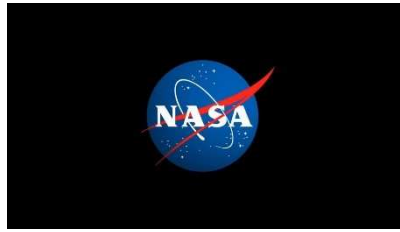


The Needle in the Haystack: Reflections on the NASA UAP Meeting, May 2023

V.J. Ballester Olmos and Chris Aubeck



On May 31, 2023, NASA held a historic meeting, live streamed by its independent study team on categorizing and evaluating data of unidentified anomalous phenomena (UAP).¹ The full meeting, which lasted from 10:30 to 14:30 EDT, was aired on NASA Television and the agency's website. It is now preserved on YouTube.² Previously, on May 12, a NASA communiqué titled "NASA Provides Coverage of Unidentified Anomalous Phenomena Meeting" had reported:

NASA defines UAP as observations of events in the sky that cannot be identified as aircraft or known natural phenomena from a scientific perspective. The focus of this public meeting is to hold final deliberations before the agency's independent study team publishes a report this summer. Outlining how to evaluate and study UAP by using data, technology, and the tools of science is a NASA priority. It is not a review or assessment of previous unidentifiable observations. The report will inform NASA on what possible data could be collected in the future to shed light on the nature and origin of UAP.

The UAP independent study team is a counsel of 16 community experts across diverse areas on matters relevant to potential methods of study for unidentified anomalous phenomena. NASA commissioned the nine-month study to examine UAP from a scientific perspective and create a road map for how to use data and the tools of science to move our understanding of UAP forward. Right now, the limited high-quality observations of UAP make it impossible to draw scientific conclusions from the data about the nature of such events.³ [Our emphasis].

Days before the actual session, NASA released the meeting's agenda,⁴ which was not 100% complete. We watched this session online, which led us to form our observations and form an assessment, comprised of both praise and criticism. Our aim with this article is to provide a quick overview of the meeting, highlight the best ideas, and offer our own remarks and thoughts.

The enigma of flying saucers, a problem that has lingered for 76 years since its inception in 1947, is more deeply rooted in people's minds than in technology. A nine-month study cannot resolve such an enduring issue. However, it is true that the stated objective is

¹ <https://www.nasa.gov/feature/nasa-announces-unidentified-anomalous-phenomena-study-team-members/>

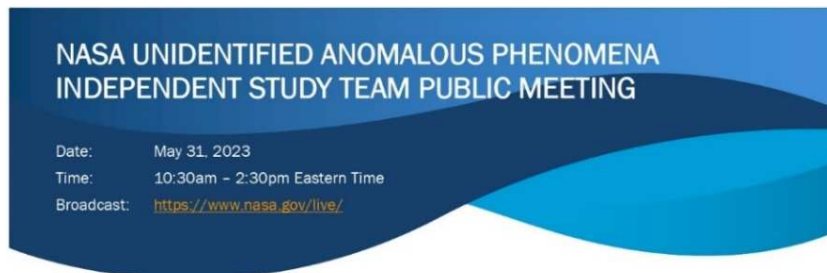
² <https://science.nasa.gov/uap> and <https://www.youtube.com/watch?v=bQo08JRY0iM>

³ <https://www.nasa.gov/press-release/nasa-provides-coverage-of-unidentified-anomalous-phenomena-meeting>

⁴ https://science.nasa.gov/science-red/s3fs-public/atoms/files/Public%20Meeting%20Agenda_0.pdf

merely to create a “road map” and provide recommendations for a proper study of UAP. NASA’s independent study began on October 24, 2022 and is set to conclude by the end of July 2023. One intriguing question is why NASA would convene a meeting on the last day of May, just two months before the release of their final report. Perhaps they aim to manage high expectations among those who are strongly inclined to believe in UAP. This could explain why NASA’s May 12 dispatch already stated that no scientific conclusions could be drawn about the nature of UAP. It’s important to note that this isn’t a unique phenomenon; rather, as the P in UAP signifies, there are multiple phenomena – a variety of coincidental events with as many different characteristics as there are sightings.

Understanding UAPs is vital for scientists at NASA, the U.S. Department of Defense, and the various new associations studying this phenomenon around the world. Recognizing that there isn’t a single nature or origin for these UAP observations is crucial. Each sighting has its own essence (natural, manmade, or psychological) and, for the point of view of the witness, a motivation (legitimate or spurious). This mix of different types of events won’t produce the uniform patterns in a dataset that scientists usually analyze. If these researchers also covered ground level claims—termed “close encounters” by ufologists—they’d face an unexpected challenge, one that would likely require a greater number of social scientists on the research team than originally planned.



Time	Subject	Speaker(s)
10:30am - 10:40am	Call to Order, Panelist Introductions, and Overview Remarks	Dr. Daniel Evans Designated Federal Official
10:40am - 10:50am	NASA Science Perspective	Dr. Nicky Fox Associate Administrator, SMD
10:50am - 11:00am	Chair's Perspective	Dr. David Spergel Chair, UAPIST
11:00am - 11:30am	All-Domain Anomaly Resolution (AARO) Office Presentation	Dr. Sean Kirkpatrick Director, AARO
11:30am - 12:00pm	FAA Presentation	Mr. Mike Freie FAA Air Traffic Surveillance Services Office
12:00pm - 12:30pm	Adjourn for Lunch	
12:30pm - 1:30pm	UAPIST Panelist Presentations and Discussions	
	Framing the Issue of UAP	Dr. Nadia Drake, UAPIST
	NASA's Role in UAP Studies	Dr. Paula Bontempi, UAPIST
	Data and Crowdsourcing	Dr. Federica Bianco, UAPIST
	Relevant Observations Beyond Earth's Atmosphere	Dr. David Grinspoon, UAPIST
	Reporting Challenges	Dr. Karlin Toner / Dr. Josh Semeter, UAPIST
	Initial Responses to Charge Elements	Dr. Jennifer Buss, UAPIST
1:30pm - 1:50pm	Summary of Discussions	All Panelists - Chaired by Dr. David Spergel
1:50pm - 2:20pm	Public Comment: Panel Responds to Questions Submitted Online	All Panelists
2:20pm - 2:30pm	Summary and Next Steps	Dr. David Spergel, UAPIST

Additional information

- Public participation is available by submitting and upvoting questions at <https://nasa.cnf.io/sessions/nh4r/>
- A media teleconference will take place at 3:00pm ET and will be broadcast at <https://www.nasa.gov/live>



At 10:30 sharp, Daniel Evans delivered some opening remarks. Dr. Evans serves in dual roles as the Assistant Deputy Associate Administrator for Space Research at NASA and as the designated federal official for the NASA UAP Team. He explained the reason why:

In recent years, the subject of unidentified aerial phenomena nowadays termed unidentified anomalous phenomena or UAPs has captured the attention of the public, the scientific community, and the government alike and it's now our collective responsibility to investigate these occurrences with a rigorous scientific scrutiny that they deserve.

Despite the USAF Blue Book Project (1947-1969), the University of Colorado UFO Project (1966-1968), and numerous ongoing UFO reports, NASA had not previously felt the need to get involved. Not to mention the rebuff NASA gave to the U.S. Administration in 1977 when it declined to enter the UFO arena.⁵ But times have changed. Now, there is an increasing interest and focus on UFOs (UAPs) and, suddenly, NASA feels the obligation to engage with this issue. Certainly owing to the associated media exposure. But that's fine. Every opportunity for science to investigate UFO phenomena is commendable. After all, it can contribute to public education.

What is their stated purpose? NASA is an organization dedicated to exploring the unknown. As Evans expresses, "this is in our DNA." Furthermore, he affirmed that UAPs could "pose any potential risks to airspace safety." Yet this is a recently adopted mantra, an excuse to allocate resources and attention to the UAP problem, despite the number of UFO-related incidents over the decades being near zero.

Evans correctly argued that science is built on the foundation of evidence, thrives under scrutiny, and demands the reproducibility of results. However, this typically applies to observable natural phenomena. Sightings of flying saucers cannot be reproduced on demand. Generalities may sound appealing in the absence of practical knowledge of UFO reports. However, when it comes to UFO (or UAP) reporting, these general principles need to be adapted to fit the special circumstances at stake here. We are starting from scratch and, consequently, reinventing the wheel.

So far, the intentions seem clear. But, what exactly does NASA intend to do? They do not aim to resolve the UAP issue. They simply aspire to provide "a road map to guide us for future analysis." To be fair then, we should not ask for more.

Acknowledging the high public interest in this subject and a strong demand for answers, Evans stated that "conversations like this one are the first step to reducing the stigma surrounding UAP reporting." The term "stigma" is a buzzword today in the UAP community. It's either used by those unaware of UFO history⁶ or by those seeking to make an emotional argument to rally public support to their agendas. Ever since 1947, when flying saucers culturally burst onto the scene, they've become firmly ingrained in societies around the world through literature, cinema, television, advertising, and more. Is there

⁵ V.J. Ballester Olmos, "History: UFO Investigation at NASA," December 2019, http://fotocat.blogspot.com/2019_12_18_archive.html (scroll down to blog's entry)

⁶ Chris Aubeck, *Alien Artifacts*, 2022, <https://tinyurl.com/yfxte36x>

truly a stigma to report? Considering there are more than 1,000 pilot cases reported around the world,^{7,8} the concept of a stigma seems to be a fallacy. Nobody is generally prevented from reporting flying saucers, UFOs, or UAPs, with perhaps some very particular exceptions. The dissemination of UFO sighting accounts, including the most intense stories featuring landings and associated living creatures, numbers in the thousands worldwide.^{9,10,11}



Dan Evans.

