the optics of such interference phenomena in this attempted explanation is the further difficulty that, for any such situation as is hypothesized in the Condon Report explanation, the observer's eye must be physically located at or directly under the index-discontinuity, which would here mean up in the air at the altitude of the hypothesized inversion. But all of the Haneda observations were made from the ground level. Negation of Raman brightening leaves one more serious gap in the Capella hypothesis, since its magnitude of 0.2 lies at a brightness level well below that of Jupiter, yet the Haneda observers seem to have been comparing the object's luminosity to Jupiter's and finding it far brighter, not dimmer.

Sixth, the Condon Report mentions the independent sighting from Tachikawa AFB, but fails to bring out that the line of sight from that observing site (luminary described as lying over Tokyo Bay, as seen from Tachikawa) pointed more than 45 deg. away from Capella, a circumstance fatal to fitting the Capella hypothesis to both sightings. Jupiter lay due East, not "over Tokyo Bay" from Tachikawa, and it had been rising in the eastern sky for many days, so it is, in any event, unlikely to have suddenly triggered an independent response at Tachikawa that night. And, conversely, the area intersection of the reported lines of sight from Haneda and Tachikawa falls in just the North Bay area where Shiroi GCI first got radar returns and where all the subsequent radar activity was localized.

Seventh, nothing in the proffered explanations in the Condon Report confronts the reported movements and disappearances of the luminous object that are described in the Bluebook case-file on Haneda. If, for the several reasons offered above, we conclude that not only apparent radial motions, but also lateral and climbing motions were observed, neither diffraction nor Raman effects can conceivably fit them.

Eighth, the over-all configuration as seen through 7X binoculars, particularly with four smaller lights

perceived on the lower edge of the broad dark annulus, is not in any sense explained by the ideas qualitatively advanced.

Ninth, the Condon Report puts emphasis on the point that, whereas Haneda and Tachikawa observers saw the light, airmen at the Shiroy GCI site went outside and looked in vain for the light when the plotted radar position showed one or more targets to their south or south-southeast. This is correct. But we are quite familiar with both highly directional and semi-directional light sources on our own technological devices, so the failure to detect a light from the Shiroy side does not very greatly strengthen the hypothesis that Capella was the luminary in the Haneda visual sightings. The same can be said for lack of visual observations from the F-94, (which got only radar returns as it closed on its target).

I believe that it is necessary to conclude that the "explanation" proposed in the Condon Report for the visual portions of the Haneda case are almost wholly unacceptable. And I remark that my analysis of many other explanations in the Condon Report finds them to be about equally weak in their level of scientific argumentation. We were supposed to get in the Condon Report a level of critique distinctly better than that which had come from Bluebook for many years; but much of the critique in that Report is little less tendentious and ill-based than that which is so dismaying in 22 years of Air Force discussions of UFO cases. The above stands as only one illustration of the point I make there; many more could be cited.

Next we must examine the radar aspects of the 8/5-6/52 Haneda case.

5. Radar Observations:

Shortly after the initial visual sighting at Haneda, the tower controllers alerted the Shiroy GCI radar unit (located about 15 miles NE of central Tokyo), asking them to look for a target somewhere NE of Haneda at an altitude which they estimated (obviously on weak grounds) to be somewhere between 1500 and 5000 feet, both those figures appearing in the Bluebook case-file. Both a CPS-1 search radar and a CPS-4 height-finder radar were available at Shiroy, but only the first of those picked up the target, ground clutter interference precluding useful CPS-4 returns. The CPS-1 radar was a 10-cm, 2-beam set with peak power of 1 megawatt, PRF of 400/sec, antenna tilt 3 deg., and scan-rate operated that night at 4 rpm. I find no indication that it was equipped with MTI, but this point is not certain.

It may help to keep the main sequence of events in better time order if I first put down the principal events that bear on the radar sightings from ground and air, and the times at which these events occurred. In some instances a 1-2 minute range of times will be given because the case-file contains more than a single time for that event as described in separate sections of the report. I indicate 0015-16 LST (all times still LST) as the time of first airborne radar contact by the F-94, and discuss that matter in more detail later, since the Condon Report suggests a quite different time.

Time (LST) Event

2330 Tower controllers at Haneda see bright light to NE, call Shiroy GCI within a few minutes.

2330-45 Lt. A, Shiroy radar controller on evening watch, looks for returns, finds 3-4 stationary blips to NE of Haneda on low beam of CPS-1.

2345 Lt. B comes on duty for midwatch at Shiroy; he and Lt. A discuss possible interceptor scramble.

2355 Lt. A calls Johnson AFB, asks for F-94 scramble. Fuel system trouble causes delay of 5-10 min.

0001 Lt. B has unknown in right orbit at varying speeds over north Tokyo Bay, 8 miles NE of Haneda. Loses contact again.

0003-04 F-94 airborne out of Johnson AFB, Lt. P as pilot, Lt. R, radarman.

0009-10 Shiroi alerts F-94 to airborne target to its starboard as it heads down Tokyo Bay, and Lt. P visually identifies target as C-54 in pattern to land at Haneda. Lt. B instructs Lt. P to begin search over north Bay area at flight altitude of 5000 ft.

