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"Rummaging in the government's attic"

Description of document:

National Aeronautics and Space Administration (NASA) emails from The NASA Office of Legislative and Intergovernmental Affairs (OLIA) containing the word "UAP" or the phrase "Unidentified Aerial Phenomena," May 01, 2021 - July 19, 2021

Requested date: 25-June-2021

Interim release date: 04-August-2021

Final Release date: 30-November-2021

13-December-2021

Source of document:

Posted date:

FOIA Request NASA Headquarters 300 E Street, SW Room 5Q16 Washington, DC 20546 Fax: (202) 358-4332 Email: <u>hq-foia@nasa.gov</u> <u>Online FOIA submission form</u>

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National Aeronautics and Space Administration

Headquarters Office of Communications 300 E Street, SW Washington, DC 20546-0001



August 4, 2021

Reply to Attn of: MS5L9, FOIA Public Liaison

Via Email

REF: FOIA Case No. 21-HQ-F-00561

Dear Sir,

This is our First Interim Determination of your Freedom of Information Act (FOIA) request, dated and received by the National Aeronautics and Space Administration ((NASA) Headquarters (HQ) FOIA Office on June 25, 2021. Your request was assigned FOIA Case Number 21-HQ-F-00561 and seeks:

"A copy of each email in the email accounts of individuals in the NASA Office of Legislative and Intergovernmental Affairs that contains the word UAP, based on an electronic search. I limit this request to the time period May 1, 2021 through the present."

On July 12, 2021, you narrowed your request to the emails of Associate Administrator for Legislative and Intergovernmental Affairs Alicia Brown.

In response to your request, a search of Ms. Alicia Brown's email inbox was conducted by NASA's Information Technology Department (IT). The search identified responsive records containing the search term UAP and Unidentified Aerial Phenomena within the timeframe provided above. The search located 67 emails<sup>1</sup> totaling 390 pages. We are releasing this first interim with 184 pages.

We have reviewed the responsive record under the FOIA to determine whether they may be accessed under the FOIA's provisions. Based on that review, this office is providing these initial responsive records in full.

<sup>&</sup>lt;sup>1</sup> For ease of review and management the emails were grouped by subject title to 15 pdf documents.

#### **Appeal Rights**

You have the right to appeal my action on your FOIA request. Your appeal must be received within 90 calendar days of the date of this letter. Your appeal must be in writing and addressed to:

Administrator ATTN: FOIA Appeals NASA Headquarters Executive Secretariat MS 9R17 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 copies of your initial request, this correspondence, 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 also contain a brief statement of the reasons you believe this initial determination should be reversed.

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

For further assistance and to discuss any aspect of your request, you may contact NASA's Chief FOIA Public Liaison, Stephanie Fox, via telephone at 202-358-1553 or via e-mail at <u>Stephanie.K.Fox@NASA.gov</u>. You may also send correspondence to Ms. Fox at the following address:

National Aeronautics and Space Administration (NASA) Freedom of Information Act Unit NASA Headquarters Attn: Stephanie Fox Chief FOIA Public Liaison300 E Street, S.W., 5P32 Washington D.C. 20546 (Fax) 202- 358-4332

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 Email: ogis@nara.gov Telephone: (202) 741-5770 Toll free: 1-877-684-6448 Fax: (202) 741-5769

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

If I can be of further assistance, please contact me at 202-358-0680 or Mireya.P.Nyirenda@nasa.gov.

Sincerely,

Mireya Nyirenda Mia Nyirenda Date: 2021.08.04 09:13:17 -04'00'

MIREYA P. NYIRENDA FOIA Public Liaison Officer

# [EXTERNAL] NASA Morning Briefing for Monday, June 21, 2021

From:	Bulletin Intelligence <nasa@bulletinintelligence.com></nasa@bulletinintelligence.com>
То:	nasa@BulletinIntelligence.com
Sent:	June 21, 2021 6:57:32 AM EDT
Received:	June 21, 2021 6:57:53 AM EDT

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a1a&t=c&data=04|01|alicia.n.brown@nasa.gov|a0eddd4970cd4681eb9508d934a36899|7005d45845be48ae8140d43d a96dd17b|0|0|637598698736664456|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiV2luMzIiLCJBTil6lk 1haWwiLCJXVCI6Mn0=|1000&sdata=QNqySwPTUwOL0VKNUbGYwaOmVL+FltKZOwEPArpVeNU=&reserved=0> iPhone-optimized online version, download options, archive and an audio reader.

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a4a&t=c&data=04|01|alicia.n.brown@nasa.gov|a0eddd4970cd4681eb9508d934a36899|7005d45845be48ae8140d43d a96dd17b|0|0|637598698736664456|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiV2luMzliLCJBTil6lk 1haWwiLCJXVCI6Mn0=|1000&sdata=lyCjX38ZZUTpVYvXiCc1aSNB0vkNBHryWN1+4HCeGGc=&reserved=0>

Monday, June 21, 2021 7:00 AM EDT

Editor's Note

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b6e&t=c&data=04|01|alicia.n.brown@nasa.gov|a0eddd4970cd4681eb9508d934a36899|7005d45845be48ae8140d43d a96dd17b|0|0|637598698736674413|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6Ik 1haWwiLCJXVCI6Mn0=|1000&sdata=/quQ/Yvp6rQhMyCW0bfHFk0JW1P8LfE9RfKmPLvmtG8=&reserved=0>. A NASA email address is required.

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Take 2: Spacewalking Astronauts Install New Solar Panel

# AP

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f3a&t=c&data=04|01|alicia.n.brown@nasa.gov|a0eddd4970cd4681eb9508d934a36899|7005d45845be48ae8140d43d a96dd17b|0|0|637598698736674413|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6Ik 1haWwiLCJXVCI6Mn0=|1000&sdata=S0DoeermC41F0XpjKWfvJ3Pryn94gHZGGNgy2mILTPU=&reserved=0> (6/20, Dunn) "Spacewalking astronauts equipped the International Space Station with the first in a series of powerful new solar panels Sunday, overcoming suit problems and other obstacles with muscle and persistence. It took two spacewalks for French astronaut Thomas Pesquet and NASA astronaut Shane Kimbrough to install and unfurl the panel to its full 63 feet (19 meters) in length."

NASA 'Keeping Eye' On Jeff Bezos And Other Space Astronaut Billionaires

#### Fox Business

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fd1&t=c&data=04|01|alicia.n.brown@nasa.gov|a0eddd4970cd4681eb9508d934a36899|7005d45845be48ae8140d43d a96dd17b|0|0|637598698736684370|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiV2luMzliLCJBTil6lk 1haWwiLCJXVCI6Mn0=|1000&sdata=MrbYTncm9nwbJvsfzToyc69YQ+n5EVuhSlxCOoT8L8k=&reserved=0> (6/18, Vaughn) "With Billionaire Jeff Bezos weeks away from lifting off in his own Blue Origin rocket, along with his brother Mark and a mystery passenger who paid \$28 million to be onboard, NASA has a message: Space is not going to be the wild-west for billionaires or anyone else looking to blast off. 'I'm keeping my eye on it, but they're going to have to meet the same rigorous physical and psychological examination for any other professional astronaut,' NASA Administrator Bill Nelson told FOX Business exclusively."

Funding For Bezos Space Company Fails To Launch In House

#### Wall Street Journal

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ddc&t=c&data=04|01|alicia.n.brown@nasa.gov|a0eddd4970cd4681eb9508d934a36899|7005d45845be48ae8140d43d

a96dd17b|0|0|637598698736684370|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiV2luMzIiLCJBTil6lk 1haWwiLCJXVCI6Mn0=|1000&sdata=zq6JTQzh1B7govHHHm16TIYwFyWIHUq9jBGE8Gw2j1w=&reserved=0> (6/18, Rubin) "HOUSE THROWS UP ROADBLOCKS to funding for Jeff Bezos's Blue Origin space exploration company that was approved as part of the Senate's bipartisan China competition legislation last week. Members from both parties made clear the \$10 billion authorization, pushed by Washington Democratic Sen. Maria Cantwell, for a second moon lander contract ( Elon Musk's SpaceX won the first contract earlier this year, while Blue Origin was one of two runnersup) was a nonstarter for the House's version of science and innovation legislation."

Rep. Waltz Reacts To Latest 'Woke' NASA Ad

#### Fox News

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537&t=c&data=04|01|alicia.n.brown@nasa.gov|a0eddd4970cd4681eb9508d934a36899|7005d45845be48ae8140d43d a96dd17b|0|0|637598698736684370|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiV2luMzliLCJBTil6lk 1haWwiLCJXVCI6Mn0=|1000&sdata=d1JpdIB9vVDS4DaOywHVVTjgq2ero6g91I6ASQ1NMMc=&reserved=0> (6/18) "MICHAEL WALTZ: More diversity in space than our astronauts, great. What we need to be focused on is getting more Americans into space because right now the Chinese are passing us. They are kicking our butts up there, and it's a real problem. Brian, more launches, more Chinese launches in space last year than the rest of the world combined, including the United States. As you said, just put their own astronauts in their own space station, which is brand new and being built, ours is 30 years old and decrepit."

If You Care About The US, Root For China To Score A Win In Space

#### The Hill

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aba&t=c&data=04|01|alicia.n.brown@nasa.gov|a0eddd4970cd4681eb9508d934a36899|7005d45845be48ae8140d43d a96dd17b|0|0|637598698736694325|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6Ik 1haWwiLCJXVCI6Mn0=|1000&sdata=nownPcU/FvzhiHOQkZAdckZqD222cDpwhMvWsArvI/k=&reserved=0> (6/19, Mackinnon) "It can be argued that members of Congress and presidents sometimes appear to put their personal reelections before all else — occasionally, this happens even at the expense of the long-term welfare of America. For politicians who view their lives and personal advancement in increments of two-, four- and six-year windows, tangible, immediate vote-influencing issues tend to dominate their policy decisions. ... The Biden administration and many members of Congress appear to have placed American preeminence in space back on the rear burner, or they've knocked it off the stove entirely. They're seeking to allocate more of NASA's space budget to climate change and other issues."

Flight

NASA, DLR Show SAFs Can Reduce Contrails' Climate Impact

# Aviation Week

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c8e&t=c&data=04|01|alicia.n.brown@nasa.gov|a0eddd4970cd4681eb9508d934a36899|7005d45845be48ae8140d43d a96dd17b|0|0|637598698736694325|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6Ik 1haWwiLCJXVCI6Mn0=|1000&sdata=BITpzXoLRek/dggRBmTgpOcZzb238EcjOFFwvDnCuQI=&reserved=0> (6/18) "Cleaner-burning sustainable fuels can reduce aircraft contrails' cloudiness and their contribution to aviation's climate impact, joint research by NASA and German aerospace center DLR has concluded. Burning low-aromatic sustainable aviation fuel (SAF) can result in a 50-70% reduction in soot..." New NASA Study Finds Sustainable Aviation Fuels Help Eliminate Contrails

# SlashGear

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000&t=c&data=04|01|alicia.n.brown@nasa.gov|a0eddd4970cd4681eb9508d934a36899|7005d45845be48ae8140d43d a96dd17b|0|0|637598698736704285|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiV2luMzIiLCJBTil6lk 1haWwiLCJXVCl6Mn0=|1000&sdata=A2PxChcW3+xz0rVtrOV7Y60GRj3bex6EuFU9VIC0bol=&reserved=0> (6/20, McGlaun) "We've all looked up the sky and seen commercial aircraft flying overhead, leaving what looks like clouds in the sky, a phenomenon called contrails. NASA has published a new study in cooperation with DLA ATRA aircraft investigating alternative fuels. Cleaner burning jet fuels are made from stable resources and, according to the study, produce between 50 and 70 percent fewer ice crystal contrails at cruising altitude, helping to reduce the impact of aviation on the environment. Ice crystal formations can linger in the upper atmosphere for hours and impact how the earth heats and cools itself."

# Earth

Nasa Warned The Earth Is Trapping Twice As Much Heat As In 2005 — A Pace That's 'Unprecedented'

# Insider

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2c1&t=c&data=04|01|alicia.n.brown@nasa.gov|a0eddd4970cd4681eb9508d934a36899|7005d45845be48ae8140d43d a96dd17b|0|0|637598698736704285|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiV2luMzliLCJBTil6lk 1haWwiLCJXVCI6Mn0=|1000&sdata=mqN5+vIOy4Ir5pnmMGIDI4aTB3o61CsFcHS2wGuWIn4=&reserved=0> (6/18, Baker) "The amount of heat being trapped by Earth has roughly doubled since 2005, NASA warned. Researchers from NASA and the National Oceanic and Atmospheric Administration (NOAA) found in a new study released earlier this week that Earth's 'energy imbalance approximately doubled during the 14-year period from 2005 to 2019."

Earth's Atmosphere Trapping 'Unprecedented' Amount Of Heat: NASA, NOAA Report

# Fox News

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06a&t=c&data=04|01|alicia.n.brown@nasa.gov|a0eddd4970cd4681eb9508d934a36899|7005d45845be48ae8140d43d a96dd17b|0|0|637598698736704285|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiV2luMzIiLCJBTil6lk 1haWwiLCJXVCI6Mn0=|1000&sdata=ZyN8mXQMhtsRD/G9HAE4eYSog5moChUF5NXUalFYbL0=&reserved=0> (6/19, Musto) "Scientists at the National Aeronautics and Space Administration (NASA) and the National Oceanic and Atmospheric Administration (NOAA) have determined in new research that the Earth's atmosphere has been trapping an 'unprecedented' amount of heat, with the planet's energy imbalance approximately doubling from 2005 to 2019."

Humans in Space

Take 2: Spacewalking Astronauts Install New Solar Panel

# AP

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1haWwiLCJXVCI6Mn0=|1000&sdata=PXLBOiPpiRYDJB0is9tX6ks87hW7JN5BZcTl4h+eM2w=&reserved=0> (6/20, Dunn) "Spacewalking astronauts equipped the International Space Station with the first in a series of powerful new solar panels Sunday, overcoming suit problems and other obstacles with muscle and persistence. It took two spacewalks for French astronaut Thomas Pesquet and NASA astronaut Shane Kimbrough to install and unfurl the panel to its full 63 feet (19 meters) in length."

Thousands Tune In As Astronauts Install A New Solar Array On The International Space Station

#### Forbes

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7bd&t=c&data=04|01|alicia.n.brown@nasa.gov|a0eddd4970cd4681eb9508d934a36899|7005d45845be48ae8140d43d a96dd17b|0|0|637598698736714240|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiV2luMzliLCJBTil6lk 1haWwiLCJXVCl6Mn0=|1000&sdata=02ycKMOX94StLRqA+FCwl4l6sImgnQiKVF558OHMTEU=&reserved=0> (6/20, Porterfield) "Space enthusiasts across the world watched as two astronauts installed a new solar array onto the International Space Station, as part of a project to upgrade the station's ability to harness the sun's energy to provide electricity for the astronauts working and living on the station. Starting early Sunday morning, French European Space Agency astronaut Thomas Pesquet and American NASA astronaut Shane Kimbrough set up a new roll-out solar array, or an arrangement of multiple solar panels that run on a system, designed specially for the ISS in a space walk that was streamed live online."

Spacewalkers Unfurl First Of Six New Space Station Solar Arrays

#### Spaceflight Now

<a href="https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=20210">https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=20210</a> 62102nasa&r=email-dece&l=00e-

9e2&t=c&data=04|01|alicia.n.brown@nasa.gov|a0eddd4970cd4681eb9508d934a36899|7005d45845be48ae8140d43d a96dd17b|0|0|637598698736724195|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiV2luMzIiLCJBTil6lk 1haWwiLCJXVCl6Mn0=|1000&sdata=ElwbqEmot3DV4W5gLAYKd6V1jnuGEqBjyGl7Prrf9rI=&reserved=0> (6/20, Clark) "Astronauts Thomas Pesquet and Shane Kimbrough floated outside the International Space Station Sunday to deploy and unroll a new solar array blanket after encountering spacesuit glitches and an interference issue during a previous excursion Wednesday. Pesquet and Kimbrough switched their spacesuits to battery power at 7:42 a.m. EDT (1142 GMT) Sunday to begin a planned six-and-a-half hour spacewalk."

ESA/NASA Complete ISS Spacewalk To Install First New Solar Array

# NASA Space Flight

<a href="https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021062102nasa&r=email-dece&l=00f-">https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021062102nasa&r=email-dece&l=00f-">https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021067">https://mailview.bulletinintelligence.com/mailview.aspx?m=2021067</a>

eb5&t=c&data=04|01|alicia.n.brown@nasa.gov|a0eddd4970cd4681eb9508d934a36899|7005d45845be48ae8140d43d a96dd17b|0|0|637598698736724195|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6Ik 1haWwiLCJXVCI6Mn0=|1000&sdata=zZjuc2VqSzU6LVRubpt0xn0SWUuMSBRIjp31k9G5e/c=&reserved=0> (6/20, Harding) "Two astronauts went outside the International Space Station (ISS) to complete installation of the first of six new Boeing-built solar arrays — part of a program to increase the station's electrical power generation capacity as its science and research demands increase and future expansion plans continue. The Extravehicular Activity (EVA) – officially known as US EVA-75 – began at 11:42 UTC / 07:42 EDT when Thomas Pesquet from the European Space Agency (ESA) and Shane Kimbrough from NASA took their spacesuits to battery power before exiting the Quest Airlock to begin their work."

Astronauts Install New Solar Panels In 6-hour Spacewalk On International Space Station

# CNN

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573&t=c&data=04|01|alicia.n.brown@nasa.gov|a0eddd4970cd4681eb9508d934a36899|7005d45845be48ae8140d43d a96dd17b|0|0|637598698736724195|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiV2luMzIiLCJBTil6lk 1haWwiLCJXVCI6Mn0=|1000&sdata=pQIZqfwL3AGVxoNNk2iRXL8qWw/zhLEkCAkmnqodJyA=&reserved=0> (6/20, Strickland) "NASA astronaut Shane Kimbrough and European Space Agency astronaut Thomas Pesquet conducted a spacewalk Sunday – their second in the past week – to install new solar arrays that will provide a power boost to the space station. The spacewalk came days after facing "technical delays" during a spacewalk on Wednesday. The astronauts carried over some of Wednesday's work that was left unfinished due to the issues."

Astronauts On Spacewalk Deploy First Roll-Out Solar Array To Boost Power For Station

# SPACE

<a href="https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=20210">https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=20210</a> 62102nasa&r=email-dece&l=011-

3fb&t=c&data=04|01|alicia.n.brown@nasa.gov|a0eddd4970cd4681eb9508d934a36899|7005d45845be48ae8140d43d a96dd17b|0|0|637598698736734151|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiV2luMzIiLCJBTil6lk 1haWwiLCJXVCI6Mn0=|1000&sdata=7J8PZFJDhRViTEBLhda+xkuB4lbfTX+I/Im0FVAsvWQ=&reserved=0> (6/20, Pearlman) "Two astronauts working outside the International Space Station successfully rolled out a new type of solar array, providing the orbiting outpost with its first power boost in decades. NASA astronaut Shane Kimbrough and French astronaut Thomas Pesquet of the European Space Agency conducted a six-hour and 28-minute extravehicular activity (EVA) on Sunday (June 20), to finish the installation and deployment of the first International Space Station (ISS) Roll-Out Solar Array (iROSA). The two Expedition 65 crewmates resumed work where they had left off on a spacewalk on Wednesday (June 16), by overcoming an interference issue that initially prevented them from unfolding the array fully."