Central to Evans' speech was his affirmation of NASA's "commitment to openness," linking it to the organization's reputation and scientific integrity. We have no doubt that NASA will present its findings with utmost fairness. However, we foresee inevitable clashes with the more extreme elements of the ufological movement when NASA discloses that they haven't found evidence of aliens in the events they've examined.

Near the end, Evans poetically asserted that "NASA believes that the study of unidentified anomalous phenomena represents an exciting step forward in our quest to uncover the mysteries of the world around us." In years to come, we might look back on this statement

⁷ Dominique Weinstein, "Unidentified Aerial Phenomena – Eighty Years of Pilot Sightings," https://static1.squarespace.com/static/5cf80ff422b5a90001351e31/t/5d02eb46935aac0001690f62/1560472408972/narcap_revised_tr-4.pdf

⁸ Tim Printy, "The Weinstein Catalog: Ufological Bullion or Fool's Gold?," in V.J. Ballester-Olmos & Richard W. Heiden (eds.), *The Reliability of UFO Witness Testimony*, UPIAR, 2023, pp. 180-189, https://www.academia.edu/101922617/The_Reliability_of_UFO_Witness_Testimony

⁹ Jacques Vallée, "A Century of UFO Landings (1868-1968)," in *Passport to Magonia*, Henry Regnery Co. (Chicago), 1969, pp. 164-360.

¹⁰ V.J. Ballester Olmos & J.A. Fernández Peris, *Enciclopedia de los encuentros cercanos con OVNIS*, Plaza & Janés (Barcelona), 1987, https://www.academia.edu/41625252/ENCICLOPEDIA_DE_LOS_ENCUENTROS_CERCANOS_CON_OVNIS

¹¹ Peter Rogerson, "International Catalogue of Close Encounter and Entity Reports," <http://intcat.blogspot.com/>

with amusement, but it resonates well in a virtual address that garnered 195K views over the next three days.

Evans concluded his introduction with two significant footnotes, labeled as “administrative remarks”. Firstly, the UAP Team reports to the NASA Earth Science Advisory Committee, not directly to the Government. Secondly, and more relevant to us as students of UFO phenomena, he addressed the recent change in the National Defense Authorization Act that shifted the ‘A’ in UAP from ‘aerial’ to ‘anomalous’:¹²

[as] the majority of UAP sightings to date have been in the aerial domain...this panel's focus is on the aerial aspect of anomalous ...

This is quite logical; however, it avoids addressing a key aspect of UFO narratives that cannot be ignored when making a comprehensive assessment of this phenomenon. This includes accounts of face-to-face encounters with aliens, vehicle interference, ground markings, and damaged vegetation, reported by thousands of people. In our opinion, this is the core of the issue. This is why we are convinced that the study of the credibility of UFO testimony, particularly for non-aerial phenomena, is extremely important.¹³

Following Evans was Dr. Nikki Fox, associate administrator for NASA's Science Mission Directorate, who felt disheartened to hear of the harassment that some of the UAPIST panelists have faced online because they're studying UAP. This is due to the exaggerated publicity this issue attracts these days; unlike the past, when scientists investigating even the most critical aspects of UFOs, such as abductions, were able to do so without being bullied (remember Hynek or, more recently, Mack). Nevertheless, we, as UFO researchers, maintain a zero-tolerance policy for any form of harassment towards UFO/UAP investigators.

In her presentation, Fox provided further insight into the team's ongoing “road map”: “[it] will help the federal government obtain usable data to explain the nature of future UAPs.” She also proposed a relevant categorization of available UAP data:

...right now there is very limited number of high quality observations and data curation of UAP. The existing data available from eyewitness reports are often modeled and cannot provide conclusive evidence that supports UAP recognition and analysis ... This lack of high quality data makes it impossible to draw scientific conclusions on the nature of UAP.

Although this group of scientists is new to UFO research, they immediately recognize that the reservoir of UFO data is generally poor, or as it has been described, it exists within a Low Information Zone.¹⁴ And we can predict that their “Doubting Thomas” stance (that is,

¹² V.J. Ballester Olmos, “The Pentagon UAP Study 2023,”

https://www.academia.edu/99475636/THE_PENTAGON_UAP_STUDY_2023

¹³ V.J. Ballester-Olmos & Richard W. Heiden (eds.), *The Reliability of UFO Witness Testimony*, UPIAR, 2023,

https://www.academia.edu/101922617/The_Reliability_of_UFO_Witness_Testimony

¹⁴ Mick West, “The Grey Birds,”

https://mickwest.substack.com/p/the-grey-birds?utm_source=substack&utm_medium=email

scientific skepticism) will increase as they delve further into the investigation of more UAP reports.

Another instructive comment, which conspiracy-minded ufologists should note, occurred when Fox explained the secret behind certain classified UAP sightings:

... it's often the sensor platform that is classified ... if a fighter jet took a picture of the Statue of Liberty then that image would be classified not because of the subject in the picture but because of the sensors on the plane.

Next, Dr. David Spergel, President of the Simons Foundation and Director of UAPIST, shared the chair's perspective, and the first idea he put forward was to dissipate doubts about what they are doing:

... our role here is not to resolve the nature of these events but rather to give NASA guidance to provide a road map of how it can contribute in this area.

OK, in principle, NASA does not aim to compete with AARO in the UAP study. However, NASA also seeks its own slice of the pie in this area of research, as if it were a talent competition. AARO will benefit from UAPIST's recommendations, but by the time these are proposed, they certainly won't be novel to the DoD UAP Office anymore.

Cosmologist Spergel is aware of the "unsystematic and fragmented" nature of UAP data collection efforts, with various agencies often using "instruments uncalibrated for scientific data collection." He continued: "When you see something unusual the first thing you have to do is understand how that data was taken and I think this is one of the challenges one faces when you have data taken by uncalibrated instruments." Here, one of the major problems in UAP research emerges, and Spergel, as the scientist he is, promptly recognizes it. He anticipates that a systematic search will detect the core of the unusual phenomena. Therefore they recommend creating specific sensors for this search. However, what they still don't know at this stage is that the objects to be monitored can have different and varied natures and origins, and no unique detecting apparatus can be designed for such a purpose. Today the Navy aircraft's most advanced FLIR system detects a drone; tomorrow, a bird; then, a balloon, a narco plane, a civil airplane, a kite, ball lightning, Elves, etc. It is a beginner's mistake to expect uniform data from the reported phenomena. This conception will only be corrected by experience.



David Spergel.

As a newcomer in UFO research, Dr. Spergel believes UAPs have the potential to reveal groundbreaking discoveries, akin to the Sprites. He expressed this sentiment, stating “I think this is one of the fascinating things about the UAP phenomenon if it's something that's anomalous that makes it interesting and worthy of study.” If NASA continues its research, it will eventually understand that this isn't a singular, mysterious phenomenon. Instead, there are numerous phenomena at play, all natural yet seemingly distorted through the lens of human perception, a tool that we cannot easily calibrate.

Dr. Spergel passed the baton to Dr. Sean Kirkpatrick, director of the All-domain Anomaly Resolution Office (AARO), established in July 2022 at the Pentagon, as an invited contributor to the meeting. Kirkpatrick began by applauding the NASA commission “for exploring what data and tools could be leveraged to shed greater light on UAP.” For better or worse, he appears to firmly believe in an existing relationship between UAPs and space when noting that NASA

is critical to understanding the nature and origin of UAP [as it] brings unique capabilities [as having] access to Earth sensing satellites, radiological sensors, tools for gravitational wave, geomagnetic wave detection, and means for analyzing open source cloud and crowdsource data.

But AARO’s own database appears to contradict this because, as he indicated further on: “I have no space reports and I have no maritime reports. That is notable even though we are looking across all of those domains.” Dr. Kirkpatrick suggests that this phenomenon is complex, saying

... the resolution of all UAP cases cannot be accomplished by DoD and the intelligence community alone. AARO's ultimate success will require Partnerships with the interagency industry, Academia, the scientific community, and the public which all bring their own resources, ideas and expertise to the UAP challenge.

For us, the key word is expertise. It’s the existing know-how of those civilian researchers and analysts in Europe, Latin America, and the United States who hold the clues about what UAPs are not, and how an alien myth developed from UAP observations and claims.

Finally, significant hints about the nature of the incoming “evidence” began to surface. Dr. Kirkpatrick was straightforward when announcing three outstanding inferences:

[1] *only a very small percentage of UAP reports displays signatures that could reasonably be described as anomalous. The majority of unidentified objects reported to AARO and in our holdings demonstrate mundane characteristics of readily explainable sources...*

[2] *while a large number of cases in AARO's holdings remain technically unresolved, this is primarily due to a lack of data associated with those cases...without sufficient data we are unable to reach defensible conclusions that meet the high scientific standards we set for resolution...*

[3] *meanwhile for the few objects that do demonstrate potentially anomalous characteristics, AARO is approaching these cases with the highest level of objectivity and*

analytic rigor. This includes physical testing and employing modeling and simulation to validate our analyses and the underlying theories and then peer-reviewing those results before reaching any conclusions...

That is, most phenomena are visual trash. Many other reports do not show strangeness but poor data prevents them from being readily dismissed. Apparently, they have isolated a few truly anomalous cases. We are excited and eager to see the entire documentation of these unidentifiable, anomalous events for independent scrutiny.