0012 Shiroi regains CPS-1 contact on unknown target in right orbit over same general area seen before, target splits into three separate targets, and Lt. B vectors F-94 toward strongest of three returns.

0015-16 F-94 gets airborne radar contact on moving target at range and bearing close to vector information, has to do hard starboard turn to keep onscope as target moves with acceleration across scope.

0017-18 After 90 seconds pursuit, with no lock-on achieved, target moves offscope at high speed; Shiroi GCI tracks both unknown and F-94 into its ground clutter, where both are then lost in clutter.

0033 Shiroi releases F-94 from scramble-search

0040 F-94 visually spots another C-54, over Johnson.

0120 F-94 lands back at Johnson.

Thus the period 2330 on 8/5 through about 0018 on 8/6 is of present interest: Next, events in that period till be examined in closer detail.

a. Initial attempts at radar detection from Shiroi GCI. When, at about 2335 or so, Haneda requested Shiroi to search the area of the bay to the NE of Haneda (SSW from Shiroi, roughly), Lt. A, then duty controller at Shiroi, found his CPS-4 giving too much ground clutter to be useful for the relatively low estimated heights Haneda had suggested. Those heights are indicated as 1500-2000 ft in one portion of the case- file, though Airman A elsewhere gave 5000 ft as his impression of the height. Clearly, lack of knowledge of size and slant ranges precluded any exact estimates from Haneda, but they offered the above indicated impressions.

Trying both low and high beams on the CPS-1 search radar, Lt. A did detect three or four blips "at a position 050 deg. bearing from Haneda, as reported by the tower, but no definite movement could be ascertained..." The report gives no information on the range from Shiroi, nor inferred altitude of those several blips, only the first of a substantial number of missing items of quite essential information that were not followed up in any Bluebook inquiries, as far as the case-file shows. No indication of the spacing of the several targets is given either, so it is difficult to decide whether to consider the above as an instance of "radar visual" concurrency or not. One summary discussion in the Bluebook case-file so construes it: "The radar was directed onto the target by visual observations from the tower. So it can safely be assumed that both visual and radar contacts involved the same object." By contrast, the Condon Report takes the position that there were no radar observations that ever matched the visual observations. The latter view seems more justified than the former, although the issue is basically unresolvable. One visual target won't, in any event, match 3-4 radar targets, unless we invoke the point that later on the main radar target split up into three separate radar targets, and assume that at 2335, 3-4 unknown objects were airborne and motionless, with only one of these luminous and visually detectable from Haneda. That is conceivable but involves too strained assumptions to take very seriously; so I conclude that, even in this opening radar search, there was not obvious correspondence between visual and radar unknowns. As we shall see, later on there was definitely not correspondence, and also the F-94 crew never spotted a visual target. Thus, Haneda cannot be viewed as a case involving the kind of "radar-visual" concurrency which does characterize many other important cases. Nonetheless, both the visual and the radar features, considered separately, are sufficiently unusual in the Haneda case to regard them as mutually supporting the view that inexplicable events were seen and tracked there that night.

One may ask why a radar-detected object was not seen visually, and why a luminous object was not detected

on search radar; and no fully satisfactory answer lies at hand for either question. It can only be noted that there are many other such cases in Bluebook files and that these questions stand as part of the substantial scientific puzzle that centers around the UFO phenomena. We know that light-sources can be turned off, and we do know that ECM techniques can fool radars to a certain extent. Thus, we might do well to maintain open minds when we come to these questions that are so numerous in UFO case analysis.

b. F-94 scramble. When Lt. B came on duty at 2345, he was soon able, according to Capt. Malven's summary in IR-35-52, "to make radar contact on the 50-mile high beam," whereupon he and Lt. A contacted the ADCC flight controller at Johnson AFB 35 miles to their west, requesting that an interceptor be scrambled to investigate the source of the visual and the radar sightings.

An F-94B of the 339th Fighter-Interceptor Squadron, piloted by Lt. P, with Lt. R operating the APG-33 air-intercept radar, was scrambled, though a delay of over ten minutes intervened because of fuel-system difficulties during engine runup. The records show the F-94 airborne at about 0003-04, and it then took about 10 minutes to reach the Tokyo Bay area. The APG-33 set was a 3-cm (X-band) set with 50 KW power, and lock-on range of about 2500 yards, according to my information. The system had a B-scope, i.e., it displayed target range vs. azimuth. The case-file notes that: "The APG-33 radar is checked before and after every mission and appeared to be working normally."

