

National Aeronautics and Space Administration

Headquarters

Washington, DC 20546-0001



June 7, 2022

Reply to attn. of: Office of Communications

John Greenewald
Black Vault
27305 W. Live Oak Road
Castaic, CA 91384

Re: FOIA Tracking Number 22-HQ-F-00490

Dear John Greenewald:

This is our final response to your Freedom of Information Act (FOIA) request to the National Aeronautics and Space Administration (NASA), dated April 23, 2022, and received in this office on April 25, 2022. Your request was assigned the above-referenced tracking number. You seek:

ALL emails sent to/from, bcc'd or cc'd, NASA Science Associate Administrator Thomas Zurbuchen which contain the following keywords:

"INTERSTELLAR ORIGIN"

PLEASE INCLUDE ALL ATTACHMENTS TO EMAILS FOUND.

You may omit any newspaper articles that are publicly available, which do not contain commentary. Should the email have additional commentary including the article, I ask that you please include those as responsive to this request.

You can limit the scope of my request to records dated October of 2016 through to the date of processing this request.

In an email, dated May 13, 2022, you agreed to narrow your request to omit the public articles and reports from your response, which totals 28 pages. A copy of that email is enclosed for reference, and the title, author, and at least one external hyperlink to each article or report is included below:

Report of the Astronomy and Astrophysics Advisory Committee
National Science Foundation, March 15, 2018, 63 pages

https://www.nsf.gov/mps/ast/aaac/reports/annual/AAAC_Annual_Report_2017.pdf

Strategic Investments in Instrumentation and Facilities for Extraterrestrial Sample Curation and Analysis

The National Academies Press, 2019, 118 pages

<https://nap.nationalacademies.org/catalog/25312/strategic-investments-in-instrumentation-and-facilities-for-extraterrestrial-sample-curation-and-analysis>

Valuing Life-Detection Missions

Edwin S. Kite, Eric Faidos, and Tullis C. Onstott, February 23, 2018, 7 pages

(found in multiple places online)

http://geosci.uchicago.edu/~kite/doc/Kite_Gaidos_Onstott_Astrobiology_2018.pdf

Johannes Geiss' Investigations of Solar, Heliospheric and Interstellar Matter

George Gloeckler, Lennard A. Fisk, July 26, 2007

https://link.springer.com/chapter/10.1007/978-94-009-1782-8_24

A small and round heliosphere suggested by magnetohydrodynamic modelling of pick-up ions

Merav Opher, Abraham Loeb, James Drake, Gabor Toth, March 16, 2020, 10 pages

(2 different copies of same article were included)

<https://www.nature.com/articles/s41550-020-1036-0>

Density of Neutral Hydrogen in the Sun's Interstellar Neighborhood

P. Swaczyna¹, D.J. McComas¹, E. J. Zirnstein¹, J.M. Sokół, H.A. Elliott, M. Bzowski,

M.A. Kubiak, J. D. Richardson, I. Kowalska-Leszczynska, S.A. Stern, H.A. Weaver,

C.B. Olkin, K.N. Singer, J. R. Spencer, November, 2020, 24 pages

<https://ui.adsabs.harvard.edu/abs/2020ApJ...903...48S/abstract>

U.S. Space Force Releases Decades Of Bolide Data To NASA For Planetary Defense Studies

Sat News, April 10, 2022, 3 pages

<https://news.satnews.com/2022/04/10/u-s-space-force-releases-decades-of-bolide-data-to-nasa-for-planetary-defense-studies/>

Boeing Pulls Out Of Deal To Buy Embraer's Commercial Jet Division

[Boeing pulls out of \\$4.2 billion deal for Embraer's commercial unit - GulfToday](#)

COVID-19 Pandemic Confounds Boeing's Plan For Midyear Return Of 737 MAX

<https://www.wsj.com/articles/boeing-737-max-faces-new-source-of-delaycoronavirus-11587726000>

Boeing Delivers Final Block II Super Hornet To USN

<https://www.flightglobal.com/fixed-wing/boeing-delivers-last-block-ii-f/a-18e/f-super-hornet-to-the-us-navy/138070.article>

Airbus CEO Warns Employees Of Upcoming Difficulties For Company Amid COVID-19 Pandemic

<https://www.reuters.com/article/us-health-coronavirus-airbus/airbus-warns-staff-on-jobs-with-its-survival-at-stake-idUSKCN2280S3>

Airbus, Rolls-Royce End E-FanX Demonstrator Program Early

<https://www.flightglobal.com/air-transport/airbus-and-rolls-royce-cancel-e-fan-x-hybrid-electric-rj100-experiment/138067.article>

DoD Cuts Number Of Deficiencies In F-35

<https://www.airforcetimes.com/smr/hidden-troubles-f35/2020/04/24/the-pentagon-has-cut-the-number-of-serious-f-35-technical-flaws-in-half/>

Aerion Supersonic To Relocate Headquarters To Melbourne, Florida

<https://apnews.com/article/c21ad6baeffca81adb4bd6dde4dcb1c>

Lockheed Martin Has Issued \$256 Million In Accelerated Pentagon Progress Payments

<https://aviationweek.com/defense-space/supply-chain/lockheed-issues-411m-vulnerable-suppliers>

Progress Spacecraft Docks With ISS

<https://www.space.com/russian-progress-spaceship-launches-space-station.html>

Lockheed Martin Awarded \$5.8 Million Contract From DARPA For Blackjack Satellite Integration

<https://spacenews.com/lockheed-martin-wins-darpa-contract-to-integrate-blackjack-satellites/>

Lockheed Martin Awarded \$147.6 Million Contract Modification For Missile Launch System Parts. GovCon Wire

<https://www.govconwire.com/2020/04/lockheed-to-supply-mk-41-missile-launch-system-parts-under-148m-navy-modification/>

FCC Approves Viasat's Plan To Provide Connectivity In US Through Medium Earth Orbit Satellites

<https://spacenews.com/viasat-gets-fcc-approval-for-meo-constellation/>

ULA Raises First Stage Of Atlas 5 Onto Platform Ahead Of May 16 Launch

<https://spaceflightnow.com/2020/04/24/ula-begins-stacking-rocket-for-next-launch-of-u-s-military-spaceplane/>

ULA Helps Smaller Business In Supply Chain To Continue Spacecraft Production

<https://spacenews.com/to-keep-building-rockets-during-pandemic-ula-had-to-help-the-small-guys/>

Northrop Grumman Will Continue Testing OmegA After Successful Stage One, Two Tests