In Second Attempt, Spacewalkers Successfully Deploy Balky Solar Array

# CBS News

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cc6&t=c&data=04|01|alicia.n.brown@nasa.gov|a0eddd4970cd4681eb9508d934a36899|7005d45845be48ae8140d43d a96dd17b|0|0|637598698736734151|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiV2luMzIiLCJBTil6lk 1haWwiLCJXVCl6Mn0=|1000&sdata=VXHspFj5pnEzs6dH7XlkxAnfF4mSGY99YKWj4myo3nE=&reserved=0> (6/20, Harwood) "Spacewalkers Thomas Pesquet and Shane Kimbrough successfully deployed a balky roll-out solar blanket on the International Space Station Sunday after problems derailed an attempt last week. 'Beautiful,' Pesquet, a European Space Agency astronaut, marveled after releasing a final bolt, watching as the 15-foot-wide array began unfurling on the far left end of the station's solar power truss."

Rocket Report: China Launches Crew Mission, SpaceX Runs Into Road Troubles

# Ars Technica

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80c&t=c&data=04|01|alicia.n.brown@nasa.gov|a0eddd4970cd4681eb9508d934a36899|7005d45845be48ae8140d43d a96dd17b|0|0|637598698736744109|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiV2luMzIiLCJBTiI6lk 1haWwiLCJXVCI6Mn0=|1000&sdata=ByA+sJ0BpgU8wzrnU73M4pkZwYyWVjglttqvq6b8584=&reserved=0> (6/18, Berger) "Welcome to Edition 4.03 of the Rocket Report! This week saw two significant launches back-to-back. On Wednesday evening, US time, China launched its first crewed mission to its new space station, which was also the country's first human spaceflight in nearly five years. And then, less than a day later, the US Space Force joined the ranks of reusable launch customers."

Will Jeff Bezos Be An Astronaut When He Travels Into Space On A Blue Origin Flight? It's Complicated, Because Experts Say There's Still A Debate About Where Space Begins.

#### Insider

<a href="https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=20210">https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=20210</a> 62102nasa&r=email-dece&l=014-

1a5&t=c&data=04|01|alicia.n.brown@nasa.gov|a0eddd4970cd4681eb9508d934a36899|7005d45845be48ae8140d43d a96dd17b|0|0|637598698736744109|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6Ik 1haWwiLCJXVCI6Mn0=|1000&sdata=CZ94rXDeXDSJ+5QH0ORg0Iwc0WDvGSpqFrAIEC9ysW4=&reserved=0> (6/18) "Blue Origin said founder Jeff Bezos will earn his 'astronaut wings' in July. He'll cross the Kármán Line, the imaginary boundary into space. But academics and other experts said there isn't yet a true consensus on where space begins."

NASA 'Keeping Eye' On Jeff Bezos And Other Space Astronaut Billionaires

#### Fox Business

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24d&t=c&data=04|01|alicia.n.brown@nasa.gov|a0eddd4970cd4681eb9508d934a36899|7005d45845be48ae8140d43d a96dd17b|0|0|637598698736744109|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiV2luMzIiLCJBTil6lk 1haWwiLCJXVCI6Mn0=|1000&sdata=v0/p5P1b49LqP1FRGr7IGeldtlb1WRQdXM/9Wj1pgmw=&reserved=0> (6/18, Vaughn) "With Billionaire Jeff Bezos weeks away from lifting off in his own Blue Origin rocket, along with his brother Mark and a mystery passenger who paid \$28 million to be onboard, NASA has a message: Space is not going to be the wild-west for billionaires or anyone else looking to blast off. 'I'm keeping my eye on it, but they're going to have to meet the same rigorous physical and psychological examination for any other professional astronaut,' NASA Administrator Bill Nelson told FOX Business exclusively."

NASA Is Keeping A Watchful Eye On Jeff Bezos And Other Billionaires Competing In The Space Race, According To The Agency's Chief

# Insider

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d14&t=c&data=04|01|alicia.n.brown@nasa.gov|a0eddd4970cd4681eb9508d934a36899|7005d45845be48ae8140d43d a96dd17b|0|0|637598698736754063|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiV2luMzIiLCJBTil6lk 1haWwiLCJXVCl6Mn0=|1000&sdata=RxA3Rfe91EY7vlMafyBjvr1ZUdFMIXLbl5JfuRVM/F8=&reserved=0> (6/20, Tayeb) "It's only weeks until Amazon CEO Jeff Bezos blasts off into space with his brother, Mark, and an unidentified passenger who paid \$28 million for a seat on Blue Origin's, New Shepherd spacecraft. But in an interview with Fox Business, NASA said it had a message for the billionaires competing in a race to space: it's not going to be the Wild West for those looking to travel there."

Boeing Starliner Is On Track For Its July Test Flight

#### SlashGear

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 McGlaun) "NASA and Boeing are currently preparing the Starliner capsule for Orbital Flight Test-2 (OFT-2). The flight test is a critical portion of the testing regime to clear Starliner to carry astronauts to and from the ISS in the future. Recently, teams at the Starliner production facility at the NASA Kennedy Space Center in Florida began to fuel the Starliner crew module and service module in preparation for the OFT-2 launch on Friday, July 30."

Tens Of Thousands Sign Petition To Stop Jeff Bezos From Returning To Earth

# NPR

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e8e&t=c&data=04|01|alicia.n.brown@nasa.gov|a0eddd4970cd4681eb9508d934a36899|7005d45845be48ae8140d43d a96dd17b|0|0|637598698736764019|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiV2luMzIiLCJBTil6lk 1haWwiLCJXVCI6Mn0=|1000&sdata=n/HqWNHxYjWMMqamgE98HXfUks5qKzc/X4s2ICZJRFg=&reserved=0> (6/20, Jones) "On July 20, Amazon's founder and billionaire magnate Jeff Bezos and his brother Mark will board the New Shepard suborbital rocket system. The Bezos brothers, one auction winner with \$28 million to spare, and a fourth person will become the first crew aboard the reusable rocket for its 11-minute voyage to space."

# ISS Spacewalk

Spectrum News 13 (FL)

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02d&t=c&data=04|01|alicia.n.brown@nasa.gov|a0eddd4970cd4681eb9508d934a36899|7005d45845be48ae8140d43d a96dd17b|0|0|637598698736764019|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiV2luMzIiLCJBTil6lk 1haWwiLCJXVCI6Mn0=|1000&sdata=o2cNTIV1zxC5BxuTXTDPGo5r2auOfgOMaEk3LHco0QU=&reserved=0> (6/20)"Destination space news now, a spacewalk at the International Space Station on tap for today. Take a look at this feed from NASA's Shane Kimbrough and the European Space Agency's Thomas Pesquet installing new solar arrays today."

# ISS Spacewalk

# KABC-TV Los Angeles

<a href="https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021062102nasa&r=email-dece&l=01a-">https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021062102nasa&r=email-dece&l=01a-</a>

6e4&t=c&data=04|01|alicia.n.brown@nasa.gov|a0eddd4970cd4681eb9508d934a36899|7005d45845be48ae8140d43d a96dd17b|0|0|637598698736764019|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6lk 1haWwiLCJXVCI6Mn0=|1000&sdata=fVmWvRIZl9f1Ba3unb7Xs2nmyX35VW/4OLeE23Ll4f0=&reserved=0> (6/20) "It is a busy morning at the International Space Station. Here are live pictures of a spacewalk happening now."

Moon to Mars

Funding For Bezos Space Company Fails To Launch In House

# Wall Street Journal

<a href="https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=20210">https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=20210</a> 62102nasa&r=email-dece&l=01b-

ae7&t=c&data=04|01|alicia.n.brown@nasa.gov|a0eddd4970cd4681eb9508d934a36899|7005d45845be48ae8140d43d a96dd17b|0|0|637598698736773977|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiV2luMzIiLCJBTil6lk 1haWwiLCJXVCI6Mn0=|1000&sdata=ED2hB6S4gqmoT7MQP31o6oMJvvSMWIqnxXsvnHlvung=&reserved=0> (6/18, Rubin) "HOUSE THROWS UP ROADBLOCKS to funding for Jeff Bezos's Blue Origin space exploration company that was approved as part of the Senate's bipartisan China competition legislation last week. Members from both parties made clear the \$10 billion authorization, pushed by Washington Democratic Sen. Maria Cantwell, for a second moon lander contract (Elon Musk's SpaceX won the first contract earlier this year, while Blue Origin was one of two runnersup) was a nonstarter for the House's version of science and innovation legislation."

Space Agencies Are Learning How To Make Food On Mars And The Moon

# CNBC

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87b&t=c&data=04|01|alicia.n.brown@nasa.gov|a0eddd4970cd4681eb9508d934a36899|7005d45845be48ae8140d43d a96dd17b|0|0|637598698736773977|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6Ik 1haWwiLCJXVCI6Mn0=|1000&sdata=jl6rkX81Yra5QMAsjBPwri8tWhmYFbeyqUFZ3OJruow=&reserved=0> (6/20, Wood) "Whether from continent to continent or coast to coast, people have always made their big moves together with plants. Traveling away from Earth would be no different. Our success on other worlds will rest, in part, on the supple stems of plants. ... Space agencies from various countries have spent decades developing the technologies necessary to bring farming indoors, and now the German space agency and NASA are pushing the state-of-the-art of soil-free gardening to its limits with a greenhouse in Antarctica and laying the groundwork for their next act: farming systems where the farmers are optional."

Turkey Aims To Send Rocket To Moon In Three Years, Land Lunar Rover By 2030

#### SPACE

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379&t=c&data=04|01|alicia.n.brown@nasa.gov|a0eddd4970cd4681eb9508d934a36899|7005d45845be48ae8140d43d a96dd17b|0|0|637598698736783931|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiV2luMzliLCJBTil6lk 1haWwiLCJXVCI6Mn0=|1000&sdata=FAjfDyiLygGB0EnccFnmkiiOPnGkLn19NfKT4dJmRKE=&reserved=0> (6/18, Pultarova) "Turkey plans to send a rover to the moon by the end of the decade using a domestically built rocket engine that will first fly to the moon in a test mission in 2023. Speaking at the Global Space Exploration Conference (GLEX) 2021 in St. Petersburg, Russia, on Tuesday (June 16), Serdar Hüseyin Yildirim, president of the Turkish Space Agency (TUA), discussed details of the country's space program, which was officially unveiled by Turkey's President Recep Tayyip Erdogan in February this year."

NASA Will Send A Mannequin On A Space Mission. Here's How You Can Help Name It.

#### Florida Today

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cd2&t=c&data=04|01|alicia.n.brown@nasa.gov|a0eddd4970cd4681eb9508d934a36899|7005d45845be48ae8140d43d a96dd17b|0|0|637598698736783931|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6lk 1haWwiLCJXVCI6Mn0=|1000&sdata=haP1zCIIeUwUwFzjsgUX2oRZUeUPk3Inq+al0/cKtwM=&reserved=0> (6/18, Miranda) "NASA will send a mannequin around the moon, and you can help name it. Slated to launch in November, a mannequin will be on board an uncrewed flight test of the Space Launch System and the Orion spacecraft, NASA said in a news release. Its mission? Collect data to help astronauts on trips, such as the Artemis II spaceflight scheduled for 2023. The mannequin is designed to resemble the human body and is used in training for emergency rescues, medical education and research."

NASA Needs Your Help Naming The Dummy It's Sending To The Moon

#### **CNET** News

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081&t=c&data=04|01|alicia.n.brown@nasa.gov|a0eddd4970cd4681eb9508d934a36899|7005d45845be48ae8140d43d a96dd17b|0|0|637598698736783931|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiV2luMzIiLCJBTil6lk 1haWwiLCJXVCI6Mn0=|1000&sdata=V30AxfhJabXsAIDkH/fqBWgId3RajkhEWZnJODjfTf8=&reserved=0> (6/18, Kooser) "NASA's Artemis I mission to send an Orion spacecraft around the moon is getting more real by the moment. First, NASA assembled its massive SLS rocket. Now the mission's non-human passenger, or 'moonikin,' needs a name. The space agency announced a Name the Artemis Moonikin Challenge to decide what the man-shaped manikin will be called. The uncrewed flight test is targeting takeoff for later this year. The manikin will allow NASA to collect data on how the journey might impact a real human body."

#### Solar System and Beyond

NASA's Sudden Interest In Venus Is All About Climate Change

#### The Hill

<a href="https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021062102nasa&r=email-dece&l=020-">https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021062102nasa&r=email-dece&l=020-</a>

9ba&t=c&data=04|01|alicia.n.brown@nasa.gov|a0eddd4970cd4681eb9508d934a36899|7005d45845be48ae8140d43d a96dd17b|0|0|637598698736793888|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiV2luMzIiLCJBTil6lk 1haWwiLCJXVCI6Mn0=|1000&sdata=+3vuVvIT0RDrO68RWmki1CdKuPIawzCPeO4UAKcE/9U=&reserved=0> (6/20, Whittington) "Recently, NASA Administrator Bill Nelson announced that the space agency will send not one but two robotic probes to Venus under the Discovery program. The probes are DAVINCI+ and VERITAS. The two probes, which are due to be launched by the end of the 2020s, will be the first dedicated NASA missions to the second planet from the sun in decades. Why Venus and why now?"

Europa Volcanism & Interior Heating Modeled In Detail, Offers Research Targets For Upcoming Missions

# NASA Space Flight

<a href="https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=20210">https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=20210</a> 62102nasa&r=email-dece&l=021-

023&t=c&data=04|01|alicia.n.brown@nasa.gov|a0eddd4970cd4681eb9508d934a36899|7005d45845be48ae8140d43d a96dd17b|0|0|637598698736793888|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiV2luMzIiLCJBTil6lk 1haWwiLCJXVCl6Mn0=|1000&sdata=wr+ULYUBNwuuGwBvm98UZFWh+AOEEip7eSS9Fv42AJo=&reserved=0> (6/18, Warren) "Europa, an icy Jovian moon that likely possesses an ocean beneath its icy crust, may have an interior that is hot enough to produce volcanic activity on its seafloor. New research provides evidence that this seafloor volcanism likely occurred in the moon's past and maybe ongoing at present as well. The team of researchers, led by Dr. Marie Bhounková of Charles University in the Czech Republic, developed their own 3D models of Europa's interior and heating transfer properties to investigate the possibility of volcanism on Europa's ocean floor given other volcanism seen in the Jovian system."

NASA Struggles To Fix A Hubble Space Telescope Computer Glitch

# Engadget

<a href="https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=20210">https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=20210</a> 62102nasa&r=email-dece&l=022-

e41&t=c&data=04|01|alicia.n.brown@nasa.gov|a0eddd4970cd4681eb9508d934a36899|7005d45845be48ae8140d43d a96dd17b|0|0|637598698736803845|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiV2luMzliLCJBTil6lk 1haWwiLCJXVCI6Mn0=|1000&sdata=kOIVQN6h2qOQa+QWdFOqbuWEpjXVyB9BPOImcFism7k=&reserved=0> (6/19, Fingas) "The Hubble Space Telescope has been showing its age for a while, but a new problem is proving to be especially frustrating. As the AP reports, NASA has spent nearly a week (as of this writing) trying to fix a glitch in Hubble's payload computer. The system broke down on June 13th, and the operations team had no success either restarting the computer on the 14th or switching to a backup memory module. The agency also failed in repeated attempts with both modules on the evening of June 17th."

NASA Is Working To Restore Hubble Space Telescope Operations

#### SlashGear

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4a9&t=c&data=04|01|alicia.n.brown@nasa.gov|a0eddd4970cd4681eb9508d934a36899|7005d45845be48ae8140d43d a96dd17b|0|0|637598698736803845|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6Ik 1haWwiLCJXVCI6Mn0=|1000&sdata=SBtGBWS5itTYPBPqdwiNr8ygME/TUxagiTPn2RqIfTA=&reserved=0> (6/19, McGlaun) "The Hubble Space Telescope has been having significant troubles in orbit recently as the telescope went into safe mode after the failure of an onboard computer. NASA has confirmed that operations are underway to restore the payload computer on the Hubble telescope. Operations teams are running tests and collecting more information on the system to isolate the problem further."

Computer Problem Takes Hubble Offline

#### Space News

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76f&t=c&data=04|01|alicia.n.brown@nasa.gov|a0eddd4970cd4681eb9508d934a36899|7005d45845be48ae8140d43d a96dd17b|0|0|637598698736803845|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiV2luMzIiLCJBTil6lk 1haWwiLCJXVCI6Mn0=|1000&sdata=illx0F/7cRyjI5IEyZIEyeoxKL5Zq8vPwySEJ/+OZbg=&reserved=0> (6/19, Foust) "Spacecraft controllers are continuing to work on a faulty computer memory system on NASA's Hubble Space Telescope that has stopped telescope operations for nearly a week. A payload computer on Hubble stopped working June 13, the agency said in a June 16 statement. Engineers speculated that the computer, used to manage operations of Hubble's science instruments, malfunctioned because of a degrading memory module, putting the instruments into a safe mode."

Computer Glitch Sends Aging NASA Hubble Space Telescope Into Safe Mode

#### **CNET** News

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e32&t=c&data=04|01|alicia.n.brown@nasa.gov|a0eddd4970cd4681eb9508d934a36899|7005d45845be48ae8140d43d a96dd17b|0|0|637598698736813805|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiV2luMzliLCJBTil6lk 1haWwiLCJXVCI6Mn0=|1000&sdata=VqqyeKjc6i5diCU00uINSAMLecdCUMRpVizqvojRV6k=&reserved=0> (6/18, Kooser) "The Hubble Space Telescope has spent over three decades bringing us glorious images and data from our universe. But the spacecraft is showing its age. The Hubble team is now troubleshooting a problem with the telescope's payload computer – a piece of hardware built in the 1980s – that controls its science instruments."

Intelligent Life Probably Exists On Distant Planets - Even If We Can't Make Contact, Astrophysicist Says

#### Washington Post

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363&t=c&data=04|01|alicia.n.brown@nasa.gov|a0eddd4970cd4681eb9508d934a36899|7005d45845be48ae8140d43d a96dd17b|0|0|637598698736813805|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiV2luMzIiLCJBTil6lk 1haWwiLCJXVCI6Mn0=|1000&sdata=SXZYRIDfCvxcC2wR4DksDAxX5OFx+O3uMNsW/wuUtms=&reserved=0> (6/18) "Recently released Navy videos of what the U.S. government now classifies as 'unidentified aerial phenomena' have set off another round of speculative musings on the possibility of aliens visiting our planet. Like other astrophysicists who have weighed in on these sightings, ... Beginning in the early 1960s, scientists have tried to calculate the odds of advanced extraterrestrial life. In 1961, researchers at the NASA-funded search for extraterrestrial intelligence (SETI) developed the 'Drake Equation' to estimate how many civilizations in the Milky Way might evolve to develop the technology to emit detectable radio waves."

Space Tech

No content.