At 0009, Shiroy picked up a moving target near Haneda and alerted the F-94 crew, who had no difficulty identifying it visually as an Air Force C-54 in the Haneda pattern. The crew is quoted in the report as reporting "exceptional visibility." Shiroy instructed the F-94 to begin searching at 5000 ft altitude as it got out over the Bay. But before proceeding with events of that search, a GCI detection of a moving target at about 0001 must be reviewed.

c. First GCI detection of orbiting object. Just before the F-94 became airborne out of Johnson AFB, Lt. B picked up the first definitely unusual moving target, at about 0000-01. His statement in the Bluebook case-file reads: "At the time of the scramble, I had what was believed to be the object in radar contact. The radar sighting indicated the object to be due south of this station over Tokyo Bay and approximately eight (8) miles northeast of Haneda. The target was in a right orbit moving at varying speeds. It was impossible to estimate speed due to the short distance and times involved." That passage is quoted in the Condon Report, but not the next, which comes from Malven's summary and indicates that Lt. B only meant that it was impossible to estimate the target's speed with much accuracy. The omitted passage is interesting, for it is one of a number of indications that anomalous propagation (which is the Condon Report's explanation for the radar sightings) is scarcely creditable:

An F-94 was scrambled to investigate. The object at this time had left the ground clutter and could be tracked (on the CPS-1) at varying speeds in a right orbit. Although impossible to accurately estimate speed, Lt. B gave a rough estimate of 100-150 knots, stopping, and hovering occasionally, and a maximum speed during the second orbit (just before F-94 was vectored in) of possibly 250-300 knots.

A map accompanying IR-35-52 shows the plotted orbiting path of the unknown target. The orbit radius is approximately 4 miles, centered just off the coast from the city of Funabashi, east of Tokyo. The orbiting path is about half over land, half over water. The map sketch, plus the file comments, imply that GCI had good contacts with the target only while it was moving out over the Bay. The ground-clutter pattern of the CPS-1 is plotted on the same map (and on other maps in the file), and it seems clear that the difficulty in tracking the target through the land portion of the roughly circular orbit was that most of that portion lay within the clutter area. The presumption is strong that this set did not have MTI, which is unfortunate.

The circumference of the orbit of about 4-mi radius would be about 25 miles. Taking Lt. B's rough estimate of 100-150 knots in the first of the two circuits of this orbit (i.e., the one he detected at about 0001), a total

circuit-time of perhaps 12-13 minutes is indicated. Although the basis for this time-estimate is quite rough, it matches reasonably well the fact that it was about 0012 when it had come around again, split up into three targets, and looped onshore again with the F-94 in pursuit this time.

If the object executing the above orbits had been the luminous object being watched from Haneda, it would have swung back and forth across their sky through an azimuth range of about 30 deg. Since no such motion seems to have been noted by the Haneda observers, I believe it must be concluded that the source they watched was distinct from the one radar-tracked in orbit.

d. Second orbit and F-94 intercept attempt. The times given in Lt. B's account of this phase of the sighting do not match those given by the pilot and radarman of the F-94 in their signed statements in the file. Other accounts in the file match those of the aircrew, but not the times in Lt. B's summary. This discrepancy (about 10-12 minutes) is specifically noted in Capt. Malven's IR-35-52 summary: "The ten minute difference in time between the statement by Lt. B, 528th ACGW SQ, and that reported by other personnel concerned, is believed to be a typographical error, since the statement agrees on every other portion of the sighting." That Lt. B and the aircrew were describing one and the same intercept seems beyond any doubt; and in view of Malven's quoted comment, I here use the times recorded by the aircrew and accepted as the correct times in other parts of the case-file. Further comment on this will be given below.

After completing the first of the two orbits partially tracked by GCI Shiroy, the target came around again where it was out of the CPS-1 ground-clutter pattern, and Lt. B regained contact. Malven's summary comments on the next developments as follows: "At 0012 the object reportedly broke into three smaller contacts, maintaining an interval of about 1/4 miles, with one contact remaining somewhat brighter. The F-94 was vectored on this object, reporting weak contact at 1500 and loss of contact at 0018. Within a few seconds, both the F-94 and the object entered the ground clutter and were not seen again."

The same portion of the incident is summarized in Lt. B's account (with different times), with the F-94 referred to by its code-name "Sun Dial 20." Immediately following the part of his account referring to the first starboard orbit in which he had plotted the target's movements, at around 0001, comes the following section: "Sun Dial 20 was ordered to search the Tokyo Bay area keeping a sharp lookout for any unusual occurrences. The object was again sighted by radar at 0017 on a starboard orbit in the same area as before. Sun Dial 20 was vectored to the target. He reported contact at 0025 and reported losing contact at 0028. Sun Dial 20 followed the target into our radar ground clutter area and we were unable to give Sun Dial 20 further assistance in re-establishing contact. Sun Dial 20 again resumed his visual search of the area until 0014, reporting negative visual sighting on this object at any time." If Malven's suggestion of typographical error is correct, the in-contact times in the foregoing should read 0015 and 0018, and presumably 0017 should be 0012. But regardless of the precise times, the important point is that Lt. B vectored the F-94 into the target, contact was thereby achieved, and Lt. B followed the target and pursuing F-94 northeastward into his ground clutter. I stress this because, in the Condon Report, the matter of the different times quoted is offered as the sole basis of a conclusion that ground radar and airborne radar were never following the same target. This is so clearly inconsistent with the actual contents of the case-file that it is difficult to understand the Report rationale.