<https://spacenews.com/northrop-grumman-to-start-producing-hardware-for-omega-rockets-first-flight/>

Astronomers Find Group Of Asteroids From Outside Solar System

<https://www.cnn.com/2020/04/26/world/alien-asteroids-solar-system-scn-trnd/index.html>

CISA Task Force To Release Supply Chain Guidance In Alignment With CMMC Program
<https://www.nextgov.com/cybersecurity/2020/04/cisas-coming-supply-chain-guidance-align-pentagons-vendor-certification-program/164863/>

DJI Dispels Rumors Of Security Issues With Its UAVs Used In Social Distancing Enforcement
<https://dronelife.com/2020/04/23/dji-security-fears-debunking-the-rumors-again/>

COVID-19 Spurs FAA To Relax Restrictions On UAVs Operating BVLOS
<https://www.avweb.com/aviation-news/faa-responds-quickly-to-covid-drone-waiver/>

AIAA Announces Winner OF Design/Build/Fly Competition
<https://www.aiaa.org/news/news/2020/04/24/aiaa-announces-design-build-fly-winners>

NASA Announced Efforts To Support COVID-19 Pandemic Fight, Including Development Of Ventilator
<https://executivegov.com/2020/04/nasa-announces-new-developments-to-combat-covid-19-pandemic-jim-bridenstine-quoted/>

NASA Safety Panel Says SpaceX's May 27 Launch Is Feasible
<https://spacenews.com/safety-panel-concludes-may-launch-of-commercial-crew-test-flight-is-feasible/>

Two Lockheed Martin F-35 Aircraft Arrive At Alaskan Air Force Base
<https://www.ainonline.com/aviation-news/defense/2020-04-23/us-air-force-f-35-fighters-arrive-alaska#:~:text=Two%20Lockheed%20Martin%20F-35As%20touched%20down%20at%20Eielson,the%20354th%20Fighter%20Wing%20%28FW%29%20with%20the%20type.>

Russia Prepares For Friday Launch Of Soyuz Spacecraft To Resupply ISS
<https://blogs.nasa.gov/spacestation/2020/04/page/2/#:~:text=Russia%E2%80%99s%20next%20cargo%20craft%20to%20resupply%20the%20station,to%20launch%20on%20Friday%20at%209%3A51%20p.m.%20EDT.>

Air Force Plans To Task Security Researchers With Hacking A Satellite At This Year's Def Con
<https://www.airforcemag.com/the-air-force-challenged-hackers-to-break-into-a-dod-satellite/>

USAF Chief Of Staff Defends Advanced Battle Management Systems After GAO Report
<https://aviationweek.com/defense-space/sensors-electronic-warfare/usaf-chief-defends-abms-strategy-after-critical-gao-report>

Aviation Week Webinar To Feature AIAA President As Panelist
<https://www.aiaa.org/events-learning/aiaa-webinars>

Virgin Orbit To Go Public Through \$3.2B Merger, Offer Earth-Observation And IoT Satellites

<https://www.satellitetoday.com/business/2021/08/23/virgin-orbit-to-go-public-in-spac-deal-at-3-2b-valuation/>

Uganda Airlines Cleared To Operate A330-800s

<https://furtherafrica.com/2021/08/22/uganda-airlines-gets-all-clear-to-fly-its-rare-airbus-a330-800s/#:~:text=Uganda%20Airlines%20has%20gained%20the%20all-clear%20from%20regulators,same%20name%20that%20operated%20between%201977%20to%202001.>

AirBaltic Yet To Decide On Further A220 Orders

<https://aviationweek.com/air-transport/airlines-lessors/airbaltic-yet-decide-30-a220-options>

Eve Urban Air Mobility Signs Deal With Ascent Flights Global

<https://evtol.com/news/eve-ascent-strengthen-urban-air-mobility-partnership/>

Embraer Expands Northeast US Service Center Capabilities

<https://www.ainonline.com/aviation-news/business-aviation/2021-08-23/embraer-expands-ne-service-center-network-capabilities>

Feldman Appointed As New Boeing SE Asia President

<https://www.travelnewsasia.com/news21/238-BoeingSingapore.shtml>

Russian Aerospace Industry Reassesses R&D Path To Supersonic Transport

<https://aircraft.ainonline.com/aviation-news/air-transport/2021-08-23/russia-embarks-new-rd-path-supersonic-transport>

Deutsche Aircraft Prepares Workforce For Hydrogen-Powered Aircraft

<https://aviationweek.com/mro/workforce-training/new-partnership-seeks-prepare-mro-workforce-hydrogen-powered-aircraft#:~:text=Deutsche%20Aircraft%20is%20beginning%20efforts%20to%20train%20future,cooperation%20agreement%20with%20Part%20147%20maintenance%20training%20organization>

Boeing Secures \$487M Contract For Apache Helicopter Tech Support

[Boeing Awarded \\$487M to Engineer Army Apache Attack Helicopters - GovCon Wire](#)

Copa Airlines To Retrofit 737NGs With New Wheels And Brakes

<https://aviationweek.com/mro/aircraft-propulsion/copa-airlines-upgrade-737ng-wheels-brakes>

Astronaut's Medical Issue Delays Spacewalk

<https://www.military.com/daily-news/2021/08/24/astronauts-undisclosed-minor-medical-issue-delays-spacewalk.html>

Collins Aerospace To Provide Life Support For Privately Operated LEO Outpost
<https://spacenews.com/collins-aerospace-to-provide-life-support-for-privately-run-leo-outpost/>

Dust Mixed Into Mars Snow, Could Melt Into Water
<https://www.cnet.com/science/mars-snow-is-dusty-and-might-even-melt-into-liquid-water/>

Millennium Space De-Orbited Satellite With Tethers Unlimited Device
<https://spacenews.com/millennium-space-in-an-experiment-de-orbited-a-satellite-in-eight-months/>

Musk Says 100,000 Starlink Terminals Shipped
<https://www.cnbc.com/2021/08/23/elon-musk-spacex-has-shipped-100000-starlink-terminals.html>

Einstein Ring Spotted By Hubble Space Telescope
<https://todayheadline.co/stunning-einstein-ring-is-spotted-by-the-hubble-telescope-65-million-light-years-from-earth-daily-mail/#:~:text=August%2023%2C%202021%20in%20Tech%200%20Hubble%20Space,Einstein%20Ring%20was%20spotted%203.4%20billion%20light-years%20away>

ATLAS Comet Had Long History With Earth
<https://www.cnn.com/2021/08/23/world/comet-atlas-parent-scen/index.html>