Various

'The Burning Blue' Is A Compact, Suspenseful Chronicle Of The Challenger Disaster

#### Washington Post

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1d5&t=c&data=04|01|alicia.n.brown@nasa.gov|a0eddd4970cd4681eb9508d934a36899|7005d45845be48ae8140d43d a96dd17b|0|0|637598698736823757|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiV2luMzliLCJBTil6lk 1haWwiLCJXVCl6Mn0=|1000&sdata=fBjy86Zf5LZG22XWhuQlyCmV/Bq21un+OfF6Ygl3UsM=&reserved=0> (6/18) "In the months leading up to Jan. 28, 1986, the day the space shuttle Challenger crashed, killing everyone onboard, there were ominous portents. As journalist Kevin Cook recounts in his solid, gripping new book, 'The Burning Blue: The Untold Story of Christa McAuliffe and NASA's Challenger Disaster,' the bad signs piled up: A teenage gunman had entered the New Hampshire high school where McAuliffe taught social studies and was killed by police after taking hostages. When McAuliffe and other astronaut hopefuls took a trip to an amusement park, a young employee, trying to impress them, got tangled in the machinery of a ride and died."

NASA Shuttle Crew Likely Survived First Seconds After Explosion, Book Claims

Daily Mirror (UK)

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ec4&t=c&data=04|01|alicia.n.brown@nasa.gov|a0eddd4970cd4681eb9508d934a36899|7005d45845be48ae8140d43d a96dd17b|0|0|637598698736823757|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiV2luMzIiLCJBTil6lk 1haWwiLCJXVCl6Mn0=|1000&sdata=GQIsTDMh8xhqz+5oiEGqgcED+YyhLBnr2w2Dm77M9eI=&reserved=0> (6/19, Merrifield) "The tragic crew of NASA's Challenger space shuttle likely survived the devastating explosion before the capsule crashed into the Atlantic, a new book claims. Crew members Michael Smith, Francis 'Dick' Scobee, Ronald McNair, Ellison Onizuka, Judith Resnik, Gregory Jarvis and Christa McAuliffe were ejected into the fireball 73 seconds after the launch in Florida in 1986."

NASA Launches Mission Equity Initiative To Include Underserved Populations

# SlashGear

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61f&t=c&data=04|01|alicia.n.brown@nasa.gov|a0eddd4970cd4681eb9508d934a36899|7005d45845be48ae8140d43d a96dd17b|0|0|637598698736823757|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6Ik 1haWwiLCJXVCI6Mn0=|1000&sdata=gjL49VUCvUd/5OzhN10bdy6FjxtohZtiBDREtOoxIc8=&reserved=0> (6/20, McGlaun) "NASA announced recently that it was launching Mission Equity which is described as a comprehensive effort to assess expansion and modification of agency programs, procurements, grants, and policies. The goal is to examine what potential barriers and challenges exist for communities historically underrepresented and underserved. NASA administrator Bill Nelson says the agency is a 21st century agency with 22nd century goals."

Rep. Waltz Reacts To Latest 'Woke' NASA Ad

#### Fox News

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579&t=c&data=04|01|alicia.n.brown@nasa.gov|a0eddd4970cd4681eb9508d934a36899|7005d45845be48ae8140d43d a96dd17b|0|0|637598698736833716|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6lk 1haWwiLCJXVCI6Mn0=|1000&sdata=V8NWs8MGGFbh3tAPB1FSf4BIORN1QfFulwbnlxXg8x8=&reserved=0> (6/18) "MICHAEL WALTZ: More diversity in space than our astronauts, great. What we need to be focused on is getting more Americans into space because right now the Chinese are passing us. They are kicking our butts up there, and it's a real problem. Brian, more launches, more Chinese launches in space last year than the rest of the world combined, including the United States. As you said, just put their own astronauts in their own space station, which is brand new and being built, ours is 30 years old and decrepit."

'Reach Those We've Never Reached Before': NASA Joins The Woke Train With 'Mission Equity'

#### Daily Caller

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89f&t=c&data=04|01|alicia.n.brown@nasa.gov|a0eddd4970cd4681eb9508d934a36899|7005d45845be48ae8140d43d a96dd17b|0|0|637598698736833716|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiV2luMzIiLCJBTil6lk 1haWwiLCJXVCI6Mn0=|1000&sdata=4yhaONFpKO1Bfw+ZfJcoLYKkx00PNTZrvhdbVNPVQ20=&reserved=0> (6/18, Hall) "The National Aeronautics and Space Administration is launching a new mission on Friday to analyze what parts of its agency have potential barriers for historically 'underrepresented and underserved' communities. Mission Equity is an endeavor to look at the agency's programs, procurements, grants and policies to examine what challenges exist for minorities who want to join the National Aeronautics and Space Administration (NASA)."

NASA Launches Mission For 'Equity'

#### Fox News

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20f&t=c&data=04|01|alicia.n.brown@nasa.gov|a0eddd4970cd4681eb9508d934a36899|7005d45845be48ae8140d43d a96dd17b|0|0|637598698736843669|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6Ik 1haWwiLCJXVCI6Mn0=|1000&sdata=ARSVC2VtHLHHW4cC0sYdzoE1QyNkRm2ZfJ4c63gFXRU=&reserved=0> (6/18, Musto) "NASA announced the launch of a new diversity initiative this week called 'Mission Equity.' It's a move the agency said would aid in the effort to assess expansion and modification of its programs, grants, procurements and policies in addition to scrutinizing potential barriers and challenges for communities that are 'historically underrepresented and underserved.'"

If You Care About The US, Root For China To Score A Win In Space

#### The Hill

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2e4&t=c&data=04|01|alicia.n.brown@nasa.gov|a0eddd4970cd4681eb9508d934a36899|7005d45845be48ae8140d43d a96dd17b|0|0|637598698736843669|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik 1haWwiLCJXVCI6Mn0=|1000&sdata=bGjhViAjEwI53xnEJi3rtM3/IUqe10PZuq38dg0aq/4=&reserved=0> (6/19, Mackinnon) "It can be argued that members of Congress and presidents sometimes appear to put their personal reelections before all else — occasionally, this happens even at the expense of the long-term welfare of America. For politicians who view their lives and personal advancement in increments of two-, four- and six-year windows, tangible, immediate vote-influencing issues tend to dominate their policy decisions. ... The Biden administration and many members of Congress appear to have placed American preeminence in space back on the rear burner, or they've knocked it off the stove entirely. They're seeking to allocate more of NASA's space budget to climate change and other issues."

NASA, USPS Team Up To Create Stunning Sun Stamps

#### Fox News

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fe2&t=c&data=04|01|alicia.n.brown@nasa.gov|a0eddd4970cd4681eb9508d934a36899|7005d45845be48ae8140d43d a96dd17b|0|0|637598698736843669|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiV2luMzIiLCJBTil6lk 1haWwiLCJXVCI6Mn0=|1000&sdata=n/1RiJjH3L8ulxDPdKV7Lm068bQc5T/oxSj/nhIQw7M=&reserved=0> (6/19, Musto) "The U.S. Postal Service has issued a new set of stamps celebrating 10 years of sun-watching from the National Aeronautics and Space Administration's (NASA) Solar Dynamics Observatory (SDO). On June 18, the stamps were presented during a ceremony at the Greenbelt Main Post Office in Maryland, according to a Friday NASA release."

NASA's Images Of The Sun Find A Place On Postage Stamps

#### SlashGear

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418&t=c&data=04|01|alicia.n.brown@nasa.gov|a0eddd4970cd4681eb9508d934a36899|7005d45845be48ae8140d43d a96dd17b|0|0|637598698736853625|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiV2luMzliLCJBTil6lk 1haWwiLCJXVCl6Mn0=|1000&sdata=JalYFI9x5bDdnDysfrRDUz6upMWwwMRMyleFp33oMKs=&reserved=0> (6/19, McGlaun) "The U.S. Postal Service has issued a new set of postage stamps highlighting views of the sun taken from the NASA Solar Dynamics Observatory (SDO). The stamps have a black background with images of the sun showcasing a range of activity observed by the Solar Dynamics Observatory since its launch. The postal service issued the Sun Science stamps during a ceremony held at the Greenbelt Main Post Office in Maryland on June 18."

US Postal Service Releases 'Sun Science' Stamps With NASA Imagery

#### SPACE

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ee2&t=c&data=04|01|alicia.n.brown@nasa.gov|a0eddd4970cd4681eb9508d934a36899|7005d45845be48ae8140d43d a96dd17b|0|0|637598698736853625|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6lk 1haWwiLCJXVCI6Mn0=|1000&sdata=4plCrkatU4fA+JtYCJ/m2yy8395dpZZ2V52qYaDkQ7s=&reserved=0> (6/18, PearIman) "The sun has risen on a new set of postage stamps. The United States Postal Service (USPS) on Friday (June 18) released 'Sun Science,' a collection of 10 stamps celebrating the study of heliophysics using the imagery from a NASA probe."

Ex-Astronaut Melroy Confirmed As Deputy NASA Administrator

#### Aviation Week

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25d&t=c&data=04|01|alicia.n.brown@nasa.gov|a0eddd4970cd4681eb9508d934a36899|7005d45845be48ae8140d43d

a96dd17b|0|0|637598698736863582|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiV2luMzliLCJBTil6lk 1haWwiLCJXVCl6Mn0=|1000&sdata=9oezBRa2DPt1r7CDJjdLsJUkpHjGtG2Z5WAuOhS8WTE=&reserved=0> (6/18) "Former space shuttle commander and retired U.S. Air Force Col. Pamela Melroy was confirmed by the U.S. Senate to become the deputy administrator of NASA, serving alongside NASA chief Bill Nelson."

Ex-NASA Scientist Imprisoned For 'Long-Running Deception' Working In China

# FedScoop

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815&t=c&data=04|01|alicia.n.brown@nasa.gov|a0eddd4970cd4681eb9508d934a36899|7005d45845be48ae8140d43d a96dd17b|0|0|637598698736863582|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiV2luMzIiLCJBTil6lk 1haWwiLCJXVCI6Mn0=|1000&sdata=UjRgfPFzq+n7WvdmtGYvj5SXby1v5JoWLQVqJJw+G1g=&reserved=0> (6/18, Nyczepir) "U.S. District Judge P. Kevin Castel sentenced a former NASA nanotechnologist, suspected of giving Chinese nationals access to its facilities, to 30 days in prison Wednesday for lying to federal agents about working at a Chinese research university. Meyya Meyyappan, 66, served as chief scientist for exploration technology at the Center for Nanotechnology at NASA's Ames Research Center, until he was caught lying to the FBI and NASA Office of Inspector General about being a visiting professor at Soochow University for an estimated \$1.4 million over five years."

NASA Commemorates Juneteenth With Historic View From Space

# SPACE

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748&t=c&data=04|01|alicia.n.brown@nasa.gov|a0eddd4970cd4681eb9508d934a36899|7005d45845be48ae8140d43d a96dd17b|0|0|637598698736863582|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik 1haWwiLCJXVCI6Mn0=|1000&sdata=c/Mj+kGp090cF1PjIADUGasBno3UcMTcEZQJSv+ngII=&reserved=0> (6/18, Gohd) "NASA is commemorating Juneteenth on Saturday (June 19) with a historic view from space. Saturday, June 19 marks Juneteenth, officially Juneteenth National Independence day and also known as Jubilee Day, Emancipation Day and Black Independence Day, which celebrates the end of slavery in the U.S."

NASA, USPS Release Stamp Set

# KTLA-TV Los Angeles

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b89&t=c&data=04|01|alicia.n.brown@nasa.gov|a0eddd4970cd4681eb9508d934a36899|7005d45845be48ae8140d43d a96dd17b|0|0|637598698736873538|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiV2luMzliLCJBTil6lk 1haWwiLCJXVCI6Mn0=|1000&sdata=R58EwUWjq5+zgVeQ6a7g8qT85uGJpm7Zh0akkCyu608=&reserved=0> (6/20) "NASA is teaming up with the US postal service to release a new set of stamps. The new stamps celebrate NASA's decade long observation of the sun."

# Other

Russia And China Outline Joint Lunar Station Road Map

# Aviation Week

<a href="https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=20210">https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=20210</a> 62102nasa&r=email-dece&l=035-

053&t=c&data=04|01|alicia.n.brown@nasa.gov|a0eddd4970cd4681eb9508d934a36899|7005d45845be48ae8140d43d

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SpaceX Successfully Launched GPS III Space Vehicle 05

#### SlashGear

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e48&t=c&data=04|01|alicia.n.brown@nasa.gov|a0eddd4970cd4681eb9508d934a36899|7005d45845be48ae8140d43d a96dd17b|0|0|637598698736883493|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiV2luMzliLCJBTil6lk 1haWwiLCJXVCI6Mn0=|1000&sdata=zOT6MQDtAoAzY9I2B5d08Q0/mUvUh5lK1OPXPgGLQIM=&reserved=0> (6/20, McGlaun) "SpaceX is celebrating another successful launch of a commercial satellite that happened on Thursday, June 17, at 12:09 PM EDT. A previously flown Falcon 9 rocket launched from Space Lodge Complex 40 at Cape Canaveral Space Force Station in Florida, pushing the GPS III Space Vehicle 05 mission and orbit. The same Falcon 9 booster used in this mission was previously flown to put GPS III and Space Vehicle 04 into orbit."

Space Tourism Startup Flies Test Balloon 20 Miles High Over Florida

#### UPI

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7cc&t=c&data=04|01|alicia.n.brown@nasa.gov|a0eddd4970cd4681eb9508d934a36899|7005d45845be48ae8140d43d a96dd17b|0|0|637598698736883493|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6lk 1haWwiLCJXVCI6Mn0=|1000&sdata=IRQarvL5JqdTQQc9/JCTx3R3K7bHaRKZ7UCI9CBvbWE=&reserved=0> (6/18, Brinkmann) "Space tourism company Space Perspective successfully flew a prototype of its giant stratospheric balloon 20 miles high over Florida early Friday, the company announced. The balloon lifted off at 5:23 a.m. EDT from the Space Coast Regional Airport near Kennedy Space Center and splashed down 6 hours and 39 minutes later in the Gulf of Mexico, the company reported. Crews recovered the balloon and a test article representing the Neptune capsule that eventually may carry people."

Space Force Launches Fifth GPS III Satellite For More Secure Positioning

#### Federal Times

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d35&t=c&data=04|01|alicia.n.brown@nasa.gov|a0eddd4970cd4681eb9508d934a36899|7005d45845be48ae8140d43d a96dd17b|0|0|637598698736883493|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiV2luMzliLCJBTil6lk 1haWwiLCJXVCI6Mn0=|1000&sdata=wWVp3ioqRqML3S0oY0EcZgPykIjzzAKaK/xYy+wdTec=&reserved=0> (6/18, Strout) "The U.S. Space Force sent the fifth GPS III satellite into orbit June 17, the last piece needed for a constellation that will one day provide a more secure positioning signal for the military. The satellite, the first heavy national security payload with a cost-saving reusable booster, had a 12,550-mile journey with an onboard liquid apogee engine to reach its orbit. It will go through two weeks of on-orbit testing and checkout, and is expected to enter operational use in a few months, where it's advanced capabilities will contribute to the full GPS constellation."

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Editor's Note

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#### Washington Post

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62e&t=c&data=04|01|alicia.n.brown@nasa.gov|ed2ac2c0eb3a4d29aa7608d936ff26db|7005d45845be48ae8140d43da 96dd17b|0|0|637601291769087137|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiV2luMzIiLCJBTil6lk1 haWwiLCJXVCI6Mn0=|1000&sdata=jiBW/csv2AKXTdl4+W51re9N43M8TGWCnDZPfn0smfc=&reserved=0> (6/23) "Want to jump out of a perfectly good airplane and hope the parachute opens? Be our guest. Or try bungee jumping? Sure, go for it. And, yes, feel free to strap yourself into that roller coaster and loop-de-loop until you turn green. ... DeFazio is also taking aim at the FAA's dual mandate to both regulate and promote the space industry, which he said is a conflict of interest that could endanger the public. The FAA, he said in an interview, 'should not be promoting commercial space. NASA can promote commercial space. The Commerce Department can promote commercial space. The FAA's job is to regulate in the public interest."

Opinion: Americans Should Worry More About China Than Russia.

The New Space Race Shows Why. Washington Post (6/23) "The salute was carried live to 1 billion people but went unnoticed by most of the world. Three astronauts aboard China's new rival to the International Space Station gave military salutes to President Xi Jinping during a videoconference broadcast Wednesday on state television. ... NASA

Administrator Bill Nelson held up a photograph of China's Mars rover during a recent House hearing as he requested more funding for the Human Landing System."

NASA Chief Reminds Congress They're The Ones Not Funding A Lunar Lander

# Ars Technica

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025&t=c&data=04|01|alicia.n.brown@nasa.gov|ed2ac2c0eb3a4d29aa7608d936ff26db|7005d45845be48ae8140d43da 96dd17b|0|0|637601291769087137|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiV2luMzliLCJBTil6lk1 haWwiLCJXVCI6Mn0=|1000&sdata=4pBcGOqru8X77nVpm2c6c8Dsgvgk7FBt/JIAoL4u19w=&reserved=0> (6/23, Berger) "NASA Administrator Bill Nelson said the space agency expects a decision from the US Government Accountability Office on a lunar lander protest by August 4. This would seem to set a firm timeline after which NASA can move forward with its Artemis program. Nelson's comments came in response to members of the US House Science, Space, and Technology Committee asking for specifics on Artemis, which NASA intends to use to return humans to the Moon and eventually go on to Mars."

# Space Force Set To Defend Deep Space

# Washington Times

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99c&t=c&data=04|01|alicia.n.brown@nasa.gov|ed2ac2c0eb3a4d29aa7608d936ff26db|7005d45845be48ae8140d43da 96dd17b|0|0|637601291769097085|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiV2luMzliLCJBTil6lk1 haWwiLCJXVCI6Mn0=|1000&sdata=RZuFp+PJOwPbC7F2urAJ/Yx5bVuVbdHDrTmp0f/f4jA=&reserved=0> (6/23, Gertz) "U.S. military space forces are preparing to defend systems beyond Earth's orbit in areas extending to the moon and beyond, according to a report by the Air Force Research Laboratory. Defending cislunar space — the volume of space outside of geosynchronous Earth orbit and within the moon's gravitational pull — is outlined in a memorandum of understanding between the Space Force and NASA. The report was made public this week after China and Russia announced plans for a joint international research station to be built on the moon."

Flight

DLR-NASA Flight Tests Show SAFs Can Reduce Climate Impact Of Contrails

# Aviation Week

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e4b&t=c&data=04|01|alicia.n.brown@nasa.gov|ed2ac2c0eb3a4d29aa7608d936ff26db|7005d45845be48ae8140d43da 96dd17b|0|0|637601291769097085|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiV2luMzIiLCJBTil6lk1 haWwiLCJXVCI6Mn0=|1000&sdata=rujQnvAc6G8NeZw1k3mH/DwKN9OLmGQYqo/tkU19u10=&reserved=0> (6/23, Wick) "Cleaner-burning sustainable fuels can reduce aircraft contrail cloudiness and their contribution to aviation's climate impact, joint research by NASA and German aerospace center DLR has concluded. Burning low-aromatic sustainable aviation fuel (SAF) can result in a 50-70% reduction in soot-particle emissions and the resulting ice crystal concentrations, reducing the warming effect from contrail cirrus clouds, according to research published on May 17 in Nature Communications journal Earth & Environment."