Even more certain indication that the GCI radar was tracking target and F-94 in this crucial phase is given in the accounts prepared and signed by the pilot and his radarman. Here again we meet a code-designation, this time "Hi-Jinx", which was the designation for Shiroy GCI used in the air-to-ground radio transmissions that night and hence employed in these next two accounts. The F-94 pilot, Lt. P states: "The object was reported to be in the Tokyo Bay area in an orbit to the starboard at an estimated altitude of 5,000 feet. I observed nothing of an unusual nature in this area; however, at 0016 when vectored by Hi-Jinx on a heading of 320 degrees, and directed to look for a bogie at 1100 o'clock, 4 miles, Lt. R made radar contact at 10 degrees port, 6000 yards. The point moved rapidly from port to starboard and disappeared from the scope. I had no visual contact with the target."

And the signed statement from the radarman, Lt. R, is equally definite about these events: "At 0015 Hi-Jinx gave us a vector of 320 degrees. Hi-Jinx had a definite radar echo and gave us the vector to intercept the unidentified target. Hi-Jinx estimated the target to be at 11 o'clock to us at a range of 4 miles. At 0016 I picked up the radar contact at 10 degrees port, 10 degrees below at 6,000 yards. The target was rapidly moving from port to starboard and a 'lock on' could not be accomplished. A turn to the starboard was instigated to intercept target which disappeared on scope in approximately 90 seconds. No visual contact was made with the unidentified target. We continued our search over Tokyo Bay under Hi-Jinx control. At 0033 Hi-Jinx released us from scrambled mission..."

Of particular importance is the very close agreement of the vectoring instructions given by Shiroi GCI to the F-94 and the actual relative position at which they accomplished radar contact; GCI said 4 miles range at the aircraft's 11 o'clock position, and they actually got radar contact with the moving target at a 6000-yard range, 10 degrees to their port. Nearly exact agreement, and thus incontrovertibly demonstrating that ground-radar and airborne radar were then looking at the same moving unknown target, despite the contrary suggestions made in the Condon Report. Had the Condon Report presented all of the information in the case-file, it would have been difficult to maintain the curious position that is maintained all of the way to the final conclusion about these radar events in the Condon Report's treatment of the Haneda case.

That the moving target, as seen by both ground and airborne radar was a distinct target, though exhibiting radar cross-section somewhat smaller than that typical of most aircraft, is spelled out in Malven's IR-35-52 summary: "Lt. B, GCI Controller at the Shiroi GCI site, has had considerable experience under all conditions and thoroughly understands the capabilities of the CPS-1 radar. His statement was that the object was a bonafide moving target, though somewhat weaker than that normally obtained from a single jet fighter." And, with reference to the airborne radar contact, the same report states; "Lt. R, F-94 radar operator, has had about seven years' experience with airborne radar equipment. He states that the object was a bonafide target, and that to his knowledge, there was nothing within an area of 15-20 miles that could give the radar echo." It is exceedingly difficult to follow the Condon Report in viewing such targets as due to anomalous propagation.

Not only were there no visual sightings of the orbiting target as viewed from the F-94, but neither were there any from the Shiroi site, though Lt. B specifically sent men out to watch as these events transpired. Also, as mentioned earlier, it seems out of the question to equate any of the Haneda visual observations to the phase of the incident just discussed. Had there been a bright light on the unknown object during the time it was in starboard orbit, the Haneda observers would almost certainly have reported those movements. To be sure, the case-file is incomplete in not indicating how closely the Haneda observers were kept in touch as the GCI directed radar- intercept was being carried out. But at least it is clear that the Haneda tower controllers did not describe motions of the intensely bright light that would fit the roughly circular starboard orbits of radius near four miles. Thus, we seem forced to conclude either that the target the F-94 pursued was a different one from that observed at Haneda (likely interpretation), or that it was non-luminous during that intercept (unlikely alternative, since Haneda observations did not have so large a period of non-visibility of the source they had under observation 2330-0020).

6. Condon Report Critique of the Radar Sightings:

The Bluebook case-file contains essentially no discussion of the radar events, no suggestion of explanations in terms of any electronic or propagational anomalies. The case was simply put in the Unexplained category back in 1952 and has remained in that category since then at Bluebook.

By contrast, the Condon Report regards the above radar events as attributable to anomalous propagation. Four reasons are offered (p. 126) in support of that conclusion:

- 1) The tendency for targets to disappear and reappear;

- 2) The tendency for the target to break up into smaller targets;
- 3) The apparent lack of correlation between the targets seen on the GCI and airborne radars;
- 4) The radar invisibility of the target when visibility was "exceptionally good."

Each of these four points will now be considered.

First, the "tendency for the targets to disappear and reappear" was primarily a matter of the orbiting target's moving into and out of the ground- clutter pattern of the CPS-1, as is clearly shown in the map that constitutes Enclosure #5 in the IR-35-52 report, which was at the disposal of the Colorado staff concerned with this case. Ground returns from AP (anomalous propagation) may fade in and out as ducting intensities vary, but here we have the case of a moving target disappearing into and emerging from ground clutter, while executing a roughly circular orbit some 4 miles in radius. I believe it is safe to assert that nothing in the annals of anomalous propagation matches such behavior. Nor could the Borden-Vickers hypothesis of "reflections" off moving waves on inversions fit this situation, since such waves would not propagate in orbits, but would, at best, advance with the direction and speed of the mean wind at the inversion. Furthermore, the indicated target speed in the final phases of the attempted intercept was greater than that of the F-94, i.e., over 400 knots, far above wind speeds prevailing that night, so this could not in any event be squared with the (highly doubtful) Borden-Vickers hypothesis that was advanced years ago to account for the 1952 Washington National Airport UFO incidents.