Sean Kirkpatrick.

Following his speech, Kirkpatrick showed a slide which slightly updated his April 2023 testimony before the U.S. Senate’s Armed Services Committee on Emerging Threats and Capabilities.¹⁵ We find minor statistical differences: 66% of UAPs at altitudes between 15K and 25K (versus 72%), 47% of spherical morphologies (from 52%). Basic features remain the same. The mapping of reports, labeled as “hotspots”, has little meaning on the actual geographical distribution of UAP. Kirkpatrick self-explained this effect: “AARO is focused on National Security areas ... [therefore this is a] collection biased map [really showing] where our sensors are, our military, our IC, and some of the FAA data.”



Considering the high number of UAP reports they are collecting from Intelligence sources, it seems odd that Kirkpatrick comes back to the 2022 Irani balloon-like, drone’s filmed

¹⁵ V.J. Ballester Olmos, “The 2023 U.S. Senate UAP Hearing,” https://www.academia.edu/101720680/The_2023_U_S_Senate_UAP_Hearing

object he presented to the U.S. Congress one month earlier. Is it the best anomaly AARO can present to the world? A cursory analysis suggests it was a balloon!¹⁵ In fact, Kirkpatrick confirmed that it

demonstrated no enigmatic technical capabilities and was no threat to airborne safety.

He admitted he has no more data beyond that to arrive at a conclusion, and he expects to gain insight when handling “similar objects ... [so] that we can then do a larger analysis...” Yes, Dr. Kirkpatrick, you might earn another master’s degree in balloon tracking for your CV!

Middle East, 2022: MQ-9 observed apparent spherical UAP via electro-optical sensors

UNRESOLVED ACTIVE-ARCHIVE

TRAJECTORIES PHOTOGRAPHY

- UAP characteristics and behavior consistent with other “metallic orb” observations in the region
- No demonstration of enigmatic technical capabilities and no apparent threat to airborne-asset safety
- Case in “active archive,” pending discovery of additional data
- AARO uses active-archive cases for trend and statistical analyses

The following slide he shared with UAPIST attempted to be pedagogical, with an example of UAP footage that was identified as three commercial aircraft after analysis (for the airborne observers, it was weird.) For those who firmly believe a pilot’s word is infallible, we should heed Kirkpatrick: “This is the kind of thing that can spoof and or provide misperception of both very highly trained pilots as well as sensors.” This statement is flawless. It aligns with the stance we have upheld for years, emphasizing the susceptibility of even the most skilled pilots and advanced sensors to misinterpretations in the face of UAP encounters.

Western United States: P-3 on training mission observed several equidistant UAP that it was unable to intercept


RESOLVED

TRAJECTORIES PHOTOGRAPHY


- Three UAP objects observed, apparently flying at high velocity
- Observing craft pursued but was unable to intercept
- Analyses of object geospatial positioning conclude the objects were significantly farther from the observer than originally estimated
- Apparent morphology changes result of sensor autofocus
- Analyses of air-traffic control data suggest objects likely commercial aircraft transiting known flight paths to/from major airports in the region
- Analyses being validated by AARO’s scientific

Another slide was supposed to show AARO's research on existing sensors against typical UAP objects. We think both the data and the explanation are quite confusing. Wondering if "NASA sensors and NOAA sensors ... if any of these Earth sensing satellites, any of these airborne platforms, any of these ground radars (whether it's FAA or other) can actually see these things," Kirkpatrick seems to conclude that a solution to this problem is through "augmenting with dedicated sensors that we've purposely built, designed to detect, track and characterize those particular objects. We will be then putting those out in very select areas for surveillance purposes." Remember the period in the 1970s when electronic 'UFO detectors' were popular? If AARO thinks that placing UAP sensors in delicate areas will help to detect UAP anomalies, they are totally wrong. A large expenditure might be made with uncertain results. Let us imagine that all anomalous UAP are North Korean aerial devices, with specific output signatures, radiation, shape, flight performances, etc. Then, yes, the precise discerning technology could track and identify Kim Jong Un's orbs. However, the nature of UAPs isn't singular but multiple. The origins are as diverse as the people reporting them, and our response to this problem should match this diversity.

AARO S&T Research


• LIVE


- Assessing existing sensors against typical UAP object
 - Commercial
 - Civil
 - NASA
- Augment with dedicated sensors for typical UAP object
- Partnerships with Academia
 - Exploring signatures to match data
 - Statistical analytic techniques
 - AI/ML analytic techniques
- Partnerships with labs to explore SOA fundamental physics of UAP observations, both current and historical reporting
- Interagency and Allied partnerships for calibration of U.S. and Allied capabilities
- Pattern of life analysis provides location prioritization for new collection



	Naturally Occurring Object	Balloons	Drones	Projectiles
IR	X	X	X	
Be	X	X		X
Radar			X	X

Finally, Dr. Kirkpatrick made some suggestions to UAPIST, many of which involve large-scale projects that would need a substantial budget. However, given that the panel is set to wrap up in less than 60 days and lacks specified funding, this poses a challenge! We won't delve into the specifics and character of these suggestions as they seem largely disproportionate in most instances.

Recommendations for NASA


• LIVE

Expanding NASA/AARO relationship with the new, imbedded NASA Science Advisor

- Unclassified crowd-sourced data following a prescribed format. Imagery from smartphones is of limited value given the resolution of the cameras, but NASA could take lead on evaluation crowd-sourced metadata.
- Large scale, ground based scientific instrument evaluation. NASA could examine the efficacy of using large scale scientific instruments used in such areas as radio science, radiological detection, gravimetric, and geomagnetic measurements for UAP detection. What are the theoretical limits of detection for objects similar to the parameterized UAP target package provided by AARO?

- Earth sciences satellites. All NASA & NOAA earth sensing satellites and data should be reviewed relative to the parameterized UAP target. NASA could lead a M&S effort, developing representative models of UAP, and then evaluating detection capability.
- Intentional vice coincidental collection. NASA/NOAA can explore techniques to integrate tip and cue collection capabilities across the scientific architecture (overhead & ground based) for turning on additional collection.
- Peer reviewed parameterization of advanced capabilities not yet engineered. NASA could lead the elevation of the scientific discourse on what potential form of advanced flight and propulsion capabilities would take on Earth and what signatures would be presented.

- Archived scientific anomalous data review. NASA could review astronomical and atmospheric data holdings against the parameterized UAP target package to look for anomalous signatures
- Distribution of sightings. NASA could review unclassified observations of alleged UAP and generate an analogue map to AARO's classified distribution map.
- Foreign partnerships. NASA could begin to build a robust scientific community of interest to review data, conduct analysis, and determine the value of unclassified data sources.

Panelist Nadia Drake posed a basic question on numbers: “how big is your database [and] how many years was it collected over?” Kirkpatrick provided interesting figures, also pre-announcing that a new AARO annual report will be released by August 1:

...we are now over 800 [650 last April] ... we roughly get ... anywhere from 50 to 100-ish new reports a month; now the reason we had such a big jump recently is because I got FAA’s data integrated in finally ... I would say that possibly really anomalous are less than single digit percentages of that total database so maybe two to five-ish percent.

This provides relevant information regarding both the flow of reports and the rate of unknown incidents. We have made Table I to display the double progress of AARO, both in data collection and in case analysis refinement, compared with three other external databases.

Source	Sample	Percent of unknowns
AARO -Preliminary Assessment (June 2021) ¹⁶	144	99% [1]
AARO -2022 Annual Report (January 2023) ¹⁷	510	47% [195 out of added 366]
AARO -Senate Hearing (April 2023) ¹⁵	650	~50% [“about half”]
AARO -NASA Public Meeting (May 2023)	Over 800	2% to 5%
Memo: GEIPAN, 2005-2014 ¹⁸	1,159	2.4% (0% high strangeness)
Memo: Canadian UFO Survey, 1989-2013 ¹⁹	14,617	1.1%
Memo: Argentine AF UAP Study, 1972-2022 ²⁰	304	0% (imaged sightings)

Table I. AARO growing database and shrinking percentage of unknowns.

The rate of incoming cases to AARO is ballooning (no pun intended). This is predictable, because of the incremental publicity the subject matter has been artificially receiving over the last few years. In future annual reports, the direct relationship between increased reporting and media exposure must be acknowledged when computing the monthly distribution of cases. Statistics will certainly show a “wave” for the period 2020-2023. It’s essential to note that this uptick in reporting is more attributable to increased media attention and AARO’s efforts to gather data from sources like the FAA, rather than a genuine surge in UAP activity.

¹⁶ V.J. Ballester Olmos, “The UAP Pentagon Report - Commented Abstract,”

http://fotocat.blogspot.com/2021_09_14_archive.html (scroll down to blog’s entry)

¹⁷ V.J. Ballester Olmos and Julio Plaza del Olmo, “The 2022 Annual Report on Unidentified Aerial Phenomena, A Review,”

https://www.academia.edu/95362778/The_2022_Annual_Report_on_Unidentified_Aerial_Phenomena_A_Review

¹⁸ GEIPAN, “Forte baisse des CAS D sur les 10 dernières années,” <https://www.cnes-geipan.fr/fr/actualites/baisse-cas-d>

¹⁹ Chris Rutkowski, “Le Canadian UFO Survey: de la recherche sans speculation,” in *De l’expérience à la science*, Yann Vadnais (ed.), GARPAN (Québec), 2021, page 507.