# Earth

'Strawberry' Supermoon To Adorn Night Sky Wednesday Through Friday

#### Washington Post

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e7e&t=c&data=04|01|alicia.n.brown@nasa.gov|ed2ac2c0eb3a4d29aa7608d936ff26db|7005d45845be48ae8140d43da 96dd17b|0|0|637601291769107049|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6lk1 haWwiLCJXVCI6Mn0=|1000&sdata=4zjC3BKILH4R1vBEV5LZmie/L644RqXO0rA40on3GfI=&reserved=0> (6/23) "The first full moon of the summer is set to rise gracefully in the eastern sky Wednesday through Friday evenings and will appear a little plumper and brighter than normal. The June 'Strawberry Moon' is marginally considered a supermoon, according to NASA, the last in a series. Supermoons are those full moons that pass the Earth near the closest point in their monthly orbit (known as perigee) and can appear up to 30 percent brighter and 14 percent bigger than full moons that pass at their greatest distance (known as apogee)."

Last Supermoon Of 2021 Is This Week

#### NBC News

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How To See Tomorrow's Strawberry Moon, The Last Supermoon Of 2021

#### **CNET** News

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The Strawberry Moon: How, When To Watch It

#### Fox News

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835&t=c&data=04|01|alicia.n.brown@nasa.gov|ed2ac2c0eb3a4d29aa7608d936ff26db|7005d45845be48ae8140d43da 96dd17b|0|0|637601291769117006|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6lk1 haWwiLCJXVCI6Mn0=|1000&sdata=BV/4N9EIta10udpmBO9DkR1zTE2wdSPRYu0FEdAziJA=&reserved=0> (6/23, Musto) "Stargazers around the world will be able to enjoy the glow of the Strawberry Moon on Thursday night. According to NASA, the 'marginal supermoon' will appear opposite the sun in Earth-based longitude at 2:40 p.m. ET for much of the Earth, though it won't be visible until it appears above the horizon."

#### Humans in Space

Richard Branson And Jeff Bezos Will Fly To Space At Their Own Risk. Does That Make It Right For Everyone?

#### Washington Post

<a href="https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=20210">https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=20210</a> 62402nasa&r=email-cf10&l=00b-

46b&t=c&data=04|01|alicia.n.brown@nasa.gov|ed2ac2c0eb3a4d29aa7608d936ff26db|7005d45845be48ae8140d43da 96dd17b|0|0|637601291769126960|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiV2luMzIiLCJBTil6lk1 haWwiLCJXVCI6Mn0=|1000&sdata=4RC6x3jJqlfthqc6MnUrz2Zh3QLV4VDIi4mBK55Mqkw=&reserved=0> (6/23) "Want to jump out of a perfectly good airplane and hope the parachute opens? Be our guest. Or try bungee jumping? Sure, go for it. And, yes, feel free to strap yourself into that roller coaster and loop-de-loop until you turn green. ... DeFazio is also taking aim at the FAA's dual mandate to both regulate and promote the space industry, which he said is a conflict of interest that could endanger the public. The FAA, he said in an interview, 'should not be promoting commercial space. NASA can promote commercial space. The Commerce Department can promote commercial space. The FAA's job is to regulate in the public interest.""

SpaceX Sends Thousands Of Baby Squid To Space Station

#### The Hill

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086&t=c&data=04|01|alicia.n.brown@nasa.gov|ed2ac2c0eb3a4d29aa7608d936ff26db|7005d45845be48ae8140d43da 96dd17b|0|0|637601291769126960|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6lk1 haWwiLCJXVCI6Mn0=|1000&sdata=XnoKcqh/ooSFjsUNhyKEPZdW2TAIpu2N6OVzvEInWG8=&reserved=0> (6/23, Spencer) "One dozen bobtail squid that were raised at the Kewalo Marine Laboratory at the University of Hawaii boarded the International Space Station after catching a ride from a SpaceX resupply mission, according to The Guardian. The space mission is part of University of Hawaii doctoral student Jamie Foster's research on the effects of spaceflight on squid, The Honolulu Star-Advertiser reported, to help determine how long humans can remain healthy in space."

Tide To Develop First Laundry Detergent For Astronauts' Clothing On Space Station

#### SPACE

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86a&t=c&data=04|01|alicia.n.brown@nasa.gov|ed2ac2c0eb3a4d29aa7608d936ff26db|7005d45845be48ae8140d43da 96dd17b|0|0|637601291769136917|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiV2luMzliLCJBTil6lk1 haWwiLCJXVCI6Mn0=|1000&sdata=4MyDcG/Cf1rhgX5x8v5Uon01WOdBRiQj+Wln+nYYSZE=&reserved=0> (6/23, Pearlman) "Future astronauts may not need to worry about moon dust and Mars soil stains, thanks to an effort by Tide to develop a laundry detergent for use in space. The Procter & Gamble (P&G) laundry brand has partnered with NASA to explore how to clean astronauts' clothes aboard the International Space Station (ISS), as well as on future crewed missions to the moon and Mars. Under the terms of the new Space Act Agreement, NASA may study Tide's cleaning solutions, while the company works to bring the lessons from its off-planet tests to its line of everyday consumer products for use on Earth."

Equilibrium — Presented By NextEra Energy — A New Final Frontier: Washing Dirty Laundry In Space

# The Hill

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0a6&t=c&data=04|01|alicia.n.brown@nasa.gov|ed2ac2c0eb3a4d29aa7608d936ff26db|7005d45845be48ae8140d43da 96dd17b|0|0|637601291769136917|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1 haWwiLCJXVCI6Mn0=|1000&sdata=H0c5eqxvG0HBNFE8axrvEl6UWjYV3bJ3LCBkFbImjsA=&reserved=0> (6/23, Elbein, Udasin) "NASA is teaming up with Procter & Gamble Co. to develop a washer-dryer combo that could eventually operate on the moon or even Mars using minimal amounts of water and detergent, the Associated Press reported. Up until this point, astronauts dealt with their tons of dirty laundry each year by throwing it away: launching their garments to burn up in the atmosphere aboard discarded cargo ships, according to the AP."

NASA And Tide Team Up To Deal With Dirty Laundry In Space

#### BGR

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bf2&t=c&data=04|01|alicia.n.brown@nasa.gov|ed2ac2c0eb3a4d29aa7608d936ff26db|7005d45845be48ae8140d43da 96dd17b|0|0|637601291769146872|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiV2luMzliLCJBTil6lk1 haWwiLCJXVCI6Mn0=|1000&sdata=JenbjYaDtI0SulhiVSV66zLDrTkdTiEXDBSs7CmeTF4=&reserved=0> (6/23) "Humans have been living in space for years, but it took endless research and planning to make that possible. Everything we take for granted on the surface of the planet, where we have gravity and resources to accommodate our every whim, has to be engineered to work in space. Scientists have yet to solve every problem required to make living in space for extended periods comfortable to astronauts and affordable for the governments and companies that might be footing the bill."

NASA Looking To Solve Dirty Laundry Issue In Space

#### **CBS** News

cb5&t=c&data=04|01|alicia.n.brown@nasa.gov|ed2ac2c0eb3a4d29aa7608d936ff26db|7005d45845be48ae8140d43da 96dd17b|0|0|637601291769146872|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6lk1 haWwiLCJXVCI6Mn0=|1000&sdata=IRjJ81k6ZpM35aMOPZntr6xjA9hbIV9dU1MNp46CaxU=&reserved=0> (6/23) "How do astronauts do laundry in space? They don't. They wear their underwear, gym clothes and everything else until they can't take the filth and stink anymore, then junk them. NASA wants to change that. CBS Los Angeles has the details."

On Sale: \$125,000 Balloon Trips To The Edge Of Space

# CNN

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936&t=c&data=04|01|alicia.n.brown@nasa.gov|ed2ac2c0eb3a4d29aa7608d936ff26db|7005d45845be48ae8140d43da 96dd17b|0|0|637601291769146872|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6lk1 haWwiLCJXVCI6Mn0=|1000&sdata=yC/2D1ePYIjybfY0QPAIgqqrliVfi/Ir8Cafj5tLwmc=&reserved=0> (6/23) "If you're trying to avoid airborne viruses, heading to a near vacuum might not be the worst idea. A Florida company is planning to fly passengers to the edge of space in a high-tech version of a hot air balloon, with a pilot and up to eight travelers riding in a pressurized capsule suspended from an enormous blimp."

Florida-Based Space Balloon Company Launches Ticket Sales

# UPI

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8cb&t=c&data=04|01|alicia.n.brown@nasa.gov|ed2ac2c0eb3a4d29aa7608d936ff26db|7005d45845be48ae8140d43da 96dd17b|0|0|637601291769156827|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiV2luMzliLCJBTil6lk1 haWwiLCJXVCI6Mn0=|1000&sdata=ZOasUoaiUHFIJIaligGUK+ZPYPXTSyHtuYLt5orkSp8=&reserved=0> (6/23, Brinkmann) "A new space tourism company began to sell tickets Wednesday for six-hour balloon rides to the stratosphere starting in 2024. The price of a seat: \$125,000. The company, Florida-based Space Perspective, plans up to 25 flights in the first year into what is the second major layer of the Earth's atmosphere and extends to about 31 miles, or more than 163,000 feet, above the planet's surface."

A Startup Offering To Take Tourists To Space In A Ship Lifted By An Enormous Balloon Is Selling Tickets For \$125,000 A Ride

#### Insider

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97f&t=c&data=04|01|alicia.n.brown@nasa.gov|ed2ac2c0eb3a4d29aa7608d936ff26db|7005d45845be48ae8140d43da 96dd17b|0|0|637601291769156827|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiV2luMzliLCJBTil6lk1 haWwiLCJXVCI6Mn0=|1000&sdata=aDKfDTYgDXCr2bRV2R8XdZu6uToeGWGd9rmPEi7tLwc=&reserved=0> (6/23) "Forget airplanes, cruises, and hotels. Space Perspective wants to take you on a \$125,000 luxury trip to the 'edge of space,' according to the company. Spaceship Neptune. ... But don't picture your typical NASA rocket ship."

More Than 22,000 Apply To Join European Space Agency's Astronaut Corps, A New Record

#### SPACE

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475&t=c&data=04|01|alicia.n.brown@nasa.gov|ed2ac2c0eb3a4d29aa7608d936ff26db|7005d45845be48ae8140d43da 96dd17b|0|0|637601291769166784|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6lk1 haWwiLCJXVCI6Mn0=|1000&sdata=wcp/xFjqQL6fg8sS4p54c/OMXExcbSI3njqY1aR1XWA=&reserved=0> (6/23, Pultarova) "The European Space Agency (ESA) received a record number of applications for its recently closed call for new astronauts, with more than 22,000 people applying — nearly three times as many applicants as in the previous astronaut recruitment round in 2008. In addition to that, ESA representatives said in a press briefing Wednesday (June 23) that a record number of women had applied: 5,419 compared to 1,287 in 2008."

European Space Agency Seeks Astronaut Applicants With Physical Disabilities

#### New York Daily News

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de2&t=c&data=04|01|alicia.n.brown@nasa.gov|ed2ac2c0eb3a4d29aa7608d936ff26db|7005d45845be48ae8140d43da 96dd17b|0|0|637601291769166784|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6lk1 haWwiLCJXVCI6Mn0=|1000&sdata=tLo5KiLm3QC1Ej4hWhRIghbgGUm9VA8epzz/hfsxBHU=&reserved=0> (6/24, Braine) "European Space Agency seeks astronaut applicants with physical disabilities"

Europe Seeks Disabled Astronauts, More Women In Space

# AP

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"The European Space Agency says it was 'blown away' by the record number of applicants — more than 22,000 — hoping to become the continent's next generation of space travelers, including more women than ever and some 200 people with disabilities. In releasing the results of a new recruitment drive aimed at more astronaut diversity, the agency acknowledged Wednesday that it still has work to do on gender balance."

Thousands Of People Want To Send Jeff Bezos Into Space Forever

#### The Hill

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820&t=c&data=04|01|alicia.n.brown@nasa.gov|ed2ac2c0eb3a4d29aa7608d936ff26db|7005d45845be48ae8140d43da 96dd17b|0|0|637601291769176742|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiV2luMzliLCJBTil6lk1 haWwiLCJXVCI6Mn0=|1000&sdata=6oCQ3+IVDfH4E03FXK4vjYCv3yzyVXCok8WMNXk2twg=&reserved=0> (6/23, Spencer) "The second richest man and founder of Amazon, Jeff Bezos, is going to be launched into space as part of his company Blue Origin. However, once Bezos has blasted off, there are some who wish to have him lost in space, The Guardian reported."

The Date Of Jeff Bezos' Trip To Space Isn't A Coincidence — It's The Anniversary Of The Apollo 11 Mission To The Moon

#### Insider

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6b5&t=c&data=04|01|alicia.n.brown@nasa.gov|ed2ac2c0eb3a4d29aa7608d936ff26db|7005d45845be48ae8140d43da 96dd17b|0|0|637601291769186698|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6lk1 haWwiLCJXVCI6Mn0=|1000&sdata=TpE4FA5/Pv2rXrR7Vqb/p2tVVXAWV+rrqa3TkIOqMhM=&reserved=0> (6/23, Hartmans) "Jeff Bezos' trip aboard a Blue Origin rocket next month will take place on a fortuitous day in space history. The 11-minute trip 62 miles above Earth will take Bezos to the edge of space. Inside Blue Origin's New Shepard spacecraft, Bezos, his brother Mark, the unnamed tourist who paid \$28 million for the opportunity, and a fourth passenger will have three minutes to float around the spacecraft and view Earth from afar — or gaze into the depths of outer space."

NASA, Tide Partner On Detergent For Astronauts

#### KCBS-TV Los Angeles

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f3e&t=c&data=04|01|alicia.n.brown@nasa.gov|ed2ac2c0eb3a4d29aa7608d936ff26db|7005d45845be48ae8140d43da 96dd17b|0|0|637601291769186698|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1 haWwiLCJXVCI6Mn0=|1000&sdata=RdHbult7y9mdiye8ujqLVqjYIvTaVRtby4BYUmiTVvM=&reserved=0> (6/23) "NASA teaming up with Tide to figure out a way to get laundry done in orbit. Never thought of this."

#### Moon to Mars

Opinion: Americans Should Worry More About China Than Russia. The New Space Race Shows Why.

#### Washington Post

<a href="https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=20210">https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=20210</a>

haWwiLCJXVCI6Mn0=|1000&sdata=moCp7mnsTpPsCxckx9yshfFILo7DgokdLo82aOU5KA0=&reserved=0> (6/23) "The salute was carried live to 1 billion people but went unnoticed by most of the world. Three astronauts aboard China's new rival to the International Space Station gave military salutes to President Xi Jinping during a videoconference broadcast Wednesday on state television. ... NASA Administrator Bill Nelson held up a photograph of China's Mars rover during a recent House hearing as he requested more funding for the Human Landing System."

NASA Chief Reminds Congress They're The Ones Not Funding A Lunar Lander

# Ars Technica

<a href="https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=20210">https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=20210</a> 62402nasa&r=email-cf10&l=01b-

6d6&t=c&data=04|01|alicia.n.brown@nasa.gov|ed2ac2c0eb3a4d29aa7608d936ff26db|7005d45845be48ae8140d43da 96dd17b|0|0|637601291769196654|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6lk1 haWwiLCJXVCI6Mn0=|1000&sdata=81pZJhG5kCniPeRcvIYoNVx6s6xgKFTunq2ApEGYITs=&reserved=0> (6/23, Berger) "NASA Administrator Bill Nelson said the space agency expects a decision from the US Government Accountability Office on a lunar lander protest by August 4. This would seem to set a firm timeline after which NASA can move forward with its Artemis program. Nelson's comments came in response to members of the US House Science, Space, and Technology Committee asking for specifics on Artemis, which NASA intends to use to return humans to the Moon and eventually go on to Mars."

NASA Chief Promises More Moon, Mars Cost, Schedule Details

# Aviation Week

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540&t=c&data=04|01|alicia.n.brown@nasa.gov|ed2ac2c0eb3a4d29aa7608d936ff26db|7005d45845be48ae8140d43da 96dd17b|0|0|637601291769206613|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6lk1 haWwiLCJXVCI6Mn0=|1000&sdata=cH4QcvUa80ZaLOCzwGBMY6HPkvjja2T4iQaDbeonfj0=&reserved=0> (6/23) "By the end of this year Congress can anticipate a detailed cost and schedule assessment for NASA's efforts to return human explorers to the Moon and prepare for expeditions to Mars, agency Administrator Bill Nelson says. Complicating matters is a U.S. Government Accountability Office (GAO)..."

NASA, Nelson Push For Annual Moon Landings For 'A Dozen Years'

# UPI

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595&t=c&data=04|01|alicia.n.brown@nasa.gov|ed2ac2c0eb3a4d29aa7608d936ff26db|7005d45845be48ae8140d43da 96dd17b|0|0|637601291769206613|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1 haWwiLCJXVCI6Mn0=|1000&sdata=aKCTCWP3YVijFAMcaBE0Hyfxy91zhl57QyBLKkJPDjg=&reserved=0> (6/23, Brinkmann) "NASA needs crewed lunar landings every year for 'a dozen years,' the agency's administrator, Bill Nelson, said in a House of Representatives committee hearing Wednesday. Nelson, who became administrator May 3, said Congress hasn't appropriated enough money for the nation's coming lunar aspirations."

Nelson Says Artemis Plans Pending Decision On GAO Protest

# Space News

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haWwiLCJXVCI6Mn0=|1000&sdata=In/ROUZxD/MmkEuYPyJUUYh44JWLfxxceoHaaQPOGok=&reserved=0> (6/23, Foust) "NASA Administrator Bill Nelson told a House committee June 23 that NASA is awaiting a decision from the Government Accountability Office on protests of the agency's lunar lander contract before releasing more details on plans to return humans to the moon. Testifying before the House Science Committee, Nelson said those plans will depend on whether the GAO upholds protests filed by Blue Origin and Dynetics of NASA's award of a single Human Landing System (HLS) contract to SpaceX in April. The GAO has until Aug. 4 to rule on the two protests."

Martian Dust Could End NASA's InSight Mission In A Matter Of Months

#### Gizmodo

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1d8&t=c&data=04|01|alicia.n.brown@nasa.gov|ed2ac2c0eb3a4d29aa7608d936ff26db|7005d45845be48ae8140d43da 96dd17b|0|0|637601291769216569|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6lk1 haWwiLCJXVCI6Mn0=|1000&sdata=FlseJWXqNBh1OYwCH5720c+ZHj+z2FeoDqa5BW/RamM=&reserved=0> (6/23, Dvorsky) "Dwindling access to power, the result of dust settling onto solar panels, is threatening to end NASA's InSight Mars mission by April of next year. News of InSight's worrisome condition was announced on June 21 at a meeting of NASA's Mars Exploration Program Analysis Group, as SpaceNews reports. The steady buildup of dust on the probe's solar arrays has been 'considerable,' as Bruce Banerdt, principal investigator for the InSight mission at NASA's Jet Propulsion Laboratory, explained during the meeting."