Second, the breakup of the orbiting target into three separate targets cannot fairly be referred to as a "tendency for the target to break up into smaller targets." That breakup event occurred in just one definite instance, and the GCI controller chose to vector the F-94 onto the strongest of the resultant three targets. And when the F-94 initiated radar search in the specific area (11 o'clock at 4 miles) where that target was then moving, it immediately achieved radar contact. For the Condon Report to gloss over such definite features of the report and merely allude to all of this in language faintly suggestive of AP seems objectionable.

Third, to build a claim that there was "apparent lack of correlation between the targets seen on the GCI and airborne radars" on the sole basis of the mismatch of times listed by Lt. B on the one hand and by the aircrew on the other hand, to ignore the specific statement by the intelligence officer filing IR-35-52 about this being a typographical error on the part of Lt. B, and, above all, to ignore the obviously close correspondence between GCI and air borne radar targeting that led to the successful radar-intercept, and finally to ignore Lt. B's statement that the F-94 "followed the target into our radar ground clutter", all amount to a highly slanted assessment of case details, details not openly set out for the reader of the Condon Report to evaluate for himself. I believe that all of the material I have here extracted from the Haneda case file fully contradicts the third of the Condon Report four reasons for attributing the radar events to AP. I would suggest that it is precisely the impressive correlation between GCI and F-94 radar targeting on this non-visible, fast-moving object that constitutes the most important feature of the whole case.

Fourth, it is suggested that AP is somehow suspected because of "the radar invisibility of the target when visibility was 'exceptionally good.'" This is simply unclear. The exceptional visibility of the atmosphere that night is not physically related to "radar invisibility" in any way, and I suspect this was intended to read "the invisibility of the radar target when visibility was exceptionally good." As cited above, neither the Shiroi crew nor the F-94 crew ever saw any visible object to match their respective radar targets. Under some circumstances, such a situation would indeed be diagnostic of AP. BUt not here, where the radar target is moving at high speed around an orbit many miles in diameter, occasionally hovering motionless (see Malven's account cited earlier), and changing speed from 100-150 knots up to 250-300 knots, and finally accelerating to well above an F-94's 375-knot speed.

Thus, all four of the arguments offered in the Condon Report to support its claim that the Haneda radar

events were due to anomalous propagation must be rejected. Those arguments seem to me to be built up by a highly selective extraction of details from the Bluebook case-file, by ignoring the limits of the kind of effects one can expect from AP, and by using wording that so distorts key events in the incident as to give a vague impression where the facts of the case are really quite specific.

It has, of course, taken more space to clarify this Haneda case than the case is given in the Condon Report itself. Unfortunately, this would also prove true of the clarification of some fifteen to twenty other UFO cases whose "explanation" in the Condon Report contains, in my opinion, equally objectionable features, equally casual glossing-over of physical principles, of important quantitative points. Equally serious omissions of basic case information mark many of those case discussions in the Condon Report. Here I have used Haneda only as an illustration of those points; but I stress that it is by no means unique. The Condon Report confronted a disappointingly small sample of the old "classic" cases, the long-puzzling cases that have kept the UFO question alive over the years, and those few that it did confront it explained away by argumentation as unconvincing as that which disposes of the Haneda AFB events in terms of diffraction of Capella and anomalous propagation. Scientifically weak argumentation is found in a large fraction of the case analysis of the Condon Report, and stands as the principal reason why its conclusions ought to be rejected.

Here are some other examples of UFO cases considered explained in the Condon Report for which I would take strong exception to the argumentation presented and would regard as both unexplained and of strong scientific interest (page numbers in Condon Report are indicated): Flagstaff, Ariz., 5/20/50 (p. 245); Washington, D. C., 7/19/52 (p. 153); Bellefontaine, O., 8/1/52 (p. 161); Gulf of Mexico, 12/6/52 (p. 148); Odessa, Wash., 12/10/52 (p. 140); Continental Divide, N.M., 1/26/53 (p. 143); Seven Isles, Quebec, 6/29/54 (p. 139); Niagara Falls, N.Y., 7/25/57 (p. 145); Kirtland AFB, N.M., 11/4/57 (p. 141); Gulf of Mexico, 11/5/57 (p. 165); Peru, 12/30/66 (p. 280); Holloman AFB, 3/2/67 (p. 150); Kincheloe AFB, 9/11/67 (p. 164); Vandenberg AFB, 10/6/67 (p. 353).

Case 4. Kirtland AFB, November 4, 1957.

Brief summary: Two CAA control tower operators observe a lighted egg-shaped object descend to and cross obliquely the runway area at Kirtland AFB (Albuquerque), hover near the ground for tens of seconds, then climb at unprecedented speed into the overcast. On radar, it was then followed south some miles, where it orbited a number of minutes before returning to the airfield to follow an Air Force aircraft outbound from Kirtland.