Ispace Unveils New Lunar Lander Design
<https://spacenews.com/inspace-unveils-new-larger-lunar-lander/>

Space Economy Grows Despite Pandemic
<https://spacenews.com/space-report-2021-space-symposium/>

More Than Half Of The Objects In Oort Cloud Speculated To Be Of Interstellar Origin
<https://www.dailymail.co.uk/sciencetech/article-9918987/More-half-objects-edge-solar-interstellar-space.html>

NASA Tests Vibration Modes Of SLS
<https://executivegov.com/2021/08/nasa-tests-vibration-modes-of-sls-rocket/#:~:text=NASA%E2%80%99s%20Florida-based%20Kennedy%20Space%20Center%20is%20now%20testing,safely%20control%20flight%2C%20the%20space%20agency%20said%20Friday.>

NASA Grants Psionic Rights To Lidar Tech
<https://executivegov.com/2021/08/nasa-licenses-3d-lidar-technology-to-psionic/>

Britain Pursues New Satellite Navigation System

<https://spacenews.com/britain-charts-a-new-course-for-satellite-navigation/#:~:text=The%20British%20government%20nonetheless%20embarked%20on%20initial%20plans,technologies%20needed%20to%20develop%20an%20independent%20navigation%20system.>

High Seas Model To Solve Space Traffic Issues

<https://www.technologyreview.com/2021/08/23/1032386/space-traffic-maritime-law-ruth-stilwell/>

Cybersecurity Group Is On Aviation's Front Lines Against Hackers

<https://www.travelweekly.com/Travel-News/Airline-News/Aviation-front-lines-against-cybercrime>

FAA To Review Boeing Safety Measure Complaints

<https://www.wsj.com/articles/faa-to-review-boeing-employee-reports-of-pressure-over-safety-issues-11629773352>

Authorities Warn About Flying Over Los Alamos National Laboratory

<https://abcnews.go.com/Technology/wireStory/us-authorities-warn-flying-drones-national-lab-79609054>

Envoy Air E175 Collided With UAV During Departure From Chicago O'Hare

<https://www.flightglobal.com/safety/envoy-e175-struck-drone-during-climb-out-from-chicago-ohare/145184.article>

Chinese Astronauts Complete Spacewalk Outside Tiangong Station

<https://www.cnn.com/2021/08/20/china/china-tiangong-second-spacewalk-intl-hnk-scli-scn/index.html>

Zhurong Mars Rover Completes Initial Mission

<https://www.nbcnews.com/science/space/china-s-mars-rover-completes-primary-mission-continues-explore-red-n1277363>

CMMC Board Chief Talks eMASS

<https://fedciv.g2xchange.com/fcw-cmmc-board-chief-talks-assessors-it-staff/>

Pentagon Activates CRAF To Aid Evacuation

<https://www.cnbc.com/2021/08/22/biden-administration-activates-civil-reserve-air-fleet.html>

FAA Audio Details Police Helicopter Chase Of UAV

<https://www.aiaa.org/news/industry-news/2021/08/23/faa-audio-details-police-helicopter-chase-of-uav>

Boeing Downgrades Pending Order Backlog

<https://apnews.com/article/russia-ukraine-business-air-lease-corp-europe-4a90106782c2aca90cae2f5bcd2b5a5>

Boeing 737 Delivery Rate Increases

<https://aviationweek.com/aerospace/boeing-737-delivery-pace-picks-remains-behind-2022-target>

Spirit AeroSystems To Expand Aftermarket Footprint

<https://aviationweek.com/mro/aircraft-propulsion/spirit-aerosystems-fix>

Airbus Invests In Bcomp

<https://www.businesswire.com/news/home/20220405005479/en/Airbus-Ventures-Invests-in-Swiss-Cleantech-Startup-Bcomp>

Airbus Defends Russian Titanium Imports, Urges European Leaders To Cease Sanctions

<https://www.reuters.com/business/aerospace-defense/airbus-accelerates-hunt-alternative-titanium-supplies-2022-04-12/>

Amentum Secures DHS Contract For Uncrewed Systems Defense

<https://executivegov.com/2022/04/amentum-provides-unmanned-system-research-and-manufacture-under-dhs-task-order/>

Akima Logistics Awarded US Air Force Technical Support Contract

<https://www.akima.com/akima-awarded-385m-logistics-contract-by-u-s-air-force/>

Akima Logistics Awarded US Air Force Technical Support Contract

<https://executivegov.com/2022/04/akima-logistics-services-awarded-109-7m-usaf-contract-for-academy-aircraft/>

FlyExclusive Orders 30 CJ3+ Aircraft

<https://aircraft.ainonline.com/aviation-news/business-aviation/2022-04-06/flyexclusive-purchase-30-citation-cj3-twinjets#:~:text=Exclusive%20Jets%2C%20operating%20as%20flyExclusive%2C%20has%20entered%20an,CJ3%2B%20light%20twinjets%2C%20the%20Wichita%20airframer%20announced%20today.>

Wisk, Skyports Create Autonomous eVTOL Concept

<https://skyports.net/2022/04/wisk-and-skyports-partner-to-define-autonomous-aam-infrastructure-operations/#:~:text=Wisk%20and%20Skyports%20are%20defining%20autonomous%20eVTOL%20vertiport,supporting%20the%20autonomous%20operations%20needed%20for%20long-term%20success.>

US Air Force Takes Big Data Approach To Logistics

<https://www.nationaldefensemagazine.org/articles/2020/9/15/air-force-wants-big-data-technologies-for-strategic-airlift>

Prestige Aviation Orders 100 EH216s From EHang

<https://www.aiaa.org/news/industry-news/2022/04/13/prestige-aviation-orders-100-eh216s-from-ehang>

Spirit AeroSystems To Supply Nacelles, Engines For B-52 Refurbishment

<https://investor.spiritaero.com/news-presentations/news-details/2022/Boeing-Selects-Spirit-AeroSystems-to-Support-B-52-Commercial-Engine-Replacement-Program/default.aspx>

Regent's WIGs On Path To Maritime Certification

<https://aviationweek.com/aerospace/advanced-air-mobility/sea-skimming-regional-transport-track-maritime-certification>

LaunchPoint Unveils Hybrid-Electric Power System

<https://aviationweek.com/aerospace/advanced-air-mobility/launchpoint-introduces-hybrid-electric-propulsion-family#:~:text=LaunchPoint%20is%20targeting%20its%20hybrid%20power%20system%20family,been%20unveiled%20by%20startup%20LaunchPoint%20Electric%20Propulsion%20Solutions.>