²⁰ Rubén Lianza, CEFAE/CIAE (Argentine AF UAP Study), <https://www.argentina.gob.ar/fuerzaaerea/centro-de-identificacion-aeroespacial>

Dr. Walter Scott, chief technology officer of Maxar in Westminster, Colorado, raised two important points: first, the established challenges in assessing distance, speed, and altitude, and second, the question of whether potential sensor and processing artifacts had been ruled out in the analysis of the “meatball” footage. Kirkpatrick affirmed that it was “a real object, absolutely.” Yet based on our calculations, it possessed the characteristics of a small-sized balloon.”¹⁵

Dr. Anamaría Berea, an Associate Professor of Computational and Data Science, asked about the type of AIML²¹ techniques AARO was utilizing. Kirkpatrick replied that they hadn’t implemented it yet but were currently investigating the potential application of language processing for pilot reports. He further expanded his answer, providing additional information on their approach to target recognition:

I can train a model to look for that thing and go back through all of our holdings and go give me how many of these you have, right, and then try to figure out what those are, right, so I have not put anything out there yet ... for active targeting in real time because I don't know exactly what I would train it to go look for ... I want to get more confidence on what we have before I go and do that, except for balloons.

When Mike Gold, the former NASA Associate Administrator for Space Policy and Partnerships, asked a couple of questions, he proudly mentioned—regarding international partnership—that “Spain just signed the Artemis Accords yesterday, increasing the membership to 25.” As the present review is signed by two Spanish investigators (one by birth and the other by adoption), we concur with the significance of this development for international collaboration in space research. Dr. Gold led for NASA, jointly with the U.S. Department of State, the creation and execution of the Artemis Accords.²²



²¹ Artificial Intelligence Markup Language.

²² <https://www.nasa.gov/specials/artemis-accords/index.html>

Gold brought up two key issues at the heart of the UAP problem. Firstly, when talking about anomalous phenomena, he asked “What makes it anomalous in your view? What is the phenomenology where you’re pulling those cases out and saying this is truly unexplained?” Secondly, on the alleged stigma around UAPs, he queried what NASA can do to help remedy the situation. Kirkpatrick first responded to the second “great question” by affirming that “the stigma has improved significantly over the years since the Navy first took this on some years ago.” Frankly, it’s hard to believe that a subject frequently featured on TV news and generating ~100 reports monthly suffers from censorship. He seems to blame “the leadership of all our buildings,” but wouldn’t the leaders of the Pentagon logically demand solid, tangible evidence instead? If he and his team members have faced harassment, as he complained, it does not originate from there. We feel it more likely proceeds from hardened UFO enthusiasts, who would be unwilling to accept any conclusion that doesn’t involve aliens visiting the Earth. Incidentally, for Kirkpatrick, the solution to this trouble is simply “to elevate this conversation, we need to have this conversation in an open environment.” It could be our European perspective, but we observe some naivety here.



Mike Gold.

The other substantial question received a significant response. We will quote it in detail (our emphasis, underlined):

what makes it anomalous to me: we actually developed some definitions on all of these things, we gave it both to the White House and to Congress, I think we've got some of that into law now, but essentially anomalous is anything that is not readily understandable by the operator or the sensor, so it is doing something weird whether that's maneuvering against the wind at Mach 2 with no apparent propulsion, or it's going into the water, which we have shown is not the case, that is actually a sensor anomaly ...

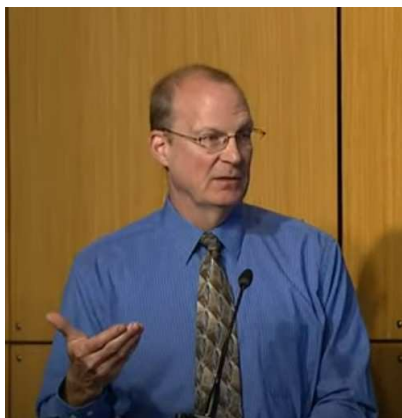
We now have a brand-new definition for UAP: an occurrence that the operator cannot explain and is beyond the range of the detection device. Yes, there can be many such incidents. But none of them are necessarily due to the coming of Martians. Especially interesting to us, having recently seen the release of many U.S. Navy UAP videos, is Kirkpatrick’s admission that the “transmedium” sphere descending to the ocean filmed

from the USS Omaha on July 15, 2019 in the warning area off the coast of San Diego²³ is only a “sensor anomaly”. The aforementioned quote contrasts with what seems to be a clear recording of a physical object moving from the air to the sea. We are eagerly awaiting any details in the forthcoming AARO report, particularly to confirm if this is the case being discussed.



USS Omaha UAP footage. Credit: Jeremy Corbell.

After the questioning session with Dr. Kirkpatrick concluded, it was followed by a presentation by Mike Freie, Technical Advisor in the FAA Air Traffic Surveillance Services Office. Mr. Freie provided detailed information about the Federal Aviation Administration and the extensive U.S. National Airspace Operations. “The FAA mission is primarily around safe and efficient control of manned aircraft,” Freie stated, before showing several slides filled with data and figures. Out of the two major categories of surveillance services, cooperative (onboard avionics working in conjunction with ground-based sensors) and non-cooperative (independent aircraft position determined by radar signal return), he focused his briefing on the latter category, as cooperative sensors are neither unknown nor anomalous. The latter category includes “drones and balloons and things of that nature”. For Freie, it was fundamental to show “what we can detect with respect to those non-banned, non-manned systems,” and gave a very illustrative lesson on FAA sensor locations (short-range and long-range radars), maps on radar line of sight coverage above different ground levels, etc. Essentially, the FAA's detection capability is based on a target’s altitude and size: “the detection of and the surveillance capability really largely depends in part to the target that we're talking about and the ability to surveil that target.”



Mike Freie.

²³ Mick West, “USS Omaha “Transmedium” Sphere Descending To the Sea,” <https://www.metabunk.org/threads/uss-omaha-transmedium-sphere-descending-to-the-sea.11711/>

Regarding drones and balloons, Freie provided interesting figures: 880,000 registered drones in the U.S., many tens of thousands operated on a daily basis by commercial operators (plus unknown figures for private drone operators). Another data point to consider for balloons: 192 Weather Service stations release balloons twice a day at 0100Z and 1200Z. This does not include the balloons launched by universities and hobbyists. Relevant to our discussion, Freie reported that air traffic controllers have historically reported UAP sightings or events “in the range of about three to five reports per month.” In response to a follow-up question, he noted, “[there are] 14,000 controllers, 45,000 operations any given day, 30 days in a month, it's a very small percentage.” (Our estimate: this equates to about one UAP sighting per 270,000 operations.)

Panelist Federica Bianco expressed concern about whether any “stigma” could have hindered reporting within the FAA, and whether reporting was now to be encouraged. Freie was crystal clear, there is an internal process to report UAP at work, and air traffic controllers are allowed to report: “I'm not aware of any specific stigma or limitations ... there is that process ... that we used and is what represents those numbers I talked [about].” The session adjourned and was set to resume after a 30-minute lunch break.

UAPIST chair, Dr. Spergel, led to a series of short presentations by members of the panel. First of these was Dr. Nadia Drake, who holds a PhD in Genetics from Cornell University. Currently a freelance science journalist, she covered the topic “Framing the Issue of UAP”. Initially, she remarked that the definition of UAP had changed during the seven months of their fact-finding process, from unidentified aerial phenomena (with aerial referring to events occurring in Earth's atmosphere) to anomalous (which includes space, air and undersea domains). She explained that the panel decided to continue focusing its recommendations on the aerial domain “because that is where the majority of sightings and events have occurred and also because we couldn't fully pivot to address the expanded scope of the new acronym.”

Naming UAP as “quite interesting ... objects in the sky, some of which are behaving rather peculiarly,” she noticed:

... the challenge that we have is that the data needed to explain these anomalous sightings often do not exist or are incomplete for generating a conclusive analysis, this includes eyewitness reports which on their own can be interesting and compelling but often lack the information needed to make definitive conclusions about an object's provenance ... we as a panel are thinking about the types of data that might add value to those reports ... As a corollary, to date in the refereed scientific literature there is no conclusive evidence suggesting an extraterrestrial origin for UAP.

Nadia, the daughter of Dr. Frank Drake, creator of the famous “Drake equation” on intelligent life in the universe, emphasized the importance of rigorous data collection and evaluation, as well as independent corroboration, and said:

... in science, skepticism is not a bias nor is it a bad word it is not our job to define Nature but to study it in ways that let Nature reveal itself to us regardless of how exciting or disappointing that reality might be.



Nadia Drake.

The intent of the NASA UAP panel, according to Dr. Drake, is to consider approaches to complement what AARO is doing. She compared this task to finding “a very slender needle in a very big haystack,” and was noting the magnitudes of airplane flights, drones in the air, and balloon launches, “[excluding] about 1.69 million recreational or model small uncrewed aircraft systems not controlled by air traffic control.” She stated:

... many discoveries in science are rooted and initially unexplained and bizarre phenomena, so by carefully scrutinizing the sky and by collaborating across disciplines we are likely to learn new things about our planet.

Panelist Dr. Paula Bontempi, who is the Dean of the Graduate School of Oceanography at the University of Rhode Island, spoke next. As former deputy director of NASA’s Earth Science Division in the Science Mission Directorate, she obviously advocated NASA’s potential role in UAP investigation: “NASA’s ... expertise in science and engineering may also help investigate and understand any of the reported phenomena.” She also added:

NASA research ... also supports a wide range of methods, this includes advanced data analysis, modeling, cutting edge computational, and data visualization tools, and these are all useful for investigating unexplained observations.