1. Introduction:

This case, discussed in the Condon Report on p. 141, is an example of a UFO report which had lain in Bluebook files for years, not known to anyone outside of Air Force circles.

Immediately upon reading it, I became quite curious about it; more candidly, I became quite suspicious about it. For, as you will note on reading it for yourself, it purports to explain an incident in terms of an hypothesis with some glaringly improbable assumptions, and makes a key assertion that is hard to regard as factual. Let me quote from the first descriptive paragraph: "Observers in the CAA (now FAA) control tower saw an unidentified dark object with a white light underneath, about the 'shape of an automobile on end', that crossed the field at about 1500 ft and circled as if to come in for a landing on the E-W runway. This unidentified object appeared to reverse direction at low altitude, while out of sight of the observers behind some buildings, and climbed suddenly to about 200-300 ft., heading away from the field on a 120 deg. course. Then it went into a steep climb and disappeared into the overcast." The Condon Report next notes that; "The Air Force view is that this UFO was a small, powerful private aircraft, flying without flight plan, that became confused and attempted a landing at the wrong airport. The pilot apparently realized his error when he saw a brightly-lit restricted area, which was at the point where the object reversed direction..."

The Report next remarks very briefly that the radar blip from this object was described by the operator as a "perfectly normal aircraft return", that the radar tract "showed no characteristics that would have been beyond the capabilities of the more powerful private aircraft available at the time," and the conclusion arrived at in the Condon Report, without further discussion, is that: "There seems to be no reason to doubt the accuracy of this analysis."

2. Some Suspect Features of the Condon Report's Explanation

It seemed to me that there were several reasons "to doubt the accuracy of this analysis." First, let me point out that the first line or two of the account in the Condon Report contains information that the incident took place with "light rain over the airfield", late in the evening (2245-2305 MST), which I found to be correct, on checking meteorological records. Thus the reader is asked to accept the picture of a pilot coming into an unfamiliar airfield at night and under rain conditions, and doing a 180 deg. return at so low an altitude that it could subsequently climb suddenly to about 200-300 ft; and we are asked to accept the picture of this highly hazardous low-altitude nighttime turn being executed so sharply that it occurred "while out of sight of the observers behind some buildings." Now these are not casual bystanders doing the observing, but CAA controllers in a tower designed and located to afford full view of all aircraft operations occurring in or near its airfield. Hence my reaction to all of this was a reaction of doubt. Pilots don't live too long who execute strange and dangerous maneuvers of the type implied in this explanation. And CAA towers are not located in such a manner that "buildings" obscure so large a block of airfield-airspace as to permit aircraft to do 180 deg. turns while hidden from tower view behind them (at night, in a rain!).

3. Search for the Principal Witnesses:

The foregoing points put such strong a priori doubt upon the "private aircraft" explanation advanced in the Condon Report that I began an independent check on this case, just as I have been checking several dozen other Condon Report cases in the months since publication of the Report. Here, as in all other cases in the Report, there are no witness-names given to facilitate independent check, but by beginning my inquiries through the FAA, I soon got in touch with the two CAA tower observers, both of whom are still with FAA, one in Oklahoma, one in California. Concurrently, I initiated a number of inquiries concerning the existence of any structures back in 1957 that could have hidden an aircraft from tower view in the manner suggested by the Report. What I ultimately learned constitutes only one example of many that back up the statement I have been making recently to many professional groups: The National Academy of Sciences is going to be in a most awkward position when the full picture of the inadequacies of the Condon Report is recognized; for I believe it will become all too obvious that the Academy placed its weighty stamp on this dismal report without even a semblance of rigorous checking of its contents.

The two tower controllers, R. M. Kaser and E. G. Brink, with whom I have had a total of five telephone interviews in the course of clarifying the case, explained to me that the object was so unlike an aircraft and exhibited performance characteristics so unlike those of any aircraft flying then or now that the "private aircraft" explanation was quite amusing. Neither had heard of the Air Force explanation, neither had heard of the Condon Project concurrence therein, and, most disturbing of all, neither had ever heard of the Condon Project: No one on the Condon Project ever contacted these two men! A half-million-dollar Project, a Report filled with expensive trivia and matters shedding essentially no light on the heart of the UFO: puzzle, and no Project investigator even bothers to hunt down the two key witnesses in this case, so casually closed by easy acceptance of the Bluebook "aircraft" explanation.

Failure to locate those two men as part of the investigation of this case is all the more difficult to understand because CAA tower operators involved as witnesses of a UFO incident were actually on duty would seem to constitute just the type of witnesses one should most earnestly seek out in attempts to clarify the UFO puzzle. In various sections of the Condon Report, witness- shortcomings (lack of experience, lack of familiarity with observing things in the sky, basic lack of credibility, etc.) are lamented, yet here, where the backgrounds of

the witnesses and the observing circumstances are highly favorable to getting reliable testimony, the Colorado group did not bother to locate the witnesses. (This is not an isolated example. Even in cases which were conceded to be Unexplained, such as the June 23, 1955 Mohawk Airlines multiple-witness sighting near Utica, N.Y. [p. 143 in Report], or the Jackson, Alabama, November 14, 1956 airline case, both conceded to be unexplained, I found on interviewing key witnesses as part of my cross-check on the Condon Report, that no one from Colorado had ever talked to the witnesses. In still other important instances, only a fraction of the available witnesses were queried in preparing the Condon Report. Suggestions that the Report was based on intensive investigatory work simply are not correct.)