Air France-KLM To Order Up To Eight Airbus A350F Aircraft

<https://www.airbus.com/en/newsroom/press-releases/2022-04-air-france-klm-confirms-order-for-four-a350f>

Safran Electrical & Power To Partner With AURA AERO On Electric Aircraft Propulsion

<https://www.asdnews.com/news/aviation/2022/04/08/safran-work-with-aura-aero-architecture-electric-propulsion-systems-integral-era-aircraft#:~:text=Safran%20Electrical%20%26%20Power%2C%20world%20leader%20in%20aircraft,training%20aircraft%20and%20the%20ERA%20%28Electric%20Regional%20Aircraft%29.>

Pelita Air Services Receives First Two A320s

<https://aviationweek.com/air-transport/airlines-lessors/indonesias-pelita-receives-a320s-prepares-scheduled-service#:~:text=April%2012%2C%202022%20Credit%3A%20Pertamina%20SINGAPORE%20%80%95Jakarta-based%20Pelita%20Air,and%20will%20undergo%20local%20certification%20prior%20to%20operation.>

India Grounds 90 Pilots After Problems Found With Boeing 737 Simulator

<https://www.msn.com/en-us/travel/news/boeing-737-max-simulator-glitch-leaves-90-indian-pilots-grounded/ar-AAWa3Aw>

NASA Officials Defend Modified SLS Countdown Test

<https://spacenews.com/nasa-defends-decision-to-proceed-with-modified-sls-countdown-test/>

Starship, SLS Could Supercharge Space Science

<https://www.scientificamerican.com/article/spacexs-starship-and-nasas-sls-could-supercharge-space-science/>

AFRL Completes Testing Of Non-Toxic Prototype Spacecraft Thrusters

<https://executivegov.com/2022/04/afrl-finishes-prototype-testing-of-non-toxic-propellant-spacecraft-thruster/>

Hubble Telescope Discovers Largest Comet Nucleus Yet

<https://www.nasa.gov/feature/goddard/2022/hubble-confirms-largest-comet-nucleus-ever-seen>

UK To Build SKA “Brain” Software

<https://www.bbc.com/news/science-environment-61065698>

NASA Tests New Water-Cooled Spacesuits

<https://www.ndtv.com/world-news/nasa-tests-spacesuits-with-new-cooling-system-to-save-astronauts-from-moon-temperatures-2887379>

Astra Sells Electric Thrusters To LeoStella

<https://spacenews.com/astra-wins-order-for-electric-thrusters-from-leostella/>

NASA Displays Psyche Spacecraft

<https://www.nasa.gov/feature/jpl/nasa-shows-off-psyche-spacecraft-to-media>

CNET News Interviews Astronauts Anne McClain, Christina Koch

<https://www.cnet.com/science/space/iss-astronauts-on-busting-barriers-and-space-smelling-like-burnt-metal-toast/>

Milky Way’s Galactic Bones Produce Own Magnetic Fields

<https://www.livescience.com/random-magnetic-fields-in-galactic-bones>

Scientists Find “Galactic Spiderweb”

<https://www.space.com/galactic-spiderweb-hungry-black-holes-image>

Jacobs Contracted For NASA Ground Test Facility Management

<https://www.nasa.gov/press-release/nasa-awards-contracts-for-aerospace-testing-and-facilities-operations>

Astranis Upgrades Small Satellites, Adding A Year To Their Operational Lives

<https://spacenews.com/astranis-adds-extra-year-of-life-to-small-geo-satellite-design/>

Solarium Commission Co-Chairs Urge Biden To Maintain Cybersecurity Authorities
<https://executivegov.com/2022/04/solarium-commission-co-chairs-ask-biden-to-retain-cyber-authorities-in-2018-memo/>

Viasat Cyber Attack Exposed Vulnerabilities In Ground Terminals, Satellite Supply Chain
<https://www.satellitetoday.com/cybersecurity/2022/04/11/experts-say-viasat-cyber-attacks-exposed-ground-terminal-satellite-supply-chain-vulnerabilities/>

Hack-a-Sat 3 Begins, Includes \$50K Cash Prize For Winner
<https://www.electronicweekly.com/news/afri-opens-hack-sat-satellite-hacking-competition-2022-04/>

Fate Of Mask Mandate For Public Transportation Remains Unclear
<https://arstechnica.com/science/2022/04/fate-of-travel-mask-mandate-in-limbo-as-cdc-decides-whether-to-appeal/#:~:text=For%20now%2C%20the%20federal%20mask%20mandate%20for%20transit,buses%2C%20subways%2C%20taxi%2C%20rideshares%2C%20and%20in%20transit%20hubs.>

Putin: Sanctions Will Not Curtail Russia's Lunar Program
<https://www.wsj.com/articles/putin-vows-russia-will-return-to-moon-despite-western-sanctions-11649764616>

NASA Requests \$26B Budget For 2023
<https://spacenews.com/white-house-requests-26-billion-for-nasa-for-2023/>

US Service Branches Ask For Additional Aircraft
<https://www.flightglobal.com/fixed-wing/us-services-ask-congress-for-additional-aircraft-in-unfunded-priorities-reports/148249.article>

Liro Liu New FAA Aircraft Certification Service Executive Director
<https://www.reuters.com/business/aerospace-defense/us-faa-names-new-aircraft-certification-director-2022-04-08/>

Hartsfield-Jackson Busiest Airport In The World In 2021: Eight Of Top 10 Located In US
<https://www.businessinsider.com/atlanta-again-tops-list-of-busiest-airports-in-the-world-2022-4>

Meteorite That Struck Earth's Atmosphere In 2014 Was Interstellar
<https://www.npr.org/2022/04/14/1092869771/interstellar-meteor-hit-earth-in-2014>

BOC Aviation Orders 80 A320neo Aircraft
<https://www.airbus.com/en/newsroom/press-releases/2022-04-boc-aviation-orders-80-a320neo-family-aircraft>

Alaska Airlines Faces Acute Pilot Shortage

<https://www.adn.com/alaska-news/aviation/2022/04/09/travel-chaos-from-pilot-shortage-just-part-of-alaska-airlines-headaches/>

Neptune Exhibits Unexpected Cooling Trend

<https://www.space.com/neptune-cooling-down-temperature-mystery>

O'Brien Selected As New Joint Staff CIO

<https://www.nextgov.com/technology-news/2022/04/air-force-cyber-lead-selected-serve-joint-staff-cio/365430/>