Paula Bontempi.

She emphasized that, in NASA research, discoveries and results are all publicly available:

NASA also has a long-standing public trust. This is essential to communicate those findings about phenomena to the public ... [and it is] very important to destigmatize the reporting and raise awareness of cultural and social barriers. To doing so, NASA has a unique strength in leveraging public and private partnerships that could result in new technologies that may be useful in observing and understanding reported phenomena.

She opted for a NASA UAP study, that's for certain, when she affirmed:

... given NASA's experience with long-term missions, long-term projects and scientific focus, the Agency is really well-equipped to handle the extensive and ongoing study of phenomena investigation that this likely requires.

Dr. Bontempi finished her speech inviting Nadia Drake to comment. And she insisted in an important concept:

I was struck by the phrase “not readily understandable” [by the operator and the sensor, for defining “anomalous”], I felt like that was actually doing a lot of work, so I think for our purposes we probably want to come up with a slightly more specific definition of what anomalous actually means.

Of course, this is basic. The more generic and ambiguous the definition of the object of study is, the worse for finding a solution. For those of us who have spent a lifetime researching UFO sightings, these exercises of the DoD and NASA, practically starting from scratch, are heartbreaking. Has all the accumulated know-how been lost? This is not how science typically operates. The accumulation of knowledge, like stacking brick upon brick, has been effective for centuries. Now these studies disregard international investigation and begin to propound the same queries and questions some of us were pondering 50 years ago. In this respect, among others, the work by Spanish Professor Ares de Blas should be known.^{24,25}

The next presentation was by panelist Dr. Federica Bianco, joint professor in the Department of Physics and Astrophysics at the University of Delaware. With a soft Italian accent, she spoke of “Data and Crowdsourcing.” Her speech started by stating that the current status of UAP data does not meet the standards required by the scientific method, including the FAIR²⁶ standards (findability, accessibility, interoperability, and reusability):

²⁴ Félix Ares de Blas, “On the Fallacy of the Residue,” in V.J. Ballester-Olmos & Richard W. Heiden (eds.), [The Reliability of UFO Witness Testimony](https://www.academia.edu/101922617/The_Reliability_of_UFO_Witness_Testimony), UPIAR, 2023, pp. 673-680.

https://www.academia.edu/101922617/The_Reliability_of_UFO_Witness_Testimony

²⁵ David G. López and Félix Ares de Blas, [El fenómeno OVNI. Análisis de 30 años de observaciones en España](https://www.academia.edu/42153967/EL_FENOMENO_OVNI_ANALISIS_DE_30_ANOS_DE_OBSERVACIONES_EN_ESPANA), 1982, https://www.academia.edu/42153967/EL_FENOMENO_OVNI_ANALISIS_DE_30_ANOS_DE_OBSERVACIONES_EN_ESPANA

²⁶ “FAIR Principles,” <https://www.go-fair.org/fair-principles/>

... their collection is inconsistent, it's inhomogeneous, it's uncalibrated. The data are poorly documented and largely incomplete, they're also not systematically retrievable, which causes a problem in automation of the analysis ... machine learning and AI cannot be applied until the data meet these standards.

Dr. Bianco advocated for the establishment of organized repositories, which would facilitate automated retrieval of data and metadata, as a necessary prerequisite for a systematic scientific approach to UAP studies. She also suggested the “anomaly detection” method, i.e., detecting rare and unusual signals in a dataset that is noisy and rich with known phenomena. These prospects are theoretically sound, but there are doubts about their successful application in a scenario where the signal data is non-uniform and cluttered (there does not exist a single UAP “phenomenon” that can appear out of the noise). Bianco’s insightful suggestions regarding data acquisition instruments or sensor-filled platforms for collecting images, sound, spectra, etc., face challenges due to the absence of a unique UAP model to be detected or calibrated. That is the core challenge with UAPs (P for phenomena).



Federica Bianco.

The next panelist to speak was Dr. David Grinspoon, a senior scientist at the Planetary Science Institute in Tucson. As an astrobiologist, his topic was “Relevant Observations Beyond Earth’s Atmosphere.” Realistically conceding that currently there’s no evidence suggesting an extraterrestrial source for UAPs, he posed the following questions:

is it a known or unknown natural phenomenon? Must it be technological? Is it known terrestrial technology? [and] whether observations which first appear to reveal extraordinary evidence actually justify making extraordinary claims.

He then hypothesized “if we do acknowledge an extraterrestrial source, however unlikely, as one possibility for UAPs, then these objects must have traveled through the solar system to get here.” It is all right as a theoretical option, but how unlikely? Up to zero probability? Are “flying saucers” (as UAPs were termed in the first wave of sightings back in 1947) really arriving here in their millions, as collected reports suggest? Have they been doing this for decades, crossing air lanes to astonish pilots, or landing for a few minutes to surprise farmers? Actual possibilities must also be possible, not only because of the “widespread (but by no means universal) belief that there are extraterrestrial civilizations

[based on] the vast numbers of exoplanets and the time scales of evolution and the possibility convergent evolution on different planets.” They should also account for practical factors such as distance, speed limits, and the absolute lack of evidence linking UFO cases to outer space.



David Grinspoon.

Dr. Grinspoon believes, “the idea that finding extraterrestrial artifacts in our own solar system is at least plausible, NASA is the lead agency for ... detecting objects in our solar neighborhood ... and it could leverage those capabilities to search for objects in space with anomalous motion, anomalous trajectories, unusual light curves anomalous, spectral signatures or other characteristics.” We concur that the SETI initiative should ideally be one of NASA's aims. If not NASA, then who else? However, the academic aspects of this search, which we all encourage, should be distinct from UAP studies. Otherwise, it could potentially fuel misguided beliefs held by some of the U.S. population regarding alleged concealment of evidence of alien life by the U.S. government. This is something that future sociology books will likely highlight as a major example of misinformation in the 21st century.

UAPIST aerospace engineer Dr. Karlin Toner, acting executive director of the FAA's Office of Aviation Policy and Plans, talked about “Reporting Challenges.” She started by addressing Dr. Drake's analogy of a small needle in a really big haystack, wondering if there is a way to “make that haystack smaller and that needle bigger.” She felt that “there are still barriers for people to report.” I do not know to what extent she is familiar with UFO literature since 1947, but if there is something you cannot assert is that information is not only abundant but excessive. There are millions of UFO reports from all over the world. Where is that barrier? There are two conceptual flaws here. Firstly, the abundance of UFO reports, this is the needle part of the equation. And secondly, the panelists' general ignorance of UFO claims. The search does not involve finding a single “needle,” rather it involves finding multiple “needles” of different sizes, weights, colors, and metals. Not only that, but there are also nuts, bolts, and nails in the same set.

Dr. Toner expressed the need to incentivize UAP reporting, assess the feasibility of crowdsourcing data, participate in conferences on UAP detection, and so on. This

enthusiasm is healed by listening to historical UFO information. She can expect a wealth of UAP data, including astronauts and pilot incidents, along with 80 years of both analog and digital images and films. If there is something that ufology does not lack is information of all types and sources.



Karlin Toner.

Dr. Joshua Semeter, professor of computer engineering and director of the Center for Space Physics at Boston University, talked next. He certainly proved to have done his homework. In an excellent presentation, he revealed his analysis of one of the infamous U.S. Navy UAP videos. His research on the so-called “Go Fast” footage confirmed the conclusions of other investigators about the role of parallax illusion in falsely attributing features to similar airborne UAP sightings.^{27,28,29}

Dr. Semeter acknowledged the fact that known multi-sensor videos from U.S. Navy aviators contained detailed contextual information such as ranging and infrared imaging information that permits the calculation of critical parameters. As an example, he used the video recorded by pilots deployed from the aircraft carrier USS Theodore Roosevelt on January 21, 2015, off the coast of Florida, “to illustrate the crucial role of ... scientific analysis to avoid misinterpretation.”

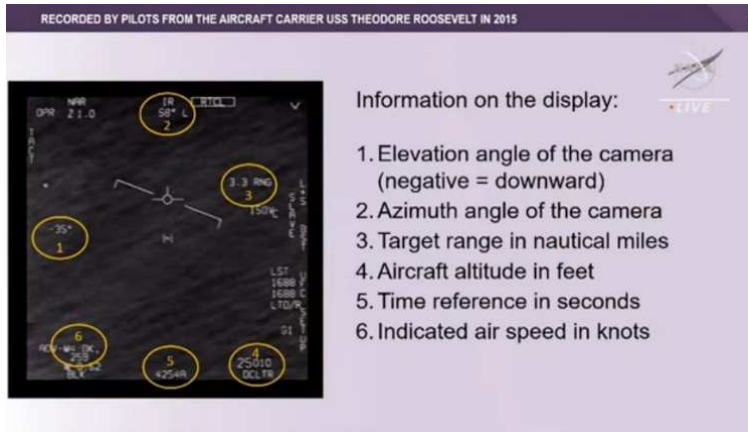


Joshua Semeter.