4. Information Gained from Witness-Interviews:

When I contacted Kaser and Brink, they told me I was the first person to query them on the case since their interrogation by an Air Force captain from Colorado Springs, who had come to interview them at Kirtland just after the incident. Subsequently, I secured the Bluebook case-file on this sighting, and ascertained that a Capt. Patrick O. Shere, from Ent AFB did the interrogation on Nov. 8, 1957, just four days after the sighting.

The accounts I secured in 1969 from Kaser and Brink matched impressively the information I found in Shere's 1957 report in the Bluebook case-file. There were a few recollective discrepancies of distance or time estimates in the witness accounts given in 1969, as compared with their 1957 statements to the Air Force, but the agreements were far more significant than the small number of mismatches.

In contrast to the somewhat vague impressions I gained (and other readers would surely also gain) from reading the Condon Report version, here is what is in the Bluebook case-file and what they told me directly.

The object came down in a rather steep dive at the east end of Runway 26, left the flight line, crossed runways, taxiways and unpaved areas at about a 30-degree angle, and proceeded southwestward towards the CAA tower at an altitude they estimated at a few tens of feet above ground. Quickly getting 7x binoculars on it, they established that it had no wings, tail, or fuselage, was elongated in the vertical direction, and exhibited a somewhat eggshaped form (KaCer). It appeared to be perhaps 15-20 ft in vertical dimension, about the size of an automobile on end, and had a single white light in its base. Both men were emphatic in stressing to me that it in no way resembled an aircraft.

It came towards them until it reached a B-58 service pad near the northeast corner of Area D (Drumhead Area, a restricted area lying south of the E-W runway at Kirtland). That spot lay about 3000 ft ENE of the tower, near an old machine-gun calibration bunker still present at Kirtland AFB. There it proceeded to stop completely, hover just above ground _in full view_ for a time that Kaser estimated at about 20 seconds, that Brink suggested to me was more like a minute, and that the contemporary Air Force interrogation implied as being rather more than a minute. Next they said it started moving again, still at very low altitude, still at modest speed, until it-again reached the eastern boundary of the field. At that point, the object climbed at an extremely rapid rate (which Kaser said was far faster than that of such modern jets as the T-38).

The Bluebook report expresses the witness' estimate of the climb rate as 45,000 ft/min, which is almost certainly a too-literal conversion from Mach 1. My phone-interview notes include a quote of Brink's statement to me that, "There was no doubt in my mind that no aircraft I knew of then, or ever operating since then, would compare with it. " Both men were emphatic in stating to me that at no time was this object hidden by any buildings. I confirmed through the Albuquerque FAA office that Area D has never had anything but chain-link fence around it, and that no buildings other than scattered one-story metal buildings ever existed either inside or outside Area D in that sector. The bunker is only about 15-20 feet high, judging from my own recent observations and photos of it from the air. The Bluebook interrogation report contains no statements hinting that the object was ever hidden from view by any structures (although the Bluebook file contains the usual number of internally inconsistent and confusingly presented details).

I asked both men whether they alerted anyone else while the foregoing events were taking place. They both indicated that the object was of such unprecedented nature that it wasn't until it shot up into the overcast that they got on the phone to get the CAA Radar Approach Control (RAPCON) unit to look for a fast target to the east. Kaser recalled that a CPN-18 surveillance radar was in use at that RAPCON unit at that time, a point confirmed to me in subsequent correspondence with the present chief of the Albuquerque Airport Traffic Control Tower, Mr. Robert L. Behrens, who also provided other helpful information. Unfortunately, no one who was in the Albuquerque/Kirtland RAPCON unit in 1957 is now available, and the person whom Kaser thought was actually on the CPN-18 that night is now deceased. Thus I have only Kaser and Brink recollections of the radar-plotting of the unknown, plus the less than precise information in the Nov. 6, 1957 TWX to Bluebook. Capt. Shere did not, evidently, take the trouble to secure any information from radar personnel.

As seen on the RAPCON CPN-18, the unknown target was still moving in an easterly direction when the alert call came from the tower. It then turned southward, and as Kaser recalled, moved south at very high speed, though nothing is said about speed in the Kirtland TWX of Nov. 6, 1957. It proceeded a number of miles south towards the vicinity of the Albuquerque Low Frequency Range Station, orbited there for a number of minutes, came back north to near Kirtland, took up a trail position about a half-mile behind an Air Force C-46 just then leaving Kirtland, and moved offscope with the C-46. The Nov. 8, 1957 report from Commander, 34th Air Div. to ADC and to the Air Technical Intelligence Command closed with the rather reasonable comment: "Sighting and descriptions conform to no known criteria for identification of UFOs." The followup report of Nov. 13, 1957, prepared by Air Intelligence personnel from Ent AFB, contains a number of relevant comments on the experience of the two witnesses (23 years of tower control work between them as of that date), and on their intelligence, closing with the remarks: "In the opinion of the interviewer, both sources (witnesses) are considered completely competent and reliable."