European Commission Approves Parker Hannifin's Takeover Of Meggitt

<https://www.insidermedia.com/news/midlands/european-commission-approves-proposed-meggitt-acquisition#:~:text=The%20European%20Commission%20has%20approved,in%20favour%20of%20the%20deal.>

Argonne National Laboratory, NASA Publish Paper On AI Simulations For Hypersonic Aircraft Propulsion Systems, Presented At AIAA SciTech Forum

<https://executivegov.com/2022/04/argonne-nasa-research-applies-ai-to-hypersonic-engine-simulations/>

Best Mobile Apps For Identifying Orbiting Satellites, Iridium Flares

<https://www.space.com/41678-spotting-identifying-satellites-best-mobile-apps.html>

In response to your request, we conducted a search of NASA's Office of Information Technology using the search terms "INTERSTELLAR ORIGIN".¹ That search identified records responsive to your request. We reviewed the responsive records under the FOIA to determine whether they may be disclosed to you. Based on that review, this office is providing the following:

14 page(s) are released in full (RIF);²

14 page(s) are released in part (RIP);

8 page(s) not provided were referred to another entity.

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."

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

² All page counts are approximate numbers.

5 U.S.C. § 552(b)(5). Courts interpret Exemption 5 to incorporate three primary privileges: the attorney work-product privilege, the attorney-client privilege and the deliberative process privilege. NASA invokes the deliberative process privilege.

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

Exemption 6, 5 U.S.C. § 552(b)(6)

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

Referral

Additionally, we referred 11 pages to U.S. Space Force. U.S. Space Force will process those pages under the FOIA and respond to you directly. Should you wish to contact that entity, their information is available at the following website: <https://www.compliance.af.mil/>.

Fees

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

Appeal

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

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

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

Assistance and Dispute Resolution Services

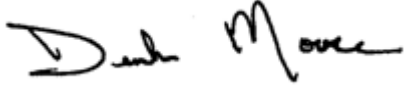
If you have any questions, please feel free to contact me at derek.m.moore@nasa.gov or (202) 358-2681. For further assistance and to discuss any aspect of your request you may also contact:

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

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

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

Sincerely,


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

Derek Moore
Government Information Specialist

Enclosure(s)

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>**

Original view

1 page

General Shaw,

Thank you for your memo of 1 March 2022, conveying information (b) (5)

[REDACTED]. This

would make (b) (5)

We appreciate (b) (5)

[REDACTED]. I believe (b) (5) [REDACTED]. I look forward to our future work together.

Thomas Zurbuchen, PhD
Associate Administrator
Science Mission Directorate

Re: [EXTERNAL] RE: Confirmation of Interstellar Object

From: Petree, Kirsten D. (HQ-DA030) <kirsten.petree@nasa.gov>
To: Zurbuchen, Thomas H. (HQ-DA000) <thomas.h.zurbuchen@nasa.gov>
Sent: March 5, 2022 10:54:24 AM EST
Received: March 5, 2022 10:54:26 AM EST

I'll talk with Lindley - he's may know.

On: 05 March 2022 09:09, "Zurbuchen, Thomas H. (HQ-DA000)" <thomas.h.zurbuchen@nasa.gov> wrote:

FYI - not sure who his staff is

Begin Forwarded Message:

Referred to U.S. Space Force



From: Zurbuchen, Thomas H. (HQ-DA000) <thomas.h.zurbuchen@nasa.gov>

Sent: Friday, March 4, 2022 3:19 PM

To: SHAW, JOHN E Lt Gen USSF USSPACECOM/DCOM (b) (6) @spaceforce.mil>; THOMPSON, DAVID D Gen USSF HAF AF/VCSO (b) (6) @spaceforce.mil>; WHITING, STEPHEN N Lt Gen USSF SPOC SpOC/CC (b) (6) @spaceforce.mil>; MOZER, JOEL B SL-00 USSF HQSF SpOC/CTIO/STR (b) (6) @spaceforce.mil>; COSTA, LISA A SES USAF HAF AF/USSF/CTIO (b) (6) @spaceforce.mil>; Johnson, Lindley (HQ-DG000) <lindley.johnson@nasa.gov>; (b) (6) @ (b) (6) .gov
Cc: LEONARD, BROOK J Maj Gen USAF USSPACECOM JFSCC/J0CS (b) (6) @usspacecom.mil>; Plumb, Thomas J (HQ-TA000) <thomas.j.plumb@nasa.gov>; Glaze, Lori S. (HQ-DG000) <lori.s.glaze@nasa.gov>; SHAW, MARCUS A CTR USSF SPOC SpOC/CCTA (b) (6) @spaceforce.mil>; BOGAR, JEFFREY W Col USSF USSPACECOM USSPACECOM/J81 (b) (6) @usspacecom.mil>
Subject: [Non-DoD Source] RE: [EXTERNAL] Confirmation of Interstellar Object

General Shaw,

Thank you for your memo of 1 March 2022, conveying information (b) (5)

This would make it (b) (5)

We appreciate (b) (5)

I believe (b) (5)

. I look forward to our future work together

Thomas Zurbuchen, PhD

Associate Administrator

Science Mission Directorate

P.S: . I will be at Space Symposium, in case we overlapped and you wanted to connect in person.

Referred to U.S. Space Force

Referred to U.S. Space Force

Re: [EXTERNAL] RE: Confirmation of Interstellar Object

From: Zurbuchen, Thomas H. (HQ-DA000) </O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=B58878EBEBD34F47A9DABD31924533F5-ZURBUCHEN,>
To: Petree, Kirsten D. (HQ-DA030) <kirsten.petree@nasa.gov>
Sent: March 5, 2022 11:49:56 AM EST
Received: March 5, 2022 11:49:58 AM EST

Not needed. I will ask him

On: 05 March 2022 08:54, "Petree, Kirsten D. (HQ-DA030)" <kirsten.petree@nasa.gov> wrote:

I'll talk with Lindley - he's may know.