Masten Delays First Lunar Lander Mission

#### Space News

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0db&t=c&data=04|01|alicia.n.brown@nasa.gov|ed2ac2c0eb3a4d29aa7608d936ff26db|7005d45845be48ae8140d43da 96dd17b|0|0|637601291769226513|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiV2luMzIiLCJBTil6lk1 haWwiLCJXVCI6Mn0=|1000&sdata=0goTl9Gtxf3uIC7zOYTm8lpd758/0c2YiqIA+erRI+8=&reserved=0> (6/23, Foust) "Masten Space Systems is pushing back the launch of its first lunar lander mission by nearly a year, the latest in a series of delays by companies with NASA contracts to transport payloads to the moon. Masten said June 23 that its Masten Mission 1 lander, which had been scheduled to launch in December 2022 to land near Haworth Crater in the south polar regions of the moon, will instead launch in November 2023. The company blamed the delay on the cumulative effects of the COVID-19 pandemic and industry-wide supply chain issues."

Mars Ingenuity Helicopter Marks The Successful Completion Of Its Eighth Test Flight

# SlashGear

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132&t=c&data=04|01|alicia.n.brown@nasa.gov|ed2ac2c0eb3a4d29aa7608d936ff26db|7005d45845be48ae8140d43da 96dd17b|0|0|637601291769226513|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6lk1 haWwiLCJXVCI6Mn0=|1000&sdata=+0ilpGoj0L2SEU27HSnJwxHWp8QPgDUTI6kGI3FyQa4=&reserved=0> (6/23, McGlaun) "NASA JPL has shared a tweet with a selfie taken by the Mars Ingenuity Helicopter. The picture was snapped during the helicopter's eighth test flight on Monday of this week. While NASA isn't sharing a wealth of details about the eighth test flight, what it has said is that the helicopter flew for 77.4 seconds over a distance of 160 meters."

NASA's Mars Helicopter Has Now Flown Successfully 8 Times, Beaming Back Photos That Look Like A Sci-fi Film

#### Insider

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4ff&t=c&data=04|01|alicia.n.brown@nasa.gov|ed2ac2c0eb3a4d29aa7608d936ff26db|7005d45845be48ae8140d43da9 6dd17b|0|0|637601291769236481|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6lk1h aWwiLCJXVCI6Mn0=|1000&sdata=dhM5iNa1XFYaD8sIQG6h7cogBzh+L7hp/XP0BAyUIYA=&reserved=0> (6/23, McFall-Johnsen) "The 4-pound helicopter spun its two pairs of blades to lift itself more than 30 feet above the ochre Martian dust. At a speed of 9 mph, it zipped to a new landing spot 525 feet away. The pair of robots landed in Mars' Jezero Crater on February 18. Ingenuity was meant to conduct up to five test flights in order to prove that helicopters could fly over and explore Mars. The demo chopper has far exceeded engineers' expectations."

Lockheed Martin To Build Aeroshell For Mars Sample Retrieval Lander

#### New Atlas

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bdb&t=c&data=04|01|alicia.n.brown@nasa.gov|ed2ac2c0eb3a4d29aa7608d936ff26db|7005d45845be48ae8140d43da 96dd17b|0|0|637601291769236481|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1 haWwiLCJXVCI6Mn0=|1000&sdata=gjY6PoYbmeAREM/XcO1R4xHqBeljM+hAU6wBgtmamZE=&reserved=0> (6/23, Szondy) "Lockheed Martin has been selected by NASA's Jet Propulsion Laboratory (JPL) in Pasadena, California to design and build the aeroshell and heat shield for the space agency's Mars Sample Retrieval Lander, which will help return the first Martian samples to Earth. Penciled in for a July 2026 launch, the Mars Sample Retrieval Lander is part of a tag-team string of Mars Sample Return missions to bring bits of Mars back to Earth for analysis. The first phase is already underway as NASA's Perseverance rover traverses the Martian surface in search of signs of ancient microbial life. As the nuclear-powered rover collects soil and rock samples, these will be packaged and left behind in caches."

NASA Administrator Discusses Budget At Hearing

#### WKMG-TV Orlando (FL)

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ea3&t=c&data=04|01|alicia.n.brown@nasa.gov|ed2ac2c0eb3a4d29aa7608d936ff26db|7005d45845be48ae8140d43da 96dd17b|0|0|637601291769246438|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6lk1 haWwiLCJXVCI6Mn0=|1000&sdata=S4sBwf1sB+IwLmu6ju8s/03fX5e0hUzvx60+neEl2ig=&reserved=0> (6/23) "Former Florida Senator and current NASA Administrator Bill Nelson is on Capitol Hill fighting to get more money for space exploration."

China Plans To Send Its First Crewed Mission To Mars In 2033 And Build A Base There

#### CNBC

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a10&t=c&data=04|01|alicia.n.brown@nasa.gov|ed2ac2c0eb3a4d29aa7608d936ff26db|7005d45845be48ae8140d43da 96dd17b|0|0|637601291769246438|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6lk1 haWwiLCJXVCI6Mn0=|1000&sdata=uhTpHAAI1XuIKDOZGZwJoL7aeJuQ645CFrOzWN3FGMo=&reserved=0> (6/24, ) "China plans to send its first crewed mission to Mars in 2033 as it continues to boost its space ambitions in a battle with the U.S. The world's second-largest economy is planning regular crewed missions to the Red Planet."

China Plans Its First Crewed Mission To Mars In 2033

# Reuters

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3b1&t=c&data=04|01|alicia.n.brown@nasa.gov|ed2ac2c0eb3a4d29aa7608d936ff26db|7005d45845be48ae8140d43da 96dd17b|0|0|637601291769256396|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiV2luMzliLCJBTil6lk1 haWwiLCJXVCI6Mn0=|1000&sdata=KvAMiDPg/1r09ag0j+oV4E6Hqr1rp4N+7QckutsOiQE=&reserved=0> (6/24, Staff) "China aims to send its first crewed mission to Mars in 2033, with regular follow-up flights to follow, under a long-term plan to build a permanently inhabited base on the Red Planet and extract its resources. The ambitious plan, which will intensify a race with the United States to plant humans on Mars, was disclosed in detail for the first time after China landed a robotic rover on Mars in mid-May in its inaugural mission to the planet."

#### Solar System and Beyond

NASA Working To Resolve Computer Glitch, Return Hubble Space Telescope To Service

## **CBS** News

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50a&t=c&data=04|01|alicia.n.brown@nasa.gov|ed2ac2c0eb3a4d29aa7608d936ff26db|7005d45845be48ae8140d43da 96dd17b|0|0|637601291769256396|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1 haWwiLCJXVCI6Mn0=|1000&sdata=akW1Wh6T5F3HAJ5KgDvGCoELiRRb6ki9Kr/87pOvSvk=&reserved=0> (6/23, Harwood) "NASA is struggling to fix a computer glitch that has sidelined the iconic Hubble Space Telescope. While the problem is an uncomfortable reminder of the aging observatory's eventual mortality, engineers are confident they'll have it back up and running soon. 'Hubble is arguably the most important asset in the NASA's astrophysics portfolio, and it's been doing world-breaking science for over 30 years now,' Paul Hertz, director of astrophysics at NASA Headquarters, said Wednesday."

Hubble Space Telescope's 1980s Computer Glitch May Run Deeper Than NASA Thought

## SPACE

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41c&t=c&data=04|01|alicia.n.brown@nasa.gov|ed2ac2c0eb3a4d29aa7608d936ff26db|7005d45845be48ae8140d43da 96dd17b|0|0|637601291769256396|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiV2luMzliLCJBTil6lk1 haWwiLCJXVCI6Mn0=|1000&sdata=2EN6pv9HoYnufAlKswus05tKJu6hkxSSHibK3QlVL+w=&reserved=0> (6/23, Bartels) "It turns out it's tricky to troubleshoot a 1980s computer that's dashing around Earth hundreds of miles over our heads. NASA has spent more than a week evaluating a computer issue that put the venerable Hubble Space Telescope out of commission on June 13 and that may force the spacecraft to turn to its backup computer. Now, ongoing tests suggest that the issue the team has identified so far may not be at the root of the computer's problems, according to an update from the agency."

To Fix The Hubble Space Telescope, NASA May Have To Rely On A Computer That Hasn't Turned On Since 2009

#### Insider

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6c3&t=c&data=04|01|alicia.n.brown@nasa.gov|ed2ac2c0eb3a4d29aa7608d936ff26db|7005d45845be48ae8140d43da 96dd17b|0|0|637601291769266354|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiV2luMzIiLCJBTil6lk1 haWwiLCJXVCI6Mn0=|1000&sdata=hQpFddn/IFIRq7d9q/VdiMg60lsym+jfExs/Eo8pZWU=&reserved=0> (6/23, McFall-Johnsen) "NASA still hasn't figured out what forced its Hubble Space Telescope offline more than a week ago. The telescope's payload computer suddenly stopped working on June 13, sending NASA engineers scrambling to figure out the problem. That computer, built in the 1980s, is like Hubble's brain — it controls and monitors all the science instruments on the spacecraft. So the telescope has gone into a hibernation-like "safe mode" while NASA troubleshoots." As Teams Work To Bring Hubble Back Online, New Science Highlights Missing Dark Matter In Galaxy

## NASA Space Flight

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c2f&t=c&data=04|01|alicia.n.brown@nasa.gov|ed2ac2c0eb3a4d29aa7608d936ff26db|7005d45845be48ae8140d43da 96dd17b|0|0|637601291769266354|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiV2luMzliLCJBTil6lk1 haWwiLCJXVCI6Mn0=|1000&sdata=wj2BldxnPQdyFddutQaPfz7xzG5lxjyLtj+oDcGtzr0=&reserved=0> (6/23, Warren) "Following an unexpected payload computer halt on June 13, Hubble teams are diligently working to bring the 31-yearold telescope back online. The halt, which has garnered news headlines throughout the past week, is proving to be quite the challenge for engineers to resolve. Although this failure undoubtedly highlights Hubble's growing age, scientists have continuously used the observatory for research. One team of researchers' recently published research using Hubble highlights one of the universe's most mysterious phenomena — dark matter."

Hubble Trouble: NASA Can't Figure Out What's Causing Computer Issues On The Telescope

## NPR

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0e2&t=c&data=04|01|alicia.n.brown@nasa.gov|ed2ac2c0eb3a4d29aa7608d936ff26db|7005d45845be48ae8140d43da 96dd17b|0|0|637601291769276307|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiV2luMzIiLCJBTil6lk1 haWwiLCJXVCI6Mn0=|1000&sdata=uILpIEB+jUEbf3a0zUByFJlcptiaT3Z+uATOLmGH+8o=&reserved=0> (6/23, Hernandez) "The storied space telescope that brought you stunning photos of the solar system and enriched our understanding of the cosmos over the past three decades is experiencing a technical glitch. Scientists at NASA say the Hubble Space Telescope's payload computer, which operates the spacecraft's scientific instruments, went down suddenly on June 13. Without it, the instruments on board meant to snap pictures and collect data are not currently working."

NASA's Aging Hubble Space Telescope Stuck In Safe Mode As Glitch Fixes Falter

#### **CNET** News

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f5a&t=c&data=04|01|alicia.n.brown@nasa.gov|ed2ac2c0eb3a4d29aa7608d936ff26db|7005d45845be48ae8140d43da 96dd17b|0|0|637601291769276307|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTil6lk1 haWwiLCJXVCI6Mn0=|1000&sdata=0RExnLgDEzRRWuKj8h1CE4SJi+tjhpvF7Tf5un37W9U=&reserved=0> (6/23, Kooser) "The Hubble Space Telescope has spent over three decades bringing us glorious images and data, but the spacecraft is showing its age. The Hubble team is troubleshooting a problem with the telescope's payload computer – a piece of hardware built in the 1980s – that controls its science instruments. But there might be something else going on."

Hubble Space Telescope Finds Galaxy With Weirdly Little Dark Matter

#### SPACE

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efb&t=c&data=04|01|alicia.n.brown@nasa.gov|ed2ac2c0eb3a4d29aa7608d936ff26db|7005d45845be48ae8140d43da 96dd17b|0|0|637601291769286262|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1 haWwiLCJXVCI6Mn0=|1000&sdata=nbD455+NHb21BF2vIQGu13GA2aLTiWgSIVLMfQM2dG8=&reserved=0> (6/23, Rao) "Astronomers may not know what dark matter is, but they do know that galaxies are supposed to contain a lot of the shadowy, invisible substance. Dark matter makes up the lion's share of a galaxy's mass, and it's critical to hold a galaxy's stars, gas and dust together. So, when scientists find evidence twice over that a certain galaxy seems to have a tiny fraction of the dark matter it ought to have, astronomers sit up and pay attention. And that's where recent observations with the venerable Hubble Space Telescope come in."

These Potentially Habitable Exoplanets Can See Earth As It Evolves

## CNN

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cca&t=c&data=04|01|alicia.n.brown@nasa.gov|ed2ac2c0eb3a4d29aa7608d936ff26db|7005d45845be48ae8140d43da 96dd17b|0|0|637601291769286262|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6lk1 haWwiLCJXVCI6Mn0=|1000&sdata=qqpAAGfjvjXSciimmSZE70fv1RVpPvet6YE3bduJIzA=&reserved=0> (6/23, Strickland) "As human civilization began to flourish on Earth about 5,000 years ago, 1,715 star systems within 326 light-years of Earth could have seen our planet over that time. And over the next 5,000 years, 319 more star systems will be able to see Earth. If there are exoplanets orbiting these nearby stars, they could witness our planet as it crosses in front of the sun. The observation of a passing of a planet in front of its host star is called a transit, and it's one of the main methods used by astronomers to detect exoplanets using ground- and space-based telescopes. And it's how other life on other planets, if it exists, could observe Earth."

There Is Only One Other Planet In Our Galaxy That Could Be Earth-Like, Say Scientists

## Forbes

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4fb&t=c&data=04|01|alicia.n.brown@nasa.gov|ed2ac2c0eb3a4d29aa7608d936ff26db|7005d45845be48ae8140d43da 96dd17b|0|0|637601291769296221|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6lk1 haWwiLCJXVCI6Mn0=|1000&sdata=DSRtE9EVZ0E2xYXJ9tpEk7DYTPpgvfzbCobWAVbYBsg=&reserved=0> (6/23, Carter) "It's you and me, Kepler442b. What does it take for an alien exoplanet to host life as we know it? A lot, as it turns out. ... The James Webb Space Telescope (JWST), due to launch later this year, will be able to study the atmospheres of exoplanets as they transit their stars. The light coming through their atmosphere's will reveal what gases they contain."

How NASA's Parker Solar Probe Used Venus To Fly Closer To The Sun

#### ZDNet

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5ca&t=c&data=04|01|alicia.n.brown@nasa.gov|ed2ac2c0eb3a4d29aa7608d936ff26db|7005d45845be48ae8140d43da 96dd17b|0|0|637601291769296221|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6lk1 haWwiLCJXVCI6Mn0=|1000&sdata=TtFuKkozGHk2ljHjwtjdPjSP6qig/OOjThX26e7VLAU=&reserved=0> (6/23) "How NASA's Parker Solar Probe used Venus to fly closer to the sun"

Venus Surprisingly Active Beneath The Surface, Scientists Say

#### **CNET** News

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 $506\&t=c\&data=04|01|alicia.n.brown@nasa.gov|ed2ac2c0eb3a4d29aa7608d936ff26db|7005d45845be48ae8140d43da\\96dd17b|0|0|637601291769306178|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiV2luMzliLCJBTil6lk1\\haWwiLCJXVCI6Mn0=|1000&sdata=A8WdXhSbI63ruS4SPuNb/KuC3dofE36W4f7bImsPnE4=&reserved=0> (6/23, 0.5)$ 

Mack) "Something is moving on Venus – or rather beneath the planet's surface. It's not life, but it does suggest our neighboring world is a little less static than many previously believed. A team of global researchers analyzed NASA radar images from the Magellan mission to Venus and found big blocks of its lithosphere, or crust, appeared to have moved."

A New Analysis Of The Surface Of Venus Hints The Planet Might Be Geologically Active

## SlashGear

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718&t=c&data=04|01|alicia.n.brown@nasa.gov|ed2ac2c0eb3a4d29aa7608d936ff26db|7005d45845be48ae8140d43da 96dd17b|0|0|637601291769306178|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiV2luMzIiLCJBTil6lk1 haWwiLCJXVCI6Mn0=|1000&sdata=y/VpMLUHhfdFosM3FGcqRWjMCAvEzA6Xl0BolI1NX0g=&reserved=0> (6/23, McGlaun) "Scientists have performed a new analysis of the surface of Venus that has revealed evidence of tectonic motion. That evidence comes in the form of crustal blocks that have jostled against each other like broken chunks of pack ice on Earth's lakes and oceans. Researchers say that the movement of those blocks could indicate that Venus is geologically active and give insights into exoplanet tectonics and early tectonic activity on Earth. ... Researchers used radar images from the NASA Magellan mission to view the surface of Venus."

How Lobster Eyes Can Help Astronomers Get A Wider View Of The Cosmos

#### Astronomy News

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ad3&t=c&data=04|01|alicia.n.brown@nasa.gov|ed2ac2c0eb3a4d29aa7608d936ff26db|7005d45845be48ae8140d43da 96dd17b|0|0|637601291769316132|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiV2luMzliLCJBTil6lk1 haWwiLCJXVCI6Mn0=|1000&sdata=/nhfbYjXLRO2ljTUOzbg5lxbUjLr1OStXJ7rcBf2fUE=&reserved=0> (6/23, Bugos) "For more than half a century, scientists have sought to understand cosmic X-rays and what they reveal about our galaxy and the universe beyond it. As it turns out, lobsters can help astronomers do just that. ... 'This is a technology that's been around a long time in astrophysics, looking for a use,' says Scott Porter, an astrophysicist at the NASA Goddard Space Flight Center. Porter's team is developing specialized instruments, including the Solar-Terrestrial Observer for the Response of the Magnetosphere (STORM), to understand how solar wind interacts with Earth's magnetic field."

Citizen Scientists Discover 2 Gas Giants Around A Distant Sun-like Star

## SPACE

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a72&t=c&data=04|01|alicia.n.brown@nasa.gov|ed2ac2c0eb3a4d29aa7608d936ff26db|7005d45845be48ae8140d43da 96dd17b|0|0|637601291769316132|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiV2luMzliLCJBTil6lk1 haWwiLCJXVCI6Mn0=|1000&sdata=Srt7xDncZB2UTEJwmEW65w7iXlwcj8folnNSx5KpVXE=&reserved=0> (6/23, Mathewson) "A pair of gas-giant exoplanets was found orbiting a distant sun-like star, thanks to the help of citizen scientists around the world. Members of the NASA-funded Planet Hunters Transiting Exoplanet Survey Satellite (TESS) project discovered the two planets around a distant star called HD 152843, which is located about 352 lightyears from Earth. The star has a mass similar to that of the sun but is nearly 1.5 times bigger and slightly brighter, according to a NASA statement."