²⁷ Mick West, “Explained: “Go Fast” UFO Video - Not Low and Not Fast - Like a Balloon!,” <https://www.youtube.com/watch?v=PLYEQ0jNt6M>

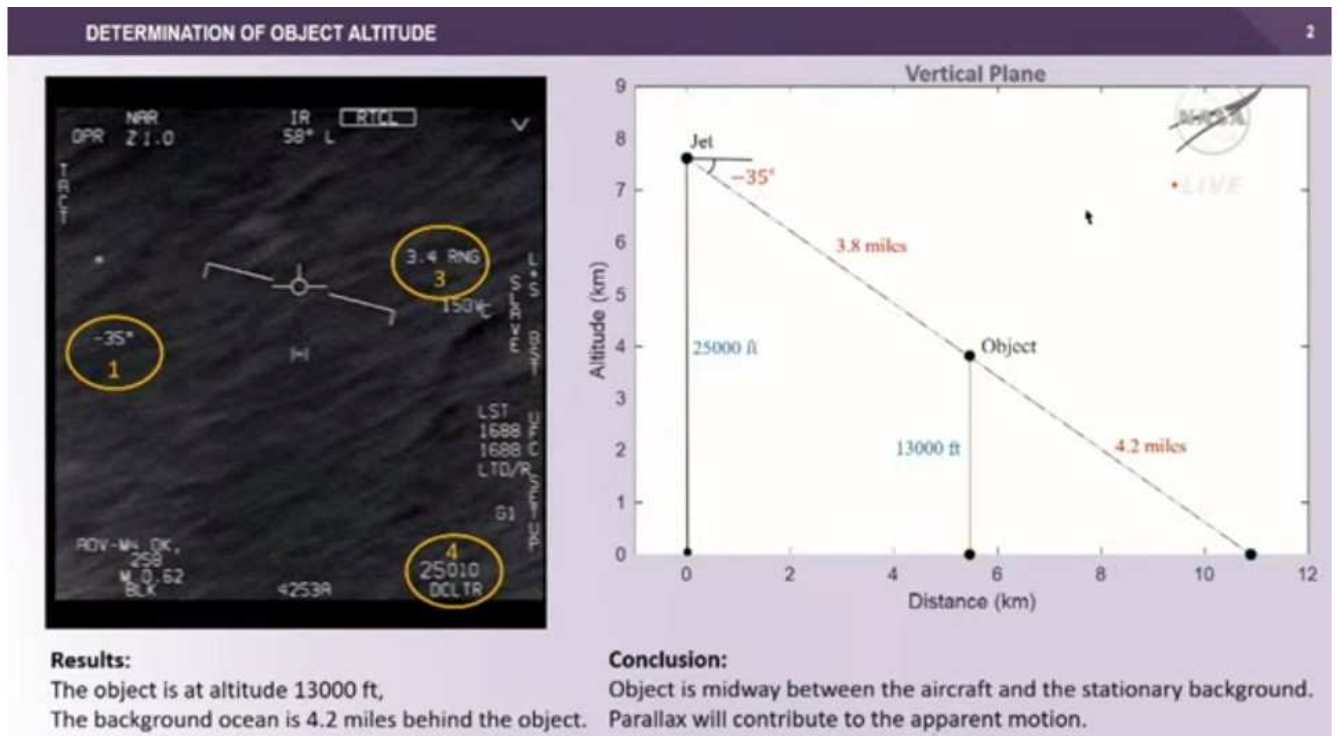
²⁸ Julio Plaza del Olmo, “Go Fast: El vídeo del Pentágono,” https://www.academia.edu/44249873/Go_Fast_El_v%C3%ADdeo_del_Pent%C3%A1gono

²⁹ Rubén Lianza, “Alleged UFO Captured by Infrared Camera from U.S. Customs & Border Protection Airplane Over Aguadilla, Puerto Rico,” http://www.ipaco.fr/EN_IFO_B_heart_130425.pdf

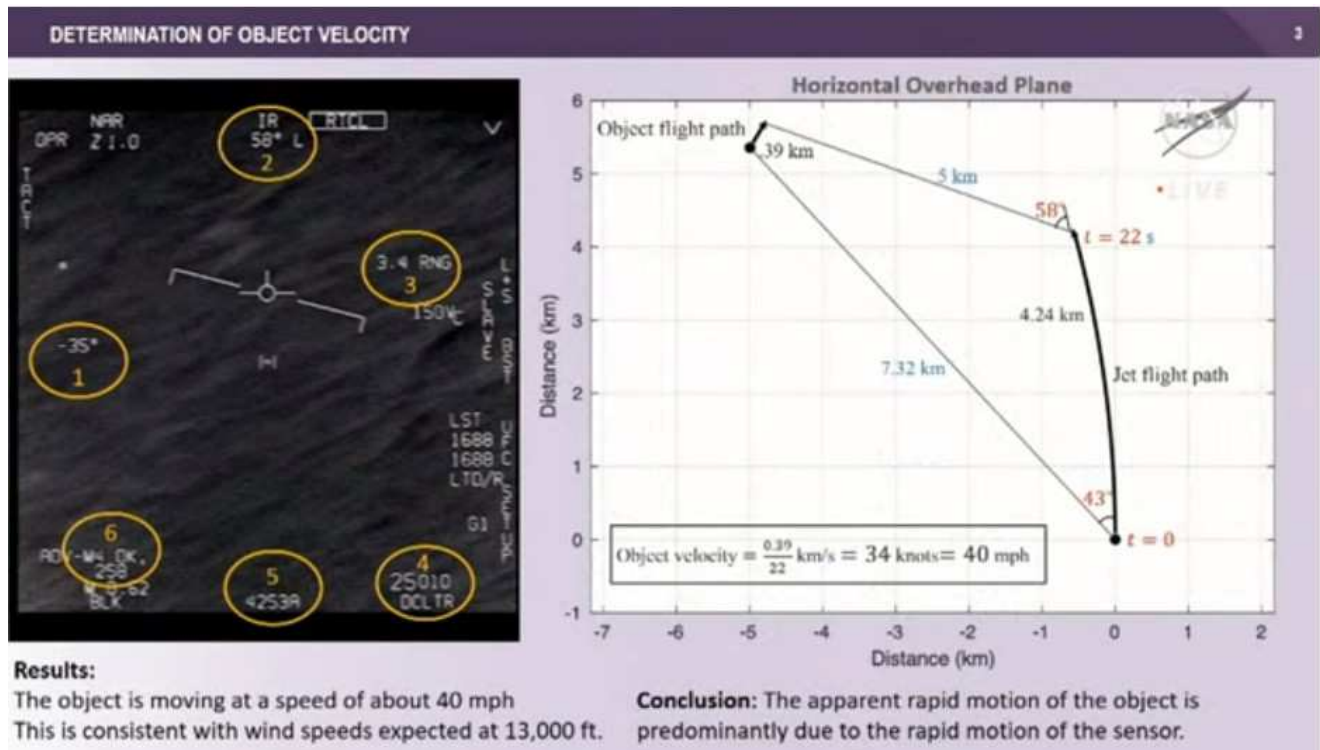


The video got the nickname “Go Fast” because it was said to be an object flying close to the surface of the sea and moving very rapidly. The FLIR display provided the needed data to calculate the altitude and velocity of this object, including (see above slide) (1) the elevation angle of the camera, (2) the azimuth angle of the camera, (3) the target range in nautical miles, (4) the aircraft altitude in feet, (5) the time reference in seconds, and (6) the indicated air speed in knots. An object flying very low and very fast? For Dr. Semeter:

... the object appears to be at about 13,000 feet ... midway between the jet and the ocean [and] the ocean that looks like it's right behind it, is actually 4.2 miles away ... this is our first indication that most of the apparent motion of the object is in fact due to the rapid motion of the sensing platform, which is about 430 miles per hour.



Extracted from the screen display it is known that the aircraft was banking about 15 degrees left. From this you can compute the radius of curvature of the flight and you can get the bearing in range to the target at two locations: “with known separation in time,” Dr. Semeter added, “you can figure out how far it moved, and in this case this object moved about 390 meters in 22 seconds and that corresponds to a velocity of just 40 miles per hour. That velocity is consistent with wind speeds at 13,000 feet.”



Prudently, “it’s not our task to conjecture what this object is,” evidently from low and fast it has become high and slow, thanks to scientific analysis. It was more than likely a balloon moving at wind speed. In conclusion: “The apparent rapid motion of the object is predominantly due to the rapid motion of the sensor.” Finally, Dr. Semeter noted

the importance of quantitative analysis. This example also serves to illustrate the kind of cognitive bias we have to contend with for UAPs recorded from unfamiliar perspectives.

This parallax illusion appears in many of the recent known military airborne UAP videos and it is a basic clue in the identification of allegedly anomalous flying objects. Furthermore, calibrating human observation is of utmost importance, as witness testimonies - whether from pilots or laypeople - are not always entirely reliable.¹³

In the questioning, Scott Kelly, former NASA astronaut, test and fighter pilot, commented how the environment both in atmospheric flight and space is very conducive to optical illusions. He gave a couple of examples. In one instance, while he was flying a *Tomcat*, he mistook a Bart Simpson balloon for a UFO. “Oftentimes in space,” he added, “I would see things ... really not behaving like it should ... it doesn’t have the trajectory of a satellite

or a planet on the back of the star field and every single time when I would look at it long enough I would realize that it was atmospheric lensing ... what I was looking at was actually flying behind the atmosphere and because of variations in the atmosphere it made the trajectory look like it wasn't going in a straight line ... it would turn in the other direction, [it] was always the case.” Continuing with anecdotes, he also recounted a story by his brother Mark, who, like him, is a former NASA astronaut and served as the commander of STS-124 in 2008.³⁰ When they were getting ready to close the payload bay doors of the Space Shuttle, they saw something in the payload bay. Was it a tool or a bolt and would they have to go and do a spacewalk to retrieve it? Mark Kelly grabbed his camera and took a picture of it. When they magnified the picture, they realized that it was actually the International Space Station, which was 80 miles away!