On: 05 March 2022 09:09, "Zurbuchen, Thomas H. (HQ-DA000)" <thomas.h.zurbuchen@nasa.gov> wrote:

FYI - not sure who his staff is

Begin Forwarded Message:

Referred to U.S. Space Force



Referred to U.S. Space Force

From: Zurbuchen, Thomas H. (HQ-DA000) <thomas.h.zurbuchen@nasa.gov>

Sent: Friday, March 4, 2022 3:19 PM

To: SHAW, JOHN E Lt Gen USSF USSPACECOM/DCOM (b) (6) @spaceforce.mil>; THOMPSON, DAVID D Gen USSF HAF AF/VCSO (b) (6) @spaceforce.mil>; WHITING, STEPHEN N Lt Gen USSF SPOC SpOC/CC (b) (6) @spaceforce.mil>; MOZER, JOEL B SL-00 USSF HQSF SpOC/CTIO/STR (b) (6) @spaceforce.mil>; COSTA, LISA A SES USAF HAF AF/USSF/CTIO (b) (6) @spaceforce.mil>; Johnson, Lindley (HQ-DG000) <lindley.johnson@nasa.gov>; (b) (6) @ (b) (6) .gov
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Subject: [Non-DoD Source] RE: [EXTERNAL] Confirmation of Interstellar Object

General Shaw,

Thank you for your memo of 1 March 2022, conveying information (b) (5)

. This would make (b) (5)

We appreciate (b) (5)

I believe (b) (5)

. I look forward to our future work together

Thomas Zurbuchen, PhD

Associate Administrator

Science Mission Directorate

P.S: . I will be at Space Symposium, in case we overlapped and you wanted to connect in person.

Referred to U.S. Space Force

Referred to U.S. Space Force

EMAIL RESPONSE FOR REVIEW AND SEND: Confirmation of Interstellar Object

From: Petree, Kirsten D. (HQ-DA030) <kirsten.petree@nasa.gov>
To: Zurbuchen, Thomas H. (HQ-DA000) <thomas.h.zurbuchen@nasa.gov>
Sent: March 4, 2022 2:26:51 PM EST
Received: March 4, 2022 2:27:03 PM EST
Attachments: Reponse to Gen Shaw Memo of 3-1-2022.docx

Hi Thomas,

The attached response has been written by Lindley and approved by Lori, Kelly and Ursula. All agreed with the recommendation that (b) (5) Gen. Shaw would suffice as (b) (5). General Shaw is (b) (5), and (b) (5) would be more than adequate. Once we receive the more formal memo, we can write a more formal response. Please see the language below and attached for the response:

For the TO & CC: Copy the email addresses below, or cut and paste the response in the reply email.

General Shaw,

Thank you for your memo of 1 March 2022, conveying information (b) (5)

(b) (5)

(b) (5). This would make (b) (5)

(b) (5)

We appreciate (b) (5)

(b) (5). I believe (b) (5)

(b) (5). I look forward to our future work together.

Thomas Zurbuchen, PhD

Associate Administrator

Science Mission Directorate

Referred to U.S. Space Force

Referred to U.S. Space Force

Attachment

1. Reponse to Gen Shaw Memo of 3-1-2022.docx

Type: application/vnd.openxmlformats-officedocument.wordprocessingml.document
Size: 12 KB (12,468 bytes)

Attachment #1

Reponse to Gen Shaw Memo of 3-1-2022.docx

Original view

1 page

General Shaw,

Thank you for your memo of 1 March 2022, conveying information (b) (5)

[REDACTED]. This

would make (b) (5)

We appreciate (b) (5)

[REDACTED]. I believe (b) (5) [REDACTED]. I look forward to our future work together.

Thomas Zurbuchen, PhD
Associate Administrator
Science Mission Directorate

[EXTERNAL] RE: Confirmation of Interstellar Object

Referred to U.S. Space Force

From: Zurbuchen, Thomas H. (HQ-DA000) <thomas.h.zurbuchen@nasa.gov>

Sent: Friday, March 4, 2022 3:19 PM

To: SHAW, JOHN E Lt Gen USSF USSPACECOM/DCOM <(b) (6) @spaceforce.mil>; THOMPSON, DAVID D Gen USSF HAF AF/VCSO (b) (6) @spaceforce.mil>; WHITING, STEPHEN N Lt Gen USSF SPOC SpOC/CC (b) (6) @spaceforce.mil>; MOZER, JOEL B SL-00 USSF HQSF SpOC/CTIO/STR (b) (6) @spaceforce.mil>; COSTA, LISA A SES USAF HAF AF/USSF/CTIO (b) (6) @spaceforce.mil>; Johnson, Lindley (HQ-DG000) <lindley.johnson@nasa.gov>; (b) (6) @ (b) (6) gov
Cc: LEONARD, BROOK J Maj Gen USAF USSPACECOM JFSCC/J0CS (b) (6) @usspacecom.mil>; Plumb, Thomas J (HQ-TA000) <thomas.j.plumb@nasa.gov>; Glaze, Lori S. (HQ-DG000) <lori.s.glaze@nasa.gov>; SHAW, MARCUS A CTR USSF SPOC SpOC/CCTA (b) (6) @spaceforce.mil>; BOGAR, JEFFREY W Col USSF USSPACECOM USSPACECOM/J81 (b) (6) @usspacecom.mil>

Subject: [Non-DoD Source] RE: [EXTERNAL] Confirmation of Interstellar Object

General Shaw,

[EXTERNAL] RE_ Confirmation of
Interstellar Object

Thank you for your memo of 1 March 2022, conveying information (b) (5)

n. This would make (b) (5)

We appreciate (b) (5)

I believe there (b) (5)

I look forward to our future work together

Thomas Zurbuchen, PhD

Associate Administrator

Science Mission Directorate

P.S: . I will be at Space Symposium, in case we overlapped and you wanted to connect in person.

Referred to U.S. Space Force

Attachment

1. smime.p7s

Type: application/pkcs7-signature
Size: 5 KB (5,429 bytes)

Attachment #1
smime.p7s

Fwd: [EXTERNAL] RE: Confirmation of Interstellar Object

From: Zurbuchen, Thomas H. (HQ-DA000) </O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=B58878EBEBD34F47A9DABD31924533F5-ZURBUCHEN,>
To: Petree, Kirsten (HQ-DA000)[BOOZ ALLEN HAMILTON] <kirsten.petree@nasa.gov>, Petree, Kirsten D. (HQ-DA030) <kirsten.petree@nasa.gov>
Sent: March 5, 2022 9:09:49 AM EST
Received: March 5, 2022 9:09:50 AM EST

FYI - not sure who his staff is

Begin Forwarded Message:

Referred to U.S. Space Force



From: Zurbuchen, Thomas H. (HQ-DA000) <thomas.h.zurbuchen@nasa.gov>
Sent: Friday, March 4, 2022 3:19 PM
To: SHAW, JOHN E Lt Gen USSF USSPACECOM/DCOM (b) (6) @spaceforce.mil>; THOMPSON, DAVID D Gen