Aliens From 1,715 Stars Could've Seen Earth Over The Past 5,000 Years, Study Suggests

Gizmodo

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19e&t=c&data=04|01|alicia.n.brown@nasa.gov|ed2ac2c0eb3a4d29aa7608d936ff26db|7005d45845be48ae8140d43da 96dd17b|0|0|637601291769326087|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiV2luMzIiLCJBTil6lk1 haWwiLCJXVCI6Mn0=|1000&sdata=xZ32YVTvwEIHEBUGp8k00ik2aL5qYQtubDWLft2vH6o=&reserved=0> (6/23, Dvorsky) "Astronomers on Earth have spotted thousands of exoplanets since the 1990s, so it's not unreasonable to assume that aliens, should they exist, would be capable of the same feat. Working under this assumption, astronomers have identified a surprising number of nearby stars from which alien astronomers could've detected our planet since the advent of human civilization. ... By extrapolating data gathered by NASA's Kepler mission, that leads to an estimated 500 habitable exoplanets to within 300 light-years and about 29 estimated exoplanets to within 100 light-years—and again, all within the Earth Transit Zone."

NASA Develops Balloon To Study Venus

## KOKH-TV Oklahoma City

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d9b&t=c&data=04|01|alicia.n.brown@nasa.gov|ed2ac2c0eb3a4d29aa7608d936ff26db|7005d45845be48ae8140d43da 96dd17b|0|0|637601291769326087|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiV2luMzliLCJBTil6lk1 haWwiLCJXVCI6Mn0=|1000&sdata=oQKATISyK+A0HxHJgla4occ2qn5o9OBUIh2l46Fop48=&reserved=0> (6/23) "Now we're talking. NASA developed a balloon, with all this technology we've got going, it's a balloon."

Space Tech

No content.

Various

America Needs A Whole-of-government Approach To Studying Unidentified Aerial Phenomena

The Hill

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bb4&t=c&data=04|01|alicia.n.brown@nasa.gov|ed2ac2c0eb3a4d29aa7608d936ff26db|7005d45845be48ae8140d43da 96dd17b|0|0|637601291769336033|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6lk1 haWwiLCJXVCI6Mn0=|1000&sdata=XVRVDBOFfbPHXxalyMNzScFzz5XcXpdae1OnEALbJrE=&reserved=0> (6/23, Guthrie) "Revelations about unidentified aerial phenomena, or UAPs, expose the hubris of ridiculing a topic worthy of scientific study. UAPs, better known as UFOs, exist, with Navy pilots reporting them routinely violating our restricted military airspace. Yet our government evidently has ignored, quashed or compartmentalized information about UAPs for decades — jeopardizing scientific progress, national security and democratic accountability. Fortunately, NASA is now investigating UAPS, and the Pentagon is examining its handling of the matter."

Space Force Set To Defend Deep Space

## Washington Times

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486&t=c&data=04|01|alicia.n.brown@nasa.gov|ed2ac2c0eb3a4d29aa7608d936ff26db|7005d45845be48ae8140d43da 96dd17b|0|0|637601291769336033|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6lk1 haWwiLCJXVCI6Mn0=|1000&sdata=/EkR2hNYyNFArgFk2DubAxPqhZvJaKYP62EkNBQDows=&reserved=0> (6/23, Gertz) "U.S. military space forces are preparing to defend systems beyond Earth's orbit in areas extending to the moon and beyond, according to a report by the Air Force Research Laboratory. Defending cislunar space — the volume of space outside of geosynchronous Earth orbit and within the moon's gravitational pull — is outlined in a memorandum of understanding between the Space Force and NASA. The report was made public this week after China and Russia announced plans for a joint international research station to be built on the moon."

Fairborn Defense Contractor Wins \$233M In Contract Boosting NASA

## Dayton (OH) Daily News

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436&t=c&data=04|01|alicia.n.brown@nasa.gov|ed2ac2c0eb3a4d29aa7608d936ff26db|7005d45845be48ae8140d43da 96dd17b|0|0|637601291769346000|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1 haWwiLCJXVCI6Mn0=|1000&sdata=wHy3ntapj1CG/XIgM8MmJJQt8GMUjmMgpmKpBWFTnBE=&reserved=0> (6/23, Gnau) "A joint venture between Banner Quality Management, Inc. and Fairborn's Peerless Technologies Corp. has won the largest award in its history, a five-year, \$233 million effort to support information technology, cybersecurity, communications and program management for NASA's Glenn Research Center and associated facilities."

See The Hubble Space Telescope's Iconic Pillars Of Creation In Lego Form

## SPACE

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f78&t=c&data=04|01|alicia.n.brown@nasa.gov|ed2ac2c0eb3a4d29aa7608d936ff26db|7005d45845be48ae8140d43da 96dd17b|0|0|637601291769346000|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiV2luMzliLCJBTil6lk1 haWwiLCJXVCI6Mn0=|1000&sdata=KZF3root1Lx39R0sE2+HgjoA/94Vre9CgfgsfL6g6D0=&reserved=0> (6/23, Howell) "One of the Hubble Space Telescope's most iconic pictures is now reimagined in Lego form. The famous 'Pillars of Creation' image of 1995 showing epic clouds of gas in the Eagle Nebula is available now on the Lego's website for fans to recreate in brick form, for free. A copy of the instructions is online on the 'Go Beyond' website, to time with Lego's recently released NASA Space Shuttle Discovery Hubble set for adults."

Other

European Space Agency Is Wary Of Partnering With China

## Aviation Week

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0e5&t=c&data=04|01|alicia.n.brown@nasa.gov|ed2ac2c0eb3a4d29aa7608d936ff26db|7005d45845be48ae8140d43da 96dd17b|0|0|637601291769355956|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiV2luMzIiLCJBTil6lk1 haWwiLCJXVCI6Mn0=|1000&sdata=nQjB0ZCr8IFqEsqJ5NWjteDsLU9s+3QnXgtFdugtP0E=&reserved=0> (6/24) "Until the mid-2010s, the European Space Agency (ESA) had great hopes that cooperating with the China Manned Space Agency (also known as the China Manned Space Engineering Office) would be fruitful. Harsh diplomatic realities have since dampened enthusiasm. ESA astronauts Samantha Cristoforetti and..."

SpaceX's Starlink Satellite Internet Could Achieve Global Coverage By September

## Engadget

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haWwiLCJXVCI6Mn0=|1000&sdata=B9jjoe5XYCUr+eQ3FX61oV7EIX2HfyeWPELZmxc8zkY=&reserved=0> (6/23, Moon) "The Starlink satellite internet service may have the capability to provide users in far-flung regions around the world with high-speed connections before the year ends. SpaceX has deployed 1,800 or so satellites for the Starlink constellation so far. While that number's just a fraction of the 12,000 satellites regulators already approved for the constellation, it's enough to enable worldwide coverage. According to Reuters, SpaceX president Gwynne Shotwell has revealed at a web conference that the service will be able to offer continuous global coverage once all 1,800 satellites reach their operational orbit. The aerospace corporation expects that to happen as soon as September this year."

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93d&t=c&data=04|01|alicia.n.brown@nasa.gov|ed2ac2c0eb3a4d29aa7608d936ff26db|7005d45845be48ae8140d43da 96dd17b|0|0|637601291769365913|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6lk1 haWwiLCJXVCI6Mn0=|1000&sdata=hcadyplzoWmNCVStktQjgzPu6WTiG9kMqnwPNWg5LQQ=&reserved=0>. The NASA Morning Briefing is published five days a week by Bulletin Intelligence, which creates custom briefings for government and corporate leaders. We can be found on the Web at BulletinIntelligence.com, or called at (703) 483-6100.

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244&t=c&data=04|01|alicia.n.brown@nasa.gov|2018bb512caf4895996008d93a23a254|7005d45845be48ae8140d43d a96dd17b|0|0|637604746992368201|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6Ik 1haWwiLCJXVCI6Mn0=|1000&sdata=mX2EfxV+2zk2rW9+P9Cts136ZuaqQf/zpJ377IaKK2I=&reserved=0>. A NASA email address is required.

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Astronauts Complete Solar Panel Work In 3rd Spacewalk

#### AP

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d53&t=c&data=04|01|alicia.n.brown@nasa.gov|2018bb512caf4895996008d93a23a254|7005d45845be48ae8140d43d a96dd17b|0|0|637604746992368201|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6lk 1haWwiLCJXVCI6Mn0=|1000&sdata=0i+ULwdxjlwgDim2nt59yQ0QQ0QwUOBfkpXheGhQm7Y=&reserved=0> (6/25, Dunn) "Astronauts finished unfurling a new pair of solar panels outside the International Space Station on Friday, making their third spacewalk in just over a week. NASA's Shane Kimbrough and France's Thomas Pesquet successfully installed the second in a series of powerful solar wings that should keep the space station running the rest of this decade, as space tourism ramps up with visitors beginning in the fall."

Virgin Galactic Gets FAA Approval To Take Customers To Space

## Washington Post

<a href="https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021062802nasa&r=email-13fc&l=004-">https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021062802nasa&r=email-13fc&l=004-</a>

72d&t=c&data=04|01|alicia.n.brown@nasa.gov|2018bb512caf4895996008d93a23a254|7005d45845be48ae8140d43d a96dd17b|0|0|637604746992378157|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiV2luMzliLCJBTil6lk 1haWwiLCJXVCI6Mn0=|1000&sdata=DOJvGh1QkNsVvr5ek8Ylu82rG1LYBM4Tp/zvzbBghGs=&reserved=0> (6/25) "Virgin Galactic says it has Federal Aviation Administration approval to fly customers into space, making it the first spaceline to cross that hurdle, the company announced Friday. The milestone comes at a key moment in the space race: On the anniversary of the Apollo 11 moon landing, July 20, Jeff Bezos plans to be onboard when one of his Blue Origin rockets makes its first crewed spaceflight. The FAA is expected to grant Blue Origin a commercial license soon, according to people familiar with the process."

"Space Is For Everyone": Europe's Space Agency To Hire First Disabled Astronaut

## Reuters

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317&t=c&data=04|01|alicia.n.brown@nasa.gov|2018bb512caf4895996008d93a23a254|7005d45845be48ae8140d43d a96dd17b|0|0|637604746992378157|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiV2luMzIiLCJBTil6lk 1haWwiLCJXVCI6Mn0=|1000&sdata=J/zEUwwdwVEacMVKnFcCctfHGXfni2Zta0JfBFrigdl=&reserved=0> (6/25, Escritt) "The European Space Agency hopes to hire and launch the world's first physically disabled astronaut and several hundred would-be para-astronauts have already applied for the role, ESA head Josef Aschbacher told Reuters on Friday. The 22-member space programme has just closed its latest decennial recruitment call for astronauts and received 22,000 applicants, Aschbacher said."

The Chinese-Russian Lunar Axis Adopts A Plan From The Late Paul Spudis

## The Hill

<a href="https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=202106-">https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=202106-</a>

4d3&t=c&data=04|01|alicia.n.brown@nasa.gov|2018bb512caf4895996008d93a23a254|7005d45845be48ae8140d43d a96dd17b|0|0|637604746992388112|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6lk 1haWwiLCJXVCI6Mn0=|1000&sdata=UV/Qko8RyNDdIRWdA2qjoLvFARw91r48O3dZhGugQyk=&reserved=0> (6/27, Whittington) "Recently, a group of Russian and Chinese space officials revealed plans for what they call an 'International Lunar Research Station' during a conference in St. Petersburg, Russia. The plan for the facility's development seemed remarkably similar to one proposed by Paul Spudis, the late lunar geologist and return-to-themoon advocate, and Tony Lavoie, at the time employed by NASA."

Nelson's First NASA Challenge: The Space Race With China

## Orlando (FL) Sentinel

<a href="https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021062802nasa&r=email-13fc&l=007-">https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021062802nasa&r=email-13fc&l=007-</a>

f37&t=c&data=04|01|alicia.n.brown@nasa.gov|2018bb512caf4895996008d93a23a254|7005d45845be48ae8140d43da 96dd17b|0|0|637604746992388112|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiV2luMzliLCJBTil6lk1 haWwiLCJXVCI6Mn0=|1000&sdata=BTFBzVII52NBBAuEDeBYx6nSUt+IcrVTC8NZbY4cmeA=&reserved=0> (6/27, Weiner, Paras) "While NASA focuses on Venus, China's space program, the China National Space Administration (CNSA), is aimed at landing people on the moon, something NASA hasn't done since Apollo 17 in 1972. It's astounding that 52 years since the U.S. landed, we have done nothing with human beings for decades but send commuter shuttles to a space station 200 miles away."

## Flight

How NASA Intends To Make The Next Narrowbody Airliners 25% More Efficient

## FlightGlobal

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6cb&t=c&data=04|01|alicia.n.brown@nasa.gov|2018bb512caf4895996008d93a23a254|7005d45845be48ae8140d43d a96dd17b|0|0|637604746992398068|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6Ik 1haWwiLCJXVCI6Mn0=|1000&sdata=sdVLJot3yyQs5ZLIN4mZAzU8VIUuLDdVTqrWiUqL/nU=&reserved=0> (6/28, Hemmerdinger) "NASA has left no doubt that it wants to help make next-generation narrowbody jets significantly more efficient. That goal became clear in May, when the agency revealed its Sustainable Flight National Partnership (SFNP), a technology development effort aimed at bringing 25% efficiency gains to single-aisle jets coming to market in the 2030s."

## Earth

Researchers Harness A NASA Satellite To Track Microplastics In The Atlantic

#### SlashGear

<a href="https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021062802nasa&r=email-13fc&l=009-">https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021062802nasa&r=email-13fc&l=009-</a>

956&t=c&data=04|01|alicia.n.brown@nasa.gov|2018bb512caf4895996008d93a23a254|7005d45845be48ae8140d43d a96dd17b|0|0|637604746992398068|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6Ik 1haWwiLCJXVCI6Mn0=|1000&sdata=XQ9gzZUwPlwVcANE1Y5YJ/hMeQTU7ZBzZUdoWZ3sjzI=&reserved=0> (6/27, McGlaun) "Researchers from the University of Michigan have devised a way to use data collected by NASA satellites to track the movement of tiny pieces of plastic in the Atlantic Ocean. The plastic they're tracking is known as microplastics and forms when plastic trash in the ocean begins to break down from a combination of sun rays and the motion of ocean waves. Microplastics are a significant concern for the marine ecosystem as the small pieces are harmful to marine organisms and the ecosystem in general."

Humans in Space

Astronauts Complete Solar Panel Work In 3rd Spacewalk

## AP

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4aa&t=c&data=04|01|alicia.n.brown@nasa.gov|2018bb512caf4895996008d93a23a254|7005d45845be48ae8140d43d a96dd17b|0|0|637604746992408026|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiV2luMzIiLCJBTiI6lk 1haWwiLCJXVCI6Mn0=|1000&sdata=IUtMovKbUHmIV7cc8TwK2viVUYoXOJaE0vuoO0HJ7gE=&reserved=0> (6/25, Dunn) "Astronauts finished unfurling a new pair of solar panels outside the International Space Station on Friday, making their third spacewalk in just over a week. NASA's Shane Kimbrough and France's Thomas Pesquet successfully installed the second in a series of powerful solar wings that should keep the space station running the rest of this decade, as space tourism ramps up with visitors beginning in the fall."

## SPACE

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bb6&t=c&data=04|01|alicia.n.brown@nasa.gov|2018bb512caf4895996008d93a23a254|7005d45845be48ae8140d43d a96dd17b|0|0|637604746992408026|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiV2luMzliLCJBTil6lk 1haWwiLCJXVCl6Mn0=|1000&sdata=vlcVrHVZ7TNZ6wnnS8jzk0vKQbDQp/XjsljW0WYO2pg=&reserved=0> (6/25, Pearlman) "For the third time in less than two weeks, two astronauts ventured outside of the International Space Station to augment the orbiting outpost's power system with new solar arrays. NASA astronaut Shane Kimbrough and French astronaut Thomas Pesquet with the European Space Agency (ESA) completed a six-hour and 45-minute spacewalk on Friday (June 25), during which they install the second of six new International Space Station (ISS) Roll-Out Solar Arrays (iROSA). The pair previously worked together during spacewalks on June 16 and June 20 to deploy the first new array."

Astronauts Unfurl 60-Foot-Long Space Station Solar Array

## UPI

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66f&t=c&data=04|01|alicia.n.brown@nasa.gov|2018bb512caf4895996008d93a23a254|7005d45845be48ae8140d43da 96dd17b|0|0|637604746992417980|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiV2luMzliLCJBTil6lk1 haWwiLCJXVCI6Mn0=|1000&sdata=HfMdvSUb44XJ86rXVwOodZl+Voe8/E7rRhCPE8maOHU=&reserved=0> (6/25, Brinkmann) "Two astronauts concluded a spacewalk Friday outside the International Space Station and installed a second of six new solar arrays that will boost the orbiting laboratory's electrical power supply. Shane Kimbrough and Thomas Pesquet exited the space station about 8 a.m. EDT. They successfully mounted and rolled out a 60-foot-long solar array, known as iROSA or International Space Station Roll-Out Solar Array. The spacewalk concluded after 6 hours, 45 minutes."

Spacewalking Astronauts Install Second Upgraded Solar Array

#### Spaceflight Now

<a href="https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021062802nasa&r=email-13fc&l=00d-">https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021062802nasa&r=email-13fc&l=00d-</a>

8e1&t=c&data=04|01|alicia.n.brown@nasa.gov|2018bb512caf4895996008d93a23a254|7005d45845be48ae8140d43d a96dd17b|0|0|637604746992417980|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6Ik 1haWwiLCJXVCI6Mn0=|1000&sdata=IFmPs0mkBE880DeQVkH6w3bt+cDK88846LhwsNm//R0=&reserved=0> (6/25, Harwood) "French astronaut Thomas Pesquet and NASA crewmate Shane Kimbrough floated back outside the International Space Station Friday and deployed a 60-foot-long roll-out solar array, the second of six new blankets being installed to upgrade the lab's power system and offset age-related degradation. 'It looks like the deployment is complete,' Pesquet radioed, watching the array unroll itself six hours after the spacewalk began."

Pesquet & Kimbrough Complete New Solar Array Installation On ISS

#### NASA Space Flight

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108&t=c&data=04|01|alicia.n.brown@nasa.gov|2018bb512caf4895996008d93a23a254|7005d45845be48ae8140d43d a96dd17b|0|0|637604746992427943|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTil6Ik 1haWwiLCJXVCI6Mn0=|1000&sdata=nzJrZXva8KfVh+qHPaQWFJt5fM0CwSQr2bo3jkK97pk=&reserved=0> (6/25, Harding) "For the third time in 9 days, Thomas Pesquet and Shane Kimbrough donned their spacesuits and ventured outside the International Space Station (ISS), this time to install the second of six new Boeing-built ISS Roll Out Solar Arrays (IROSAs) to the outpost — part of a program to increase the station's electrical power capability as its science and research demands increase and future expansion plans continue."

Virgin Galactic Gets FAA Approval To Take Customers To Space

#### Washington Post

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d59&t=c&data=04|01|alicia.n.brown@nasa.gov|2018bb512caf4895996008d93a23a254|7005d45845be48ae8140d43d a96dd17b|0|0|637604746992427943|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiV2luMzIiLCJBTil6lk 1haWwiLCJXVCI6Mn0=|1000&sdata=F5+m48Ys6Wxj2Z1E3UWAHZiEMn2sSSVL0BGJJw0laqc=&reserved=0> (6/25) "Virgin Galactic says it has Federal Aviation Administration approval to fly customers into space, making it the first spaceline to cross that hurdle, the company announced Friday. The milestone comes at a key moment in the space race: On the anniversary of the Apollo 11 moon landing, July 20, Jeff Bezos plans to be onboard when one of his Blue Origin rockets makes its first crewed spaceflight. The FAA is expected to grant Blue Origin a commercial license soon, according to people familiar with the process."