In his remarks, Dr. Gold called for a “permanent office within NASA to support this activity, albeit likely a modest one, and act as the open forward-facing counterpart to ... AARO ... I don't want all of our work to end up being in vain.”

Dr. Jennifer Buss, CEO of the Potomac Institute of Policy Studies in Arlington, spoke on “Initial Responses to Charge Elements.” Her intention was to draft a statement to answer eight questions that were provided to panel members when UAPIST was created. We will now list the questions and summarize Buss' answers to them (not fully verbatim).

QUESTION 1. What types of scientific data currently archived by NASA or other civilian government entities should be synthesized and analyzed prior to potentially shedding light on the nature and origins of UAP?

ANSWER. The data that we recognize was not collected for the purpose of identifying UAP ... even though there is an immense amount of data available it is hard to access, and the sensors that were used were not well calibrated for identifying anomalous phenomena.

QUESTION 2. What types of scientific data currently collected and held by non-profit companies should be synthesized and analyzed to potentially shed light on the nature and origins of UAP?

ANSWER. The study panel concluded that much of the input collected by these organizations is not considered scientific data in nature and that they do not contain unbiased information, is not repeatable and typically comes with eyewitness accounts which we've heard even today that there is hesitation in using only eyewitness accounts to recognize or identify UAP.

QUESTION 3. What other types of scientific data should be collected by NASA to enhance the potential for developing an understanding of the nature and origins of UAP?

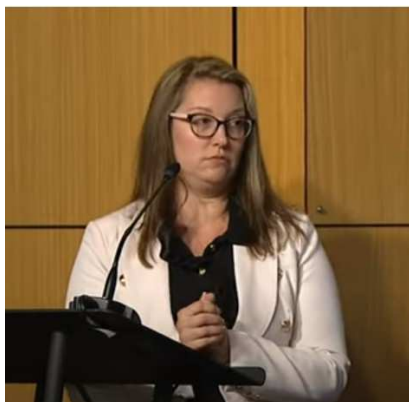
ANSWER. We've heard now from two of the panelists on some of the information that should be collected or the way that some of that data should be organized in a manner to make it available for people to analyze that information.

QUESTION 4. Which scientific analysis techniques currently in use could be employed to assess the nature and origins of UAP, which types of analysis techniques should be developed?

³⁰ <https://en.wikipedia.org/wiki/STS-124>

ANSWER. There are very few credible analysis techniques available to assess the nature and origins of UAP. The onset of artificial intelligence and automated analysis techniques shows promise of being able to do that in the future.

From our viewpoint, this perspective appears fundamentally flawed. For many years, skeptical UFO researchers have been able to identify even the strangest UFO incidents using current knowledge, technology, and software.³¹ Presently, artificial intelligence is fast becoming a revolutionary tool. However, in the realm of UFO information, it has proven to be significantly less effective. You can verify this by conducting your own test with ChatGPT!



Jennifer Buss.

Dr. Gold's subsequent contribution introduced a dose of hard realism into the debate, discussing the issue primarily as a source of frustration. Why so? We believe he steered the discussion in the right conceptual direction: "I think we're not looking for a needle in a haystack, we're looking for an anomaly in a haystack; we don't even know that we're looking for a needle, that it's just a discolored piece of hay ... I don't know what the phenomenology is ... we're looking for [something] anomalous, [but] what does that mean anomalous? ... we're starting from an almost impossible position if we don't know what we're looking for: is it a radiation signature?, is it something electromagnetic? ... we're talking about monitoring something that we don't even know what we're supposed to monitor." He clearly summarized this in his last open question: *what is the phenomena that we're looking for?* That question strikes at the very heart of the problem. Complex and at the same time simple. Unbiased investigators will come to understand that there is no concrete entity to monitor. Rather, they will encounter a vast array of alleged anomalies, each explained by different types of conventional causes.

In the ensuing discussion, Dr. Bianco objected, asserting: "you can find things that you don't know ... there is a lot of the algorithms in anomaly detection are really based on ... how what we know looks like, so that anything that doesn't look like that can be identified and spotted. We concur that algorithms may be beneficial for preliminary data screening.

³¹ M. Borraz and V.J. Ballester Olmos, *The Marfa Lights. Examining the Photographic Evidence (2003-2007)*, UPIAR, 2020, https://www.academia.edu/43589341/THE_MARFA_LIGHTS_Examining_the_Photographic_Evidence_2003-2007

However, merely stating that an “anomaly” is what both the eyewitness and the detection device overlooked is an oversimplification. We should establish a solid criterion for what is considered physically anomalous in our search. But this can be done if and only if you know the solution beforehand. Such a solution does not exist, primarily because there are no discernible anomalous principles at work.

QUESTION 5. What basic physical constraints can be placed on the nature and origins of UAP?

ANSWER. Jen Buss, with time running out, just referred to Dr. Kirkpatrick’s “trends” and Dr. Semeter’s presentation: “some of these are still in the realm of understanding, we just haven’t applied basic physics to understand what’s there what we have.” Right, we concur madam.

QUESTION 6. What civilian airspace data related to UAPs have been collected by government agencies and are available for analysis to (a) inform efforts to better understand the nature and origins of UAPs, and (b) determine the risk of UAPs to the national airspace?

ANSWER. As per Mike Freie’s presentation, we have a lot of civilian airspace data to start understanding the nature and origins of the UAP. Determining the risk, something that we don’t know could have a severe impact on pilots and their flight plan. Being able to identify what those are phenomena are will help de-risk air flight safety in the in the national airspace.

QUESTION 7. What current reporting protocols and air traffic management data acquisition systems can be modified to acquire additional data on past and future UAPs?

ANSWER. We’ve heard a lot of the reporting structures today. They can probably be adapted and improved, it’s up to us to discuss what those recommendations might be.

QUESTION 8. What potential enhancements to future air traffic management development efforts can be recommended to acquire data concerning future reported UAPs to assist in the effort to better understand the nature and origins of the UAPs?

ANSWER. Automatic filtering of the knowns, the tuning of those sensor platforms, multimodal spectrum collection, and time stamping or geo stamping each of those sightings.

There was a final general discussion chaired by Dr. Spergel who came back once more on the most repeated metaphor of the meeting. He said:

If you know the properties of hay very well and you can go through your haystack and say I don’t know what this is but it doesn’t look like hay, you don’t need to have a match filter looking for a needle in a haystack.

In terms of UAP research, the rationale should be as follows: UAPs will only be considered truly anomalous if new or different characteristics, distinct from all known manmade objects, natural phenomena, and biological entities, are found in UAP data. If this is what the NASA UAP panel has in mind, then we could not agree more.

Looking towards the future, Dr. Spergel noted that many have found the existing data dissatisfactory. He asked his panel: “what data would you want and how would you want to collect it.” Dr. Paula Bontempi expressed that they hadn't dedicated enough time and effort to anomaly hunting, and as such, she felt incapable of answering the question. She felt that they have not dedicated their time and effort to looking for anomalies, therefore she could answer the question. But Shelley Wright, who is an associate professor of physics at the University of San Diego's Center for Astrophysics and Space Studies, recommended that NASA convene a task force to look at its assets to calculate what current available data could provide insight into that, and specifically focus on the associated “frame rate” issue, which involves capturing fast, small objects with enhanced image resolution. For his part, Dr. Walter Scott, recognizing that current NASA resources could only detect “really big haystacks that are moving very slowly,” argued that existing data is indeed useful because it allows for a comprehensive characterization of the background, providing a better understanding of what any unusual occurrences might look like.



Shelley Wright.



Walter Scott.

The final section of this streaming meeting was scheduled to give responses to the “hundreds and hundreds” of queries posed by the public, which had taken the opportunity to submit online questions to the NASA panel. This was, in our view, the poorest part of the session. Not because of the interventions of panel members, who were always clever, but because of the sometimes extravagant, confabulatory, conspiratorial and speculative nature of some of the questions raised. They defined the mind set of UFO believers quite well. And we shouldn't forget that it is due to their pressures (their representatives in the media and in Congress) that the DoD, NASA, AIAA, and the Canadian Government are studying flying saucers, UFOs and UAP again.

Karen Fox (from NASA's office of communications) was in charge of bucketing all questions into a few manageable topics. We will summarize the group questions and replies. Participants asked about the type of data being used, whether multi-sensor data was included, and if the team was investigating objects performing anomalous maneuvers. They also asked if the team had access to photos and videos, and whether

interviews with military pilots had been conducted, among other inquiries. Dr. Spergel addressed that question, as follows:

... first and foremost, our goal here is ... to create a road map ... certainly we haven't not done a complete historical study on our archive. One of the things we wanted to do was learn what kinds of events have been reported, learn about the ones ... resolved and the ones that are unresolved, so we can best think about how in the future we can collect data, so that we can get more robust answers.