USSF HAF AF/VCSO (b) (6) @spaceforce.mil>; WHITING, STEPHEN N Lt Gen USSF SPOC SpOC/CC (b) (6) @spaceforce.mil>; MOZER, JOEL B SL-00 USSF HQSF SpOC/CTIO/STR (b) (6) @spaceforce.mil>; COSTA, LISA A SES USAF HAF AF/USSF/CTIO (b) (6) @spaceforce.mil>; Johnson, Lindley (HQ-DG000) <lindley.johnson@nasa.gov>; (b) (6) @ (b) (6) .gov
Cc: LEONARD, BROOK J Maj Gen USAF USSPACECOM JFSCC/J0CS (b) (6) @usspacecom.mil>; Plumb, Thomas J (HQ-TA000) <thomas.j.plumb@nasa.gov>; Glaze, Lori S. (HQ-DG000) <lori.s.glaze@nasa.gov>; SHAW, MARCUS A CTR USSF SPOC SpOC/CCTA (b) (6) @spaceforce.mil>; BOGAR, JEFFREY W Col USSF USSPACECOM USSPACECOM/J81 (b) (6) @usspacecom.mil>
Subject: [Non-DoD Source] RE: [EXTERNAL] Confirmation of Interstellar Object

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Thank you for your memo of 1 March 2022, conveying information (b) (5)

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We appreciate (b) (5)

I believe (b) (5)

. I look forward to our future work together

Thomas Zurbuchen, PhD

Associate Administrator

Science Mission Directorate

P.S: . I will be at Space Symposium, in case we overlapped and you wanted to connect in person.

Referred to U.S. Space Force

Referred to U.S. Space Force

[EXTERNAL] Fwd: CNEOS 2014-01-08

From: Thomas Zurbuchen <(b) (6) @ (b) (6) >
To: Thomas Zurbuchen <thomas.h.zurbuchen@nasa.gov>, Zurbuchen, Thomas H. (HQ-DA000) <thomas.h.zurbuchen@nasa.gov>
Sent: April 5, 2022 9:37:30 AM EDT
Received: April 5, 2022 9:39:05 AM EDT

Thomas

Sent from my iPhone

Begin forwarded message:

From: Avi Loeb <(b) (6) @cfa.harvard.edu>
Date: April 5, 2022 at 4:11:56 AM MDT
To: Thomas Zurbuchen (b) (6) @ (b) (6)
Subject: CNEOS 2014-01-08

Dear Thomas,

Does your office have any information about the meteor CNEOS 2014-01-08 being publicly confirmed? Back in 2019 we interpreted it with my student, Amir Siraj, as having an interstellar origin,

<https://ui.adsabs.harvard.edu/abs/2019arXiv190407224S/abstract>
<<https://gcc02.safelinks.protection.outlook.com/?url=https://ui.adsabs.harvard.edu/abs/2019arXiv190407224S/abstract&data=04|01|thomas.h.zurbuchen@nasa.gov|bf7a73d1b43149c1214b08da170972cc|7005d45845be48ae8140d43da96dd17b|0|0|637847627459226446|Unknown|TWfPbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjojV2luMzliLCJBTiI6lk1haWwiLCJXVCi6Mn0=|1000&sdata=F07+NQN3edVme8YPaPY3kTOHsv/my1gAyfn+qHCercM=&reserved=0>>

and we were told that your office might have received confirmation from Space Command about it. Obviously any such confirmation would be of importance to the astrophysical community broadly.

With warm regards,

Avi

Abraham (Avi) Loeb
Frank B. Baird Jr. Professor of Science
Harvard University

Professional website

<<https://gcc02.safelinks.protection.outlook.com/?url=https://lweb.cfa.harvard.edu/~loeb/&data=04|01|thomas.h.zurbuchen@nasa.gov|bf7a73d1b43149c1214b08da170972cc|7005d45845be48ae8140d43da96dd17b|0|0|637847627459226446|Unknown|TWfPbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjojV2luMzliLCJBTiI6lk1haWwiLCJXVCi6Mn0=|1000&sdata=/Z0BRbKAgH9Sp5CI223UGRLzBdcGomX0Aj8MGL7cdA8=&reserved=0>>

List of Essays

<<https://gcc02.safelinks.protection.outlook.com/?url=https://lweb.cfa.harvard.edu/~loeb/Opinion.html&data=04|01|thom>

as.h.zurbuchen@nasa.gov|bf7a73d1b43149c1214b08da170972cc|7005d45845be48ae8140d43da96dd17b|0|0|63784
7627459226446|Unknown|TWfPbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjojV2luMzliLCJBTil6lk1haWwiLCJXVCi6M
n0=|1000&sdata=7J04lzIPHeHN34PkJklbw30r+qWgl/GAhHRNQ8yy1MM=&reserved=0>

Cell: (b) (6) [he/him/his]

Fwd: [EXTERNAL] Fwd: CNEOS 2014-01-08

From: Zurbuchen, Thomas H. (HQ-DA000) </O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=B58878EBEBD34F47A9DABD31924533F5-ZURBUCHEN,>
To: Fast, Kelly E. (HQ-DG000) <kelly.e.fast@nasa.gov>
Sent: April 5, 2022 9:48:32 AM EDT
Received: April 5, 2022 9:48:34 AM EDT

Hi Kelly - can you pls respond to Avi or forward to someone who will?

Thanks

Thomas

Begin Forwarded Message:

From: "Thomas Zurbuchen" <(b) (6) @ (b) (6)>
Subject: [EXTERNAL] Fwd: CNEOS 2014-01-08
Date: 05 April 2022 07:39
To: "Zurbuchen, Thomas H. (HQ-DA000)" <thomas.h.zurbuchen@nasa.gov>

Thomas

Sent from my iPhone

Begin forwarded message:

From: Avi Loeb (b) (6) @cfa.harvard.edu>
Date: April 5, 2022 at 4:11:56 AM MDT
To: Thomas Zurbuchen (b) (6) @ (b) (6)>
Subject: CNEOS 2014-01-08

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<https://ui.adsabs.harvard.edu/abs/2019arXiv190407224S/abstract>
<<https://gcc02.safelinks.protection.outlook.com/?url=https://ui.adsabs.harvard.edu/abs/2019arXiv190407224S/abstract&data=04|01|thomas.h.zurbuchen@nasa.gov|bf7a73d1b43149c1214b08da170972cc|7005d45845be48ae8140d43da96dd17b|0|0|637847627459226446|Unknown|TWFPbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjojV2luMzliLCJBTil6lk1haWwiLCJXVCi6Mn0=|1000&sdata=F07+NQN3edVme8YPaPY3kTOHsv/my1gAyfn+qHCErcM=&reserved=0>>

and we were told that your office might have received confirmation from Space Command about it. Obviously any such confirmation would be of importance to the astrophysical community broadly.