5. Critique of the Evaluation in the Condon Report:

The Kirtland AFB case is a rather good (though not isolated) instance of the general point I feel obliged to make on the basis of my continuing check of the Condon Report: In it we have not been given anything superior to the generally casual and often incompetent level of case-analysis that marked Bluebook's handling of the UFO problem in past years.

In the Bluebook files, this case is carried as "Possible Aircraft". Study of the 21-page case-file reveals that this is based solely on passing comment made by Capt. Shere in closing his summary letter of November 8: "The opinion of the preparing officer is that this object may possibly have been an unidentified aircraft, possibly confused by the runways at Kirtland AFB. The reasons for this opinion are: (a) The observers are considered competent and reliable sources, and in the opinion of this interviewer actually saw an object they could not identify. (b) The object was tracked on a radar scope by a competent operator. (c) The object does not meet identification criteria for any other phenomena."

The stunning non sequitor of that final conclusion might serve as an epitome of 22 years of Air Force response to unexplainable objects in our airspace. But when one then turns to the Condon Report's analysis and evaluation, a Report that was identified to the public and the scientific community as the definitive study of UFOs, no visible improvement is found. Ignoring almost everything of interest in the case-file except that a lighted airborne object came down near Kirtland airfield and left, the Condon Report covers this whole intriguing case in two short paragraphs, cites the Air Force view, embellishes it a bit by speaking of the lost aircraft as "powerful" (presumably to account for its observed Mach 1 climb-out) and suggesting that it was "flying without flight plan" (this explains why it was wandering across runways and taxiways at night, in a rain, at an altitude of a few tens of feet), and the Report then closes off the case with a terse conclusion: "There seems to be no reason to doubt the accuracy of this analysis."

Two telephone calls to the two principal witnesses would have confronted the Colorado investigators with

emphatic testimony, supporting the contents (though not the conclusions) of the Bluebook file, and that would have rendered the suggested "powerful private aircraft" explanation untenable. By not contacting the witnesses and by overlooking most of the salient features of the reported observations, this UFO report has been left safely in the "explained" category where Bluebook put it. One has here a sample of the low scientific level of investigative and evaluative work that will be so apparent to any who take the trouble to study carefully and thoroughly the Condon Report on UFOs. AAAS members are urged to study it carefully for themselves and to decide whether it would be scientifically advisable to accept it as the final word on the 22-year-long puzzle of the UFO problem. I submit that it is most inadvisable.

From: [Kathryn E L Denning](#)
To: [Chelsea Haramia](#); [Jason Wright](#)
Cc: [Hector Socas-Navarro](#); [Jacob Haqq Misra](#); [STEVEN DICK](#); [Anamaria Berea](#); [Kopparapu, Ravi Kumar \(GSFC-6990\)](#); [Eghigian, Greg](#); [\(b\) \(6\)](#); [Julia DeMarines](#); [Margaret Turnbull](#); [Franck Marchis](#); [Clément Vidal](#); [Haqq-Misra, Jacob D. \(GSFC-6062\) \[Science Collaborator\]](#)
Subject: RE: [EXTERNAL] IAA PC SETI UFO text
Date: Friday, May 7, 2021 12:55:36 PM

Hi All: Sorry for delay here. More shortly -- KD

From: Chelsea Haramia <(b) (6)>
Sent: Thursday, May 6, 2021 9:11 AM
To: Jason Wright <(b) (6)>
Cc: Hector Socas-Navarro <(b) (6)> Jacob Haqq Misra <(b) (6)> STEVEN DICK <(b) (6)> Anamaria Berea <(b) (6)>; Kathryn E L Denning <(b) (6)> Kopparapu, Ravi Kumar (GSFC-6990) <ravikumar.kopparapu@nasa.gov>; Eghigian, Greg <(b) (6)> <(b) (6)> Julia DeMarines <(b) (6)> Margaret Turnbull <(b) (6)> Franck Marchis <(b) (6)> Clément Vidal <(b) (6)>
Subject: Re: [EXTERNAL] IAA PC SETI UFO text

I've signed. Thanks, Jason.

Best,
Chelsea

On Thu, May 6, 2021 at 6:24 AM Jason Wright <(b) (6)> wrote:

Hi, all. An update:

In our straw poll to assess how close we are we have:

- 6 Sign as is: Anamaria, Jason, Hector, Greg, Steve, and Franck
- 2 Do not sign: Jacob and Ravi
- 6 Have not voted: Kathryn, Klara, Clément, Maggie, Chelsea, Julia.

We are also waiting on comments from Kathryn and Klara, who asked for more time.

Jason

On Sat, Apr 17, 2021 at 10:18 AM Jason Wright <(b) (6)> wrote:

Duplicate email chain - already processed



Deletion Page

Requester: John Greenewald

Request #: 21-HQ-F-00603

35 page(s) containing duplicate information is/are held in the file.