The next category of questions pertained to “transparency”—a term we might not use so generously. Inquiries included: What is NASA hiding and where are you hiding it? How much has been shared publicly? Has NASA ever cut a live NASA TV feed to hide something? Has NASA released all UAP evidence it has ever received? What about NASA astronauts? Given the tone of this set of questions, it needed a formal answer from NASA, so it was Dr. Daniel Evans who took a stab at that and replied:

... I really want to assure the public ... this agency is absolutely cast iron committed to openness and transparency and honesty and that commitment also extends to our live NASA TV feeds. They provide real-time footage from our various missions. To my knowledge NASA has never intentionally cut a live feed to hide anything (and that includes UAPs, of course). Sometimes there are interruptions to our feeds but that is simply because space is a complex place, there's a vast array of natural phenomena, human-made objects.

We know that hardcore ufologists will not believe the words of a NASA officer. Frankly, this is an uncomfortable reality. This is not a matter of evidence (show it if you have it!), it is just a question of faith. Science and faith cannot reconcile. To this accusation, former NASA astronaut Scott Kelly, speaking from his own experience of 20 years at NASA, said:

... no one, either officially or unofficially, have ever discussed or briefed us or had any kind of discussions about anything that would be considered a UAP or UFO or anything like that.

Astrophysicist Dr. Grinspoon contributed to the debate with a highly relevant thought regarding the culture of science:

Scientists by nature are intellectually rebellious. It's in our nature to question authority ... you don't just take someone's word for it, you try to discover the truth, and for that reason this question about what are the science overlords hiding, that's sort of written in a facetious way. But I just want to emphasize that there's no way that scientists could be trying to hide something ... if somebody told me to try to hide something, that would just increase my desire to bely that order ... and I think that's true of our community in general.

Can laypersons harboring beliefs in UFOs and aliens comprehend that? We think not, because one of the many problems inflicting ufology (uapism?) is that the criterion of

authority is not respected in this area. This is an unruly domain where every opinion holds equal weight. This is a pure, unscientific jungle that NASA UAP panelist will recognize soon.



Scott Kelly.

The third set of questions inquired whether NASA has been monitoring Earth's atmosphere or also studying bodies of water for UAP. Dr. Bontempi recalled that this independent study is to assess what observation platforms NASA possesses to potentially help evaluate and understand UAP from the unique vantage point of space and the atmosphere. She alluded to what Dr. Kirkpatrick stated: "to his knowledge, and I think to ours, there isn't anything that's been reported below the ocean surface."

The realm of UFO "encounters" is boundless. You can find whatever you can dream of. There are a number of alleged underwater UFO sightings on record as well. They are few and not well-documented, but classic UFO books have helped to reinforce the myth of UFOs coming out from the ocean, implying possible underwater stations. This literature is much closer to fiction than science, but, as we touched on before, the standard ufologist doesn't care about science and is attracted by the sensational.

The fourth batch of questions garnered responses from several panelists, each providing a unique perspective. It dealt with the darned concept of supposed stigmatization surrounding the study of UAP and how to solve it. First to comment was Karlin Toner (FAA) who indicated that the fact NASA has called this public panel together to look into this speaks volumes about transparency. "That's the first step in trying to really normalize the study of UAPs," she said. Dr. Mike Gold raised his recommendation that NASA participates in symposia and sponsors research as the NASA logo will help push back against the stigma. "It's important to do so not just for science and discovery but for national security [he recalled the recent Chinese balloon affair], we don't want this stigma to be a vulnerability that rival nations can take advantage of." Dan Evans also contributed, from the Agency perspective. Basically he said that NASA is encouraging open dialogue on UAP, it is committed to openness, and promotes a rigorous scientific inquiry. "I honestly believe—Evans affirmed—that this interagency approach will lend credibility to the study of UAPs." Well, you can say it louder but not clearer. If you decide not to believe in your country's experts, we think you have a problem.

We don't want to repeat arguments but the level, intensity or amplitude of this so-called stigma is tremendously overrated. All kind of citizens have been reporting and publicizing

UFO claims for decades in large numbers. Every kid of the planet can draw what a “flying saucer” looks like.

The following group of questions versed on who else is NASA currently working with. Dr. Jennifer Buss generally responded that NASA is partnering with other government and international agencies that are also collecting UAP data, though the specifics of what this entails remain unclear. Dr. Gold discussed the need for NASA to collaborate with the Department of Commerce in managing space traffic, by identifying potential UAPs but also in preventing space congestion. He underscored the importance of monitoring space debris, which poses a significant threat to satellite access. In his view, the data collected for UAP monitoring could also be useful in monitoring near-Earth objects and other threats. Dr. Federica Bianco recommended multi-site, multi-platform data collection and called for NSF, DoE, and NASA to collaborate, share data, facilities, and instruments, noting that many fields would benefit from this collaboration, including UAP studies. Dr. Karlin Toner attested to NASA’s robust engagement in research transfer with the FAA and explained how all Government agencies are supporting AARO on the UAP topic. Lastly, NASA officer Dan Evans corroborated all the statements and remarked, “Frankly, as a taxpayer, I would expect nothing less.” However, he also reminded us that, in contrast with the DoD’s aims, NASA’s perspective in this study “is a purely scientific one ... we collaborate, we consult ... a very good relationship ... a whole of government approach is absolutely the right one to take.”

It appears to us that they are reluctant to work with the data that has been collected so far. While we understand this perspective, it's important to remember that the ETH, a key hypothesis for UFOs, was founded on “evidence” accumulated since 1947. This evidence covers a broad spectrum of claims, from basic sightings of sky lights and close encounters to more intricate phenomena, such as radiation exposure, impacts on biological entities, effects on vegetation and soil, and even appearances of humanoid figures associated with landed objects, not to mention “abductions,” among other bizarre things. This claimed, unverified sort of “evidence” is what has fueled widespread belief. While analysis of past records could test this hypothesis, we recognize the valid goal of collecting new, superior, and objective data by scientists who have recently started studying UFO/UAP phenomena. Besides the expected high costs linked with the various proposed recommendations, it will likely take at least a decade to spontaneously generate the range of phenomena similar to those reported since 1947.

The sixth group of questions was boiled down to this: Is there proof that UAPs were produced by non-human intelligence? Dr. Anamaría Berea, bravely addressed this question: “... we are scientists and we follow the scientific process ... it's not a question that you can answer very quickly with yes or no, we follow the data, we formulate hypotheses, we test theories ... basically in the spirit of Carl Sagan ... extraordinary claims require extraordinary evidence, and we cannot make that kind of extraordinary claims at all.” It was followed by NASA panel’s chair Dr. David Spergel, who said:

I want to supplement that excellent answer by noting that we have not seen the extraordinary evidence in a sense to ... make the claim that we see something that is

evidence of non-human intelligence ... it would require extraordinary evidence and we have not seen that, I think that's important to make it clear. (Our emphasis.)



Anamaría Berea.



David Spergel.

Other questions addressed the budget that NASA allocates to this. NASA officer Dr. Evans split this question into two. First, the budget for this independent study. He said it is consistent with any other of their external review groups, of which the Science Mission directorate has 100-200 similar groups. Dr. Evans also stated that, given NASA has not instituted a program to study UAP, no dedicated budget currently exists for this.

Another question that encapsulated several similar ones was: has NASA discovered any aliens or extraterrestrial life? What would happen if the public were to come across extraterrestrial life? What would NASA do if extraterrestrial life were discovered? As NASA has programs on astrobiology, Dr. Spergel affirmed that a lot of what NASA is doing in its exploration of the solar system and beyond is focused on searching for life in any form. "There are lots of planets out there so there are lots of potential environments for life and I think one of the most fascinating questions is, do any of those planets host life?" He then answered this rhetorical question, stating:

Let's be clear about this: we haven't found life beyond Earth yet, but we're looking and we're looking for it in lots of different ways.

Dr. Grinspoon recalled the events of the 1990s when some scientists believed they had discovered fossils in a meteorite that came from Mars. When they were sure they were right there was a presidential press conference with President Clinton and NASA and it was a big public announcement. He assured: "That's what would happen if we discovered [life in the universe] ... we would very proudly and loudly let the public know about it."

The final word in this historic session was from chair Dr. Spergel who contended that "AARO is the lead agency for UAPs ... AARO's role is to be the primary source of understanding on these matters," while NASA's role can help eliminate the "stigma", draw more of the scientific community in, and provide standards of high data quality. He admitted being struck by the limited nature of the data, with most events having insufficient data, so he feared that in order to get a better understanding, data from multiple sensors was needed. We respectfully disagree: there is sufficient data for

anomalous-appearing UAP sightings. The key requirement is rigorous analysis of this existing data.

Disappointed? If you observe the world through the lens of the scientific method, you should not be. NASA, as a fundamental scientific organization in the United States, has been appointed to facilitate ideas and create a road map, and this is what they are doing. The report, due in August 2023, will elaborate on all these aspects, benefiting both the U.S. Government and the wider scientific community. The question of whether NASA should study UAP is up for debate. Based on our personal experience, accrued from decades of active UFO investigation, there are sound indications that UAP phenomena are, to a very high degree, an aggregate of visual or sensor misinterpretations. Consequently, we would not recommend duplicating studies, in order to prevent unnecessary expenditures of taxpayers' money. If the U.S. Congress has instructed the DoD to investigate UAP and the DoD has all the resources that a state can dedicate to any survey, they should be allowed to perform their job.

We would like to close by defining what exactly UAP means to us:

*The term "unidentified" represents a temporary classification, provisional in nature until adequate data permits clear identification.

*In the word "anomalous," the actual "anomaly" is largely unconfirmed, with the anticipation that a definitive anomaly may never be identified.

*Lastly, "phenomena," in the context of the cases currently under debate, refers to an immeasurable collection of non-patterned observations.

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Official NASA photograph of the UAP panel.