With warm regards,

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Abraham (Avi) Loeb
Frank B. Baird Jr. Professor of Science
Harvard University

Professional website

<<https://gcc02.safelinks.protection.outlook.com/?url=https://lweb.cfa.harvard.edu/~loeb/&data=04|01|thomas.h.zurbuchen@nasa.gov|bf7a73d1b43149c1214b08da170972cc|7005d45845be48ae8140d43da96dd17b|0|0|637847627459226446|Unknown|TWFPbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTil6Ik1haWwiLCJXVCI6Mn0=|1000&sdata=/Z0BRbKAgH9Sp5CI223UGRLzBdcGomX0Aj8MGL7cdA8=&reserved=0>>

List of Essays

<<https://gcc02.safelinks.protection.outlook.com/?url=https://lweb.cfa.harvard.edu/~loeb/Opinion.html&data=04|01|thomas.h.zurbuchen@nasa.gov|bf7a73d1b43149c1214b08da170972cc|7005d45845be48ae8140d43da96dd17b|0|0|637847627459226446|Unknown|TWFPbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTil6Ik1haWwiLCJXVCI6Mn0=|1000&sdata=7J04IzIPHeHN34PkJklbw30r+qWgl/GAhHRNQ8yy1MM=&reserved=0>>

Cell: (b) (6) [he/him/his]

Re: [EXTERNAL] Fwd: CNEOS 2014-01-08

From: Fast, Kelly E. (HQ-DG000) <kelly.e.fast@nasa.gov>
To: Zurbuchen, Thomas H. (HQ-DA000) <thomas.h.zurbuchen@nasa.gov>
Sent: April 5, 2022 9:54:28 AM EDT
Received: April 5, 2022 9:54:29 AM EDT

Hi Thomas,

Yes, I will coordinate a response with Lindley.

Kelly

-- --

Dr. Kelly Elizabeth Fast

Near-Earth Object Observations <<https://www.nasa.gov/planetarydefense/neoo>> Program Manager

Planetary Defense Coordination Office <<https://www.nasa.gov/planetarydefense/overview>>

Planetary Science Division

NASA Headquarters

(202) 358-0768

From: "Zurbuchen, Thomas H. (HQ-DA000)" <thomas.h.zurbuchen@nasa.gov>
Date: Tuesday, April 5, 2022 at 9:48 AM
To: Kelly Fast <kelly.e.fast@nasa.gov>
Subject: Fwd: [EXTERNAL] Fwd: CNEOS 2014-01-08

Hi Kelly - can you pls respond to Avi or forward to someone who will?

Thanks

Thomas

Begin Forwarded Message:

From: "Thomas Zurbuchen" (b) (6) @ (b) (6)
Subject: [EXTERNAL] Fwd: CNEOS 2014-01-08
Date: 05 April 2022 07:39
To: "Zurbuchen, Thomas H. (HQ-DA000)" <thomas.h.zurbuchen@nasa.gov>

Thomas

Sent from my iPhone

Begin forwarded message:

From: Avi Loeb (b) (6) @cfa.harvard.edu>

Date: April 5, 2022 at 4:11:56 AM MDT

To: Thomas Zurbuchen (b) (6) @ (b) (6)

Subject: CNEOS 2014-01-08

Dear Thomas,

Does your office have any information about the meteor CNEOS 2014-01-08 being publicly confirmed? Back in 2019 we interpreted it with my student, Amir Siraj, as having an interstellar origin,

<https://ui.adsabs.harvard.edu/abs/2019arXiv190407224S/abstract>

<<https://gcc02.safelinks.protection.outlook.com/?url=https://ui.adsabs.harvard.edu/abs/2019arXiv190407224S/abstract&data=04|01|thomas.h.zurbuchen@nasa.gov|38f5dab2589f408cfa0608da170bcdca|7005d45845be48ae8140d43da96dd17b|0|0|637847636701425888|Unknown|TWFPbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ik1haWwiLCJXVCi6Mn0=|3000&sdata=4hihV2HICI4I3OITEoNA8CkXXkOeyjM+KUx6KNTSKh8=&reserved=0>>

and we were told that your office might have received confirmation from Space Command about it. Obviously any such confirmation would be of importance to the astrophysical community broadly.

With warm regards,

Avi

Abraham (Avi) Loeb

Frank B. Baird Jr. Professor of Science

Harvard University

Professional website

<<https://gcc02.safelinks.protection.outlook.com/?url=https://lweb.cfa.harvard.edu/~loeb/&data=04|01|thomas.h.zurbuchen@nasa.gov|38f5dab2589f408cfa0608da170bcdca|7005d45845be48ae8140d43da96dd17b|0|0|637847636701425888|Unknown|TWFPbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ik1haWwiLCJXVCi6Mn0=|3000&sdata=HkBBkJO9lwrpJmB6USV+Q9VxY0F+wFHg2YUKxtqwk=&reserved=0>>

List of Essays

<<https://gcc02.safelinks.protection.outlook.com/?url=https://lweb.cfa.harvard.edu/~loeb/Opinion.html&data=04|01|thomas.h.zurbuchen@nasa.gov|38f5dab2589f408cfa0608da170bcdca|7005d45845be48ae8140d43da96dd17b|0|0|637847636701425888|Unknown|TWFPbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ik1haWwiLCJXVCi6Mn0=|3000&sdata=vIhp/PdPSiWlvsLkaBrFW6FSY1G2YOVh9WICL53shwA=&reserved=0>>

Cell: (b) (6) [he/him/his]

email

From: Zurbuchen, Thomas H. (HQ-DA000) </O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=B58878EBEBD34F47A9DABD31924533F5-ZURBUCHEN,>
To: (b) (6) @ (b) (6)
Sent: April 15, 2022 10:43:32 AM EDT
Received: April 15, 2022 10:43:00 AM EDT

General Shaw,

Thank you for your memo of 1 March 2022, conveying information (b) (5)

This would make (b) (5)

We appreciate (b) (5)

I believe (b) (5)

. I look forward to our future work together

Thomas Zurbuchen, PhD

Associate Administrator

Science Mission Directorate

P.S: . I will be at Space Symposium, in case we overlapped and you wanted to connect in person.

Thomas H. Zurbuchen, PhD

Associate Administrator, NASA Science Mission Directorate

@ (b) (6)

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