Virgin Galactic Gets Official Clearance To Start Flying Paying Customers To Space

## Gizmodo

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5c0&t=c&data=04|01|alicia.n.brown@nasa.gov|2018bb512caf4895996008d93a23a254|7005d45845be48ae8140d43d a96dd17b|0|0|637604746992437893|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiV2luMzliLCJBTil6lk 1haWwiLCJXVCI6Mn0=|1000&sdata=WthBm+nEC6mQ65LJdqebYGcLX9Qv5A0NWbB3kyROIwo=&reserved=0> (6/25, Dvorsky) "An upgraded FAA operators license now allows Virgin Galactic to include paying customers on its space flights, in what is a major milestone for the company and also the nascent space tourism sector. The space tourism industry is starting to heat up. Blue Origin will attempt its first crewed launch of the New Shepard rocket in July, with Amazon CEO Jeff Bezos and the winner of a \$28 million auction on board for the ride. Bezos is poised to beat his rivals in the emerging cold war of billionaires trying to get to space before the other guy, but today's news—that Virgin Galactic has secured an upgraded license to fly paying customers to space—means Richard Branson might actually be the first among them to see the curvature of Earth from suborbital space."

Virgin Galactic Earns FAA Approval To Fly Humans To Space

#### ABC News

<a href="https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021062802nasa&r=email-13fc&l=011-">https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021062802nasa&r=email-13fc&l=011-</a>

747&t=c&data=04|01|alicia.n.brown@nasa.gov|2018bb512caf4895996008d93a23a254|7005d45845be48ae8140d43d a96dd17b|0|0|637604746992437893|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiV2luMzliLCJBTil6lk 1haWwiLCJXVCI6Mn0=|1000&sdata=7Fq2ddfRmGq4SpB5IWpTQrp6M28LWGLw8kLj4g0kiNA=&reserved=0> (6/25, Thorbecke) "The company has already secured reservations from future passengers. Virgin Galactic, the private spaceflight firm founded by billionaire Richard Branson, said Friday that it had received Federal Aviation Administration approval to fly humans to space. The company said that its existing commercial space transportation operator license had been upgraded to allow it to fly customers on the heels of its successful crewed test flight last May, which an extensive data review found performed all flight objectives."

FAA Gives Green Light To Virgin Galactic's Space Tourism

The Hill

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f52&t=c&data=04|01|alicia.n.brown@nasa.gov|2018bb512caf4895996008d93a23a254|7005d45845be48ae8140d43da 96dd17b|0|0|637604746992447852|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiV2luMzliLCJBTil6lk1 haWwiLCJXVCI6Mn0=|1000&sdata=1MN87f3KuUkB+vjFQl4ow0Qa8t4dV4mjagNVlqCOhxo=&reserved=0> (6/25, Kelley) "Virgin Galactic, one of the aerospace companies working to pioneer space tourism, received approval from the Federal Aviation Administration (FAA) to take passengers to space. This follows a May 22 test flight of the company's VMS Eve and VSS Unity. It was Virgin Galactic's third space flight and the first launch from Spaceport America, located in New Mexico."

Virgin Galactic Receives FAA Approval To Take Passengers Into Space

## Engadget

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e8b&t=c&data=04|01|alicia.n.brown@nasa.gov|2018bb512caf4895996008d93a23a254|7005d45845be48ae8140d43d a96dd17b|0|0|637604746992447852|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6Ik 1haWwiLCJXVCI6Mn0=|1000&sdata=bxC+B/wFCcj+AuUcsRYRPVOe+TgUa6AfiJJYP32hpj0=&reserved=0> (6/25, Shah) "Virgin Galactic has received the go ahead from aviation regulators to fly passengers to space. The company announced today that the Federal Aviation Authority (FAA) has updated its existing commercial space transportation operator license, which it has held since 2016. Virgin Galactic said the decision makes it the first spaceline to secure permission to fly customers."

Virgin Galactic Gets FAA Approval To Fly Customers To Space

Wall Street Journal

<a href="https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021062802nasa&r=email-13fc&l=014-">https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021062802nasa&r=email-13fc&l=014-</a>

5de&t=c&data=04|01|alicia.n.brown@nasa.gov|2018bb512caf4895996008d93a23a254|7005d45845be48ae8140d43d a96dd17b|0|0|637604746992457806|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6Ik 1haWwiLCJXVCI6Mn0=|1000&sdata=IHYhR5qbyed+pln4Ujl+wNUlqhrJmjTe+fBiPVsYe/k=&reserved=0> (6/25, Grossman) "Richard Branson's Virgin Galactic Holdings Inc. came a step closer to sending customers to the edge of space Friday as federal regulators expanded the company's operator license."

Virgin Galactic Cleared By FAA To Fly Customers Into Space

#### Bloomberg

<a href="https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=20210">https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=20210</a> 62802nasa&r=email-13fc&l=015-

092&t=c&data=04|01|alicia.n.brown@nasa.gov|2018bb512caf4895996008d93a23a254|7005d45845be48ae8140d43d a96dd17b|0|0|637604746992587236|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiV2luMzIiLCJBTil6lk 1haWwiLCJXVCI6Mn0=|1000&sdata=dkN936ExxJURvKZVO2Y2+mJ0eh5WR0RvWOEVBY4nIjM=&reserved=0> (6/25, Palazzo) "Virgin Galactic Holdings Inc. received regulatory approval to fly customers into space, moving the budding industry founded by billionaires one step closer to reality. The shares surged almost 40% – the biggest oneday jump ever. The Federal Aviation Administration upgraded the company's existing license to cover customer flights, Virgin Galactic said Friday in a statement, saying the approval was the first of its kind. The company also confirmed that a May 22 test flight performed well against objectives."

Virgin Galactic Cleared To Fly Customers On SpaceShipTwo

Space News

<a href="https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=202106-">https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=202106-</a>

ff1&t=c&data=04|01|alicia.n.brown@nasa.gov|2018bb512caf4895996008d93a23a254|7005d45845be48ae8140d43da 96dd17b|0|0|637604746992597193|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiV2luMzliLCJBTil6lk1 haWwiLCJXVCI6Mn0=|1000&sdata=/BP884zmYQjZXXKiNIrkXWLtNRmI8c8sMS2KbfxNp1A=&reserved=0> (6/25, Foust) "The Federal Aviation Administration has granted permission to Virgin Galactic to fly customers, and not just employees, on its SpaceShipTwo suborbital vehicle, a move that could allow the company's founder to fly to the edge of space soon. Virgin Galactic announced June 25 that the FAA's Office of Commercial Space Transportation had updated its existing launch license for SpaceShipTwo, allowing the company to fly spaceflight participants in addition to crew on the vehicle."

Branson's Virgin Galactic Cleared For Takeoff As Space Tourism Race Heats Up

## Reuters

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9f3&t=c&data=04|01|alicia.n.brown@nasa.gov|2018bb512caf4895996008d93a23a254|7005d45845be48ae8140d43da 96dd17b|0|0|637604746992597193|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiV2luMzliLCJBTil6lk1 haWwiLCJXVCI6Mn0=|1000&sdata=3fPv26t7cSmyqaiCrLcS8hQ1gGCrCmhtchEkC4MWch8=&reserved=0> (6/25) "Billionaire Richard Branson's spaceship company Virgin Galactic (SPCE.N) said on Friday it received approval from the U.S. aviation safety regulator to fly people to space, turning up the pressure on rivals in the nascent and expensive space tourism sector. The company's shares surged as much as 40% to \$56.40, their highest since February, after more than doubling in value this year."

Virgin Galactic Gets FAA's OK To Launch Customers To Space

## AP

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735&t=c&data=04|01|alicia.n.brown@nasa.gov|2018bb512caf4895996008d93a23a254|7005d45845be48ae8140d43d a96dd17b|0|0|637604746992607152|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTil6lk 1haWwiLCJXVCI6Mn0=|1000&sdata=zjmphIR9LwpvGKKZGyjOjp4fBCELpgUYCL4piBjoEHg=&reserved=0> (6/25, Dunn) "Virgin Galactic finally has the federal government's approval to start launching customers into space from New Mexico. Richard Branson's rocketship company announced the Federal Aviation Administration's updated license on Friday. It's the final hurdle in Virgin Galactic's yearslong effort to send paying passengers on short space hops."

These Tiny Indestructible Tardigrades Will Reveal How To Survive In Extremes Of Space

## SPACE

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cf5&t=c&data=04|01|alicia.n.brown@nasa.gov|2018bb512caf4895996008d93a23a254|7005d45845be48ae8140d43da 96dd17b|0|0|637604746992607152|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiV2luMzIiLCJBTil6lk1 haWwiLCJXVCI6Mn0=|1000&sdata=8EOaxOvopbsb3GnUks+0p2yZmiA7Xi1rwZq4ydG6gLI=&reserved=0> (6/25, Howell) "Tiny water-dwelling creatures called tardigrades known for their ability to survive in the most extreme environments will be subject to a series of experiments at the International Space Station to reveal the secrets of their superpowers. The 0.02-inch (0.5 mm) eight-legged creatures, also known as water bears, were sent to the space station as part of the Cell Science-04 experiment aboard the SpaceX Dragon 22nd resupply mission on June 3."

Chinese Space Station A Looming Threat To US, Experts Say

## Washington Free Beacon

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f65&t=c&data=04|01|alicia.n.brown@nasa.gov|2018bb512caf4895996008d93a23a254|7005d45845be48ae8140d43da 96dd17b|0|0|637604746992617105|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6lk1 haWwiLCJXVCI6Mn0=|1000&sdata=Few1vsj5RbhYWn7iAVXuVg1Xw2s19Gnua8breM4tK3w=&reserved=0> (6/26, Beyrer) "China will use its space station to advance its military technology and strengthen its influence in foreign countries, experts and lawmakers warn the Washington Free Beacon. Three Chinese astronauts reached the Tiangong space station on June 17. The project ushers in an expansion of China's capabilities in space and a boost to its international prestige."

Report Backs NASA Proposal To Change Astronaut Radiation Exposure Limits

## Space News

<a href="https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021062802nasa&r=email-13fc&l=01b-">https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021062802nasa&r=email-13fc&l=01b-</a>

7f5&t=c&data=04|01|alicia.n.brown@nasa.gov|2018bb512caf4895996008d93a23a254|7005d45845be48ae8140d43da 96dd17b|0|0|637604746992617105|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiV2luMzliLCJBTil6lk1 haWwiLCJXVCI6Mn0=|1000&sdata=j9nfxMCbfCgLi5YYFWpjG25+wrjY7ZOVPqt77CccYc8=&reserved=0> (6/25, Foust) "A National Academies committee has endorsed a NASA proposal to change the radiation exposure limits the agency sets for its astronauts but cautioned that the revised limit is still insufficient for human Mars missions. The June 24 report by a committee established by the National Academies and sponsored by NASA backs the agency's proposal to set a single lifetime radiation exposure limit for astronauts, rather than different limits based on age and gender."

ULA, Boeing, And NASA Prepare For Uncrewed And Crewed Starliner Flight Tests

## NASA Space Flight

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053&t=c&data=04|01|alicia.n.brown@nasa.gov|2018bb512caf4895996008d93a23a254|7005d45845be48ae8140d43d a96dd17b|0|0|637604746992627062|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6lk 1haWwiLCJXVCI6Mn0=|1000&sdata=fPvBpru5zI8/ZLBYqNoTzsebRVf1Lx8t1H+f8U9TrC8=&reserved=0> (6/26, Navin, Kanayama) "United Launch Alliance (ULA), Boeing, and NASA have all started their final preparations for the second Orbital Flight Test (OFT-2) for the CST-100 Starliner spacecraft. OFT-2 will demonstrate all of the changes made to the Starliner spacecraft following the partial failure on the first OFT mission in December 2019. Preparations are also underway for the Starliner Crew Flight Test (CFT), including the delivery of the Atlas V rocket to Cape Canaveral, Florida."

Boeing And NASA Will Launch Rosie, A Dummy, Into Space Next Month

#### SlashGear

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cc6&t=c&data=04|01|alicia.n.brown@nasa.gov|2018bb512caf4895996008d93a23a254|7005d45845be48ae8140d43d a96dd17b|0|0|637604746992627062|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiV2luMzIiLCJBTil6lk 1haWwiLCJXVCI6Mn0=|1000&sdata=jCbrEakT4uheBGN27uq7wkgIMCdrOemNN4rrInagWAY=&reserved=0> (6/25, Roston) "NASA and Boeing are gearing up to launch a literal dummy into space next month as part of the Commercial Crew Program. The dummy is named Rosie; she belongs to Boeing, which previously used her to collect data during its first (uncrewed) Orbital Flight Test, the OFT-1. This time around, Rosie will be sent into space to help collect data about Starliner's design." "Space Is For Everyone": Europe's Space Agency To Hire First Disabled Astronaut

## Reuters

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338&t=c&data=04|01|alicia.n.brown@nasa.gov|2018bb512caf4895996008d93a23a254|7005d45845be48ae8140d43d a96dd17b|0|0|637604746992637018|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiV2luMzIiLCJBTil6lk 1haWwiLCJXVCI6Mn0=|1000&sdata=L2XRatLgYuiLXPQx2YNf5k6550+zPUOLXRqyLALZcUU=&reserved=0> (6/25, Escritt) "The European Space Agency hopes to hire and launch the world's first physically disabled astronaut and several hundred would-be para-astronauts have already applied for the role, ESA head Josef Aschbacher told Reuters on Friday. The 22-member space programme has just closed its latest decennial recruitment call for astronauts and received 22,000 applicants, Aschbacher said."

A Final Word Before Mr. Bezos Blasts Off

## New York Times

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6dd&t=c&data=04|01|alicia.n.brown@nasa.gov|2018bb512caf4895996008d93a23a254|7005d45845be48ae8140d43d a96dd17b|0|0|637604746992637018|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6Ik 1haWwiLCJXVCI6Mn0=|1000&sdata=5lirtUzaz1gxw9GIT68fUtxAOZGIFZDziFf0qKnxoaY=&reserved=0> (6/27, Bensinger) "In over a decade in which I've covered Amazon, one conversation stands out as neatly summarizing the ethos of the e-commerce giant under Jeff Bezos, who will step aside as chief executive next month. An Amazon executive was confronting his new role as a buyer of large appliances, like dishwashers, after several years as a book buyer. ... So while Mr. Bezos floats weightlessly in the cosmos, the question remains whether lawmakers can ultimately bring Amazon back down to earth."

Jeff Bezos Is Heading To Space, But He's Not The Only Mogul Obsessed With Extreme Experiences. Here Are The Wildest Ways The World's Elite Spend Their Free Time.

## Insider

bdf&t=c&data=04|01|alicia.n.brown@nasa.gov|2018bb512caf4895996008d93a23a254|7005d45845be48ae8140d43da 96dd17b|0|0|637604746992646974|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiV2luMzliLCJBTil6lk1 haWwiLCJXVCI6Mn0=|1000&sdata=w4kzi+XdcFtOjanSyEFkaGQGIGEzrqXLrBkca491bPM=&reserved=0> (6/26, Hartmans) "In just a few short weeks, Jeff Bezos will take the riskiest flight of his life, one that takes him 62 miles above Earth, right to the edge of space. The soon-to-be-ex-Amazon CEO is something of an adventurer, what with his trips out to sea or to the bottom of caves. But that doesn't exactly make him unique among his peers — in fact, a passion for extreme experiences seems to be a common trait among the world's billionaires."

A Petition To Make Jeff Bezos Stay In Space Has More Than 120,000 Signatures

## CNBC

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f65&t=c&data=04|01|alicia.n.brown@nasa.gov|2018bb512caf4895996008d93a23a254|7005d45845be48ae8140d43da 96dd17b|0|0|637604746992646974|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiV2luMzliLCJBTil6lk1 haWwiLCJXVCI6Mn0=|1000&sdata=N4d9BTekwAAsE6HpjWzNDcln75xSmCs1CJur1Dz6mnE=&reserved=0> (6/25, Huddleston) "With less than a month to go before Jeff Bezos embarks on his 'greatest adventure' with a trip to space, more than a few people here on Earth are making it known they'd prefer it if the wealthiest man on the planet takes a one-way trip and remains in orbit. A petition on Change.org entitled 'Do not allow Jeff Bezos to return to Earth' launched in early June, after Bezos announced his plans to fly on next month's first passenger spaceflight of his company Blue Origin, and the petition already has more than 122,000 signatures as of Friday afternoon. Bezos has said he's dreamed of going to space since he was 5 years old."

Here Is How Richard Branson May Try To Beat Jeff Bezos To Space

## CNBC

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667&t=c&data=04|01|alicia.n.brown@nasa.gov|2018bb512caf4895996008d93a23a254|7005d45845be48ae8140d43d a96dd17b|0|0|637604746992646974|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6Ik 1haWwiLCJXVCI6Mn0=|1000&sdata=W7Msg/luJbXBeDQvTggXsNGOXww0dtvD2haXu/KIvuo=&reserved=0> (6/25, Sheetz) "Jeff Bezos plans to launch himself to the edge of space on July 20, but fellow billionaire Sir Richard Branson might still try to fly with Virgin Galactic first. Virgin Galactic leadership previously stated the company would conduct three more spaceflights to complete development testing of spacecraft VSS Unity. The company is working to begin flying paying passengers in early 2022, having completed a successful mission last month with just two pilots."

**ISS Spacewalk** 

#### KHOU-TV Houston

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30f&t=c&data=04|01|alicia.n.brown@nasa.gov|2018bb512caf4895996008d93a23a254|7005d45845be48ae8140d43da 96dd17b|0|0|637604746992656938|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiV2luMzliLCJBTil6lk1 haWwiLCJXVCI6Mn0=|1000&sdata=U+XXfkpjsuOE3snX2D2CDteV7s1tMwSmyR2ajKminb4=&reserved=0> (6/25) "And we are giving you a live look at the International Space Station. Astronauts are getting ready to head out for power system upgrades that will help missions to the moon."

#### Moon to Mars

The Chinese-Russian Lunar Axis Adopts A Plan From The Late Paul Spudis

#### The Hill

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371&t=c&data=04|01|alicia.n.brown@nasa.gov|2018bb512caf4895996008d93a23a254|7005d45845be48ae8140d43d a96dd17b|0|0|637604746992656938|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTil6Ik 1haWwiLCJXVCI6Mn0=|1000&sdata=7wr4US0u6Zzf3IfxeoxuW26DDaS2Qiw5CRZaDERXpSU=&reserved=0> (6/27, Whittington) "Recently, a group of Russian and Chinese space officials revealed plans for what they call an 'International Lunar Research Station' during a conference in St. Petersburg, Russia. The plan for the facility's development seemed remarkably similar to one proposed by Paul Spudis, the late lunar geologist and return-to-the-moon advocate, and Tony Lavoie, at the time employed by NASA."

Nelson's First NASA Challenge: The Space Race With China

#### Orlando (FL) Sentinel

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90a&t=c&data=04|01|alicia.n.brown@nasa.gov|2018bb512caf4895996008d93a23a254|7005d45845be48ae8140d43dabbb512caf4895996008d93a23a254|7005d45845be48ae8140d43dabbb512caf4895996008d93a23a254|7005d45845be48ae8140d43dabbb512caf4895996008d93a23a254|7005d45845be48ae8140d43dabbb512caf4895996008d93a23a254|7005d45845be48ae8140d43dabbb512caf4895996008d93a23a254|7005d45845be48ae8140d43dabbb512caf4895996008d93a23a254|7005d45845be48ae8140d43dabbb512caf4895996008d93a23a254|7005d45845be48ae8140d43dabbb512caf4895996008d93a23a254|7005d45845be48ae8140d43dabbb512caf4895996008d93a23a254|7005d45845be48ae8140d43dabbb512caf4895996008d93a23a254|7005d45845be48ae8140d43dabbb512caf4895996008d93a23a254|7005d45845be48ae8140d43dabbb512caf4895996008d93a23a254|7005d45845be48ae8140d43dabbb512caf4895996008d93a23a254|7005d45845be48ae8140d43dabbb512caf4895996008d93a23a254|7005d45845be48ae8140d43dabbb512caf4895996008d93a23a254|7005d45845be48ae8140d43dabbb512caf4895996008d93a23a254|7005d45845bb648ae8140d43dabbbb512caf488bb512caf488bb512caf488bb512caf488bb512caf48bb512caf488bb512caf488bb512caf488bb512caf488bb512caf488bb512caf488bb512caf488bb512caf488bb512caf488bb512caf488bb512caf488bb512caf488bb512caf488bb512caf488bb512caf48bb

a96dd17b|0|0|637604746992666885|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiV2luMzliLCJBTil6lk 1haWwiLCJXVCI6Mn0=|1000&sdata=NWHVgsknC6J208zyTxhdPkyzbi64liqjQ8CVmg1193o=&reserved=0> (6/27, Weiner, Paras) "While NASA focuses on Venus, China's space program, the China National Space Administration (CNSA), is aimed at landing people on the moon, something NASA hasn't done since Apollo 17 in 1972. It's astounding that 52 years since the U.S. landed, we have done nothing with human beings for decades but send commuter shuttles to a space station 200 miles away."

Mars May Have More Water Than Scientists Thought

## SlashGear

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ebe&t=c&data=04|01|alicia.n.brown@nasa.gov|2018bb512caf4895996008d93a23a254|7005d45845be48ae8140d43d a96dd17b|0|0|637604746992666885|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6lk 1haWwiLCJXVCI6Mn0=|1000&sdata=PXnw/QZLYUh5RTRoabrflePp6Df3+Yk5+PuY8BEs+Ss=&reserved=0> (6/27, McGlaun) "Data showed that there are subsurface lakes on Mars back in 2018. That data came from an ESA spacecraft called Mars Express. The spacecraft shot radar signals at the surface of the Red Planet, and the data gathered showed that the South Pole of the planet appeared to have liquid subsurface Lakes. Since 2018, follow-up studies have revealed what are believed to be additional subsurface lakes on Mars. A new paper was recently published by a pair of scientists from the NASA Jet Propulsion Laboratory."

NASA's Perseverance Rover Shot 62 Images For Its Iconic Selfie With Ingenuity

## Engadget

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5fd&t=c&data=04|01|alicia.n.brown@nasa.gov|2018bb512caf4895996008d93a23a254|7005d45845be48ae8140d43da 96dd17b|0|0|637604746992676843|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6lk1 haWwiLCJXVCI6Mn0=|1000&sdata=DRDh8FqIx5dP3TmZ350UKImAoBYDew3BUVImY2mYHe4=&reserved=0> (6/25, Bonifacic) "Back in April, NASA's Ingenuity rover captured the imagination of the world when it sent back an epic selfie it took with Ingenuity on the surface of Mars. It turns out, capturing that photo wasn't so easy as Perseverance posing, taking a single photo and calling it a day. According to a new video NASA released on Friday, what we got to see here on Earth was the result of 62 separate images the agency stitched together."

'Like A Flute': NASA Shares Sounds Of Mars Rover Snapping Epic Selfie

## **CNET** News

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ad7&t=c&data=04|01|alicia.n.brown@nasa.gov|2018bb512caf4895996008d93a23a254|7005d45845be48ae8140d43d a96dd17b|0|0|637604746992676843|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6lk 1haWwiLCJXVCI6Mn0=|1000&sdata=cbYqgntnpgrbVjeuZzz5Ew8wTdpeb/1b818cm2PUSAI=&reserved=0> (6/26, Kooser) "Taking a selfie on Earth is easy. You just hold out your arm and click. The Mars Perseverance rover held out its arm to snap an epic selfie with the Ingenuity helicopter in April, but the whole process was a lot more complex than on its home planet."

Mars Helicopter Takes It To The Limit With More Groundbreaking Flights

# CNN

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28a&t=c&data=04|01|alicia.n.brown@nasa.gov|2018bb512caf4895996008d93a23a254|7005d45845be48ae8140d43d a96dd17b|0|0|637604746992686800|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6lk 1haWwiLCJXVCI6Mn0=|1000&sdata=gJXrpdY7Gm+TDtcNt4BzE23HEo43NxDUrND/NNWyf1M=&reserved=0> (6/25, Strickland) "Where are you now, Mars Ingenuity helicopter? While it seems like the little chopper has been quiet, it turns out that Ingenuity has aced more of its flights – and even got a software update to fix an annoying issue that impacted some of its previous outings. The 4-pound helicopter has successfully flown eight times on Mars as of June 21, according to an update from Teddy Tzanetos, the helicopter operations lead at NASA's Jet Propulsion Laboratory in Pasadena, California."

China Wants To Build 'Sky Ladder' To Mars To Beam Up Humans And Cargo

#### The Hill

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c1f&t=c&data=04|01|alicia.n.brown@nasa.gov|2018bb512caf4895996008d93a23a254|7005d45845be48ae8140d43da 96dd17b|0|0|637604746992686800|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiV2luMzliLCJBTil6lk1 haWwiLCJXVCI6Mn0=|1000&sdata=3kGAF6vzgMjIyawyt64u2pFTX0SHMLDPjoepFwCZSOc=&reserved=0> (6/25, Romaine) "China wants to build a 'Sky Ladder' to Mars as part of the country's plans for future Mars expeditions, according to China's state-owned media the Global Times. The country's top rocket manufacturer, Wang Xiaojun, announced this week that China is aiming to put people on Mars by 2033, and a part of its plan includes what it is calling the 'Sky Ladder.'"

NASA Outline A Larger Helicopter For Future Mars Missions

## SlashGear

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513&t=c&data=04|01|alicia.n.brown@nasa.gov|2018bb512caf4895996008d93a23a254|7005d45845be48ae8140d43d a96dd17b|0|0|637604746992696754|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiV2luMzIiLCJBTil6lk 1haWwiLCJXVCI6Mn0=|1000&sdata=Ea9a2ssPWwEQZmSNV1Z7gK8WhUL0pV5npgQ9FocMJlg=&reserved=0> (6/25, McGlaun) "NASA has had impressive success with the Ingenuity helicopter that's been testing on the surface of Mars for weeks now. With the success of the Ingenuity helicopter, NASA engineers are already looking at concepts for larger and more capable rotorcraft that could be used for future missions. NASA hopes to continue flying the Ingenuity helicopter and conducting more missions. Data the helicopter is collecting supports the planning stages for future helicopter designs by engineers at JPL, the Ames Research Center, and AeroVironment. NASA is already considering a larger flying vehicle called the Mars Science Helicopter."

NASA's InSight Mars Lander Might Die By April If It Doesn't Get A Significant Energy Boost

#### Insider

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0e7&t=c&data=04|01|alicia.n.brown@nasa.gov|2018bb512caf4895996008d93a23a254|7005d45845be48ae8140d43d a96dd17b|0|0|637604746992696754|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiV2luMzIiLCJBTil6lk 1haWwiLCJXVCI6Mn0=|1000&sdata=Fbovhr7gWKv8BavcBWQuLNwyfL3G6X6tnIUT413xx/o=&reserved=0> (6/25, McFall-Johnsen) "NASA's InSight lander may not survive another year on Mars. The \$800 million robotic science station landed in a Martian plain called Elysium Planitia in November 2018. Since then, it has detected more than 500 Mars quakes, felt more than 10,000 dust devils pass by, and started to measure the planet's core. But over the last six months, InSight has been facing an energy crisis, since dust is building up on its solar panels."

NASA Scientists Find More Subsurface Lakes On Mars

## Gizmodo

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dcd&t=c&data=04|01|alicia.n.brown@nasa.gov|2018bb512caf4895996008d93a23a254|7005d45845be48ae8140d43d a96dd17b|0|0|637604746992706707|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTil6lk 1haWwiLCJXVCI6Mn0=|1000&sdata=uN6Mc5vzw19mg1vBDaff+wTxj8kWB6lBwHmLKIsn2J8=&reserved=0> (6/25, Schultz) "Researchers peering at layered deposits on Mars' south pole found what appear to be dozens of subsurface lakes, though many of them are in areas where water would be frozen. ... 'We're not certain whether these signals are liquid water or not, but they appear to be much more widespread than what the original paper found,' said Jeffrey Plaut, a research scientist at NASA's Jet Propulsion Laboratory, in an agency statement."

NASA Tells Lawmakers That It Wants To See Moon Landings Occur Annually For 12 Straight Years

## Insider

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4c6&t=c&data=04|01|alicia.n.brown@nasa.gov|2018bb512caf4895996008d93a23a254|7005d45845be48ae8140d43d a96dd17b|0|0|637604746992706707|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6Ik 1haWwiLCJXVCI6Mn0=|1000&sdata=fULoc2U9RyyTU8ZIgqiSokQwA5z3Zmsb90Ajh7pm5zg=&reserved=0> (6/25, Shalvey) "NASA wants to go to the moon every year for a dozen years. Agency Administrator Bill Nelson on Wednesday said the \$2.9 billion contract awarded to SpaceX for the Artemis program marked the beginning of what would be a series of ambitious projects to return often to the moon."

## Solar System and Beyond

NASA Completes Tests To Identify Problem With Hubble Space Telescope Computer

#### Fox News

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879&t=c&data=04|01|alicia.n.brown@nasa.gov|2018bb512caf4895996008d93a23a254|7005d45845be48ae8140d43d a96dd17b|0|0|637604746992716667|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6Ik 1haWwiLCJXVCI6Mn0=|1000&sdata=8d1I+RfIJ+Yi0EfO2QGHfFmcr5J8seegKB8obem2FcA=&reserved=0> (6/26, Musto) "NASA said Friday it had completed additional diagnostic testing in an effort to identify a problem with the Hubble Space Telescope's (HST) payload computer. This announcement comes on the heels of additional testing on Wednesday and Thursday and after the spacecraft's payload computer 'halted' on June 13 and it stopped collecting science data."

There's A Problem With Hubble, And NASA Hasn't Been Able To Fix It Yet

#### Universe Today

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71c&t=c&data=04|01|alicia.n.brown@nasa.gov|2018bb512caf4895996008d93a23a254|7005d45845be48ae8140d43d a96dd17b|0|0|637604746992716667|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiV2luMzIiLCJBTil6lk 1haWwiLCJXVCI6Mn0=|1000&sdata=Jz91Dn8UBIcqMiUjAi6d8g9Rwd3g/KF8o5Y/+wjTbX8=&reserved=0> (6/25, Williams) "For over thirty years, the Hubble Space Telescope has been in continuous operation in Low Earth Orbit (LEO) and revealing never-before-seen aspects of the Universe. In addition to capturing breathtaking images of our Solar System and discovering extrasolar planets, Hubble also probed the deepest reaches of time and space, causing astrophysicists to revise many of their previously-held theories about the cosmos. Unfortunately, Hubble may finally be reaching the end of its lifespan. In recent weeks, NASA identified a problem with the telescope's payload computer which suddenly stopped working."

Even The Hubble Space Telescope's Backup Computer Is Glitching Now – Raising New Questions About What's Gone Wrong

## Insider

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bf8&t=c&data=04|01|alicia.n.brown@nasa.gov|2018bb512caf4895996008d93a23a254|7005d45845be48ae8140d43da 96dd17b|0|0|637604746992726622|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiV2luMzIiLCJBTil6lk1 haWwiLCJXVCI6Mn0=|1000&sdata=E5+GEIzHvIz1E/iIVIjtneYP5YrRLdQi2P6WWL2mHNo=&reserved=0> (6/25, McFall-Johnsen) "NASA has been trying to figure out what's wrong with the Hubble Space Telescope for nearly two weeks, but the mystery just deepened. Hubble, which launched into orbit in 1990, is the world's most powerful space telescope. It has captured images of the births and deaths of stars, discovered new moons around Pluto, and tracked two interstellar objects as they zipped through our solar system. Hubble's observations have allowed astronomers to calculate the age and expansion of the universe and to peer at galaxies formed shortly after the Big Bang."

NASA Is Pulling Out All The Stops To Fix The Hubble Space Telescope

## SlashGear

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b1a&t=c&data=04|01|alicia.n.brown@nasa.gov|2018bb512caf4895996008d93a23a254|7005d45845be48ae8140d43d a96dd17b|0|0|637604746992726622|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiV2luMzIiLCJBTil6lk 1haWwiLCJXVCI6Mn0=|1000&sdata=e2Kjs+Gw+XYanh/tUCjAuQgtMAGYL6lw3Gwpa82Ht4M=&reserved=0> (6/27, McGlaun) "The iconic Hubble Space Telescope is still non-functional at this time. However, NASA reminds fans that all science instruments and the spacecraft itself are in perfect working order. The problem is the '80s era computer responsible for operations of the spacecraft has encountered a serious problem that has prevented it from exiting safe mode. NASA continued to diagnose the problem with the payload computer and announced that it completed another series of tests on June 23 and 24th."

Weird Neptune-like Exoplanet May Have Water Clouds

#### SPACE

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e1b&t=c&data=04|01|alicia.n.brown@nasa.gov|2018bb512caf4895996008d93a23a254|7005d45845be48ae8140d43d a96dd17b|0|0|637604746992736579|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiV2luMzIiLCJBTil6lk 1haWwiLCJXVCI6Mn0=|1000&sdata=Pyr0XOq8FgETwPGAd4jBxixxdYPtsCx3+ZaGIPu7Vjg=&reserved=0> (6/25, Howell) "A Neptune-like planet that's relatively close to Earth may sport a watery surprise. The exoplanet, called TOI-1231 b, might have clouds of water high in its atmosphere, but the observations are so preliminary that it's hard to say for sure. 'Future observations of this new planet will let us determine just how common (or rare) it is for water clouds to form around these temperate worlds,' Jennifer Burt, a scientist at NASA's Jet Propulsion Laboratory in California and lead author of the new research, said in a statement from the University of New Mexico, which was also involved in the research."

The 7 Weirdest Things About Venus, Hell Planet

#### Gizmodo

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ba7&t=c&data=04|01|alicia.n.brown@nasa.gov|2018bb512caf4895996008d93a23a254|7005d45845be48ae8140d43d a96dd17b|0|0|637604746992736579|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiV2luMzIiLCJBTil6lk 1haWwiLCJXVCI6Mn0=|1000&sdata=zEDhfQTbWnxyKm0sF3M/DoRkvq5GiNTTc68X5QA1tic=&reserved=0> (6/25, Schultz) "It's been nearly 30 years since a NASA spacecraft went to Venus, a yellowish planet 67 million miles from the Sun and 141 million miles from us. Venus is often thought of as a sibling planet to Earth, both being rocky worlds close enough to the Sun to bask in its heat. And yet, at some point in their histories, the two worlds diverged in an extreme way."

Scientists Find 29 Planets Where Aliens Could Be Watching Us

#### The Hill

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a6b&t=c&data=04|01|alicia.n.brown@nasa.gov|2018bb512caf4895996008d93a23a254|7005d45845be48ae8140d43d a96dd17b|0|0|637604746992746534|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiV2luMzliLCJBTil6lk 1haWwiLCJXVCI6Mn0=|1000&sdata=UwtRx9DyFRfT29iclo7E1XtGXISfBzncsKqdRQTq8L8=&reserved=0> (6/25, Spencer) "Scientists have identified 1,715 star systems where aliens could have discovered Earth by observing our planet's transit — and within that, 29 planets could be habitable and are uniquely positioned to watch us and pick up on our broadcast transmissions, The Guardian reports. ... Kaltenegger and Faherty, an astrophysicist at the American Museum of Natural History, used the Gaia catalogue from the European Space Agency to position stars and motions to figure out which stars are in the Earth's transit zone, according to The Guardian."

Volunteers And Amateurs Named Credited In NASA's Latest Discoveries

## NPR

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d61&t=c&data=04|01|alicia.n.brown@nasa.gov|2018bb512caf4895996008d93a23a254|7005d45845be48ae8140d43d a96dd17b|0|0|637604746992746534|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTil6lk 1haWwiLCJXVCI6Mn0=|1000&sdata=Ge+olLq7tq06/LhtEqUEvCvFzqTwV3QMF+4xWJv8QAQ=&reserved=0> (6/26) "NASA is crediting volunteers and amateurs with advancing our knowledge of the universe through online data investigations, helping the agency identify two new planets far beyond our solar system. This month, NASA announced the discovery of two new planets far beyond our solar system, exotic worlds orbiting a star that's similar to our own sun but bigger and brighter and about 352 light years away. The find is published online in the Royal Astronomical Society, where the names of volunteers and amateurs are credited as co-authors. Cesar Rubio is a machinist in Pomona, Calif."

Space Tech

James Webb Space Telescope Will Study Quasars To Learn About The Early Universe

## SlashGear

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1cd&t=c&data=04|01|alicia.n.brown@nasa.gov|2018bb512caf4895996008d93a23a254|7005d45845be48ae8140d43d a96dd17b|0|0|637604746992756491|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiV2luMzIiLCJBTil6lk 1haWwiLCJXVCI6Mn0=|1000&sdata=YIcPX17v4OBBu1sPMGRaXOrHwuX6GMAuSBo1o0+wP8M=&reserved=0> (6/25, Then) "NASA is looking forward to the launch of the James Webb Space Telescope later this year. The telescope will observe all manner of space phenomena but will particularly focus on studying quasars. A quasar is a very bright and distant, active supermassive black hole that is millions to billions of times the sun's mass. Quasars are typically located at the centers of galaxies and feed on material from an accretion disk surrounding it, and unleashes torrents of radiation."

Watch NASA Launch A Small Rocket With Dozens Of Student Experiments Today!

## SPACE

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d41&t=c&data=04|01|alicia.n.brown@nasa.gov|2018bb512caf4895996008d93a23a254|7005d45845be48ae8140d43d a96dd17b|0|0|637604746992756491|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6Ik 1haWwiLCJXVCI6Mn0=|1000&sdata=eH++FCfDKzsJTYQTjJU4Qi4DOwKuXgbtsxADyzS+LOk=&reserved=0> (6/25, Weitering) "NASA will launch dozens of student experiments to space on a sounding rocket today (June 25), and you can watch it live here. After a 24-hour weather delay, the Terrier-Improved Orion suborbital sounding rocket is now scheduled to lift off from NASA's Wallops Flight Facility in Wallops Island, Virginia, today between 8 a.m. and 10 a.m. EDT (1200-1400 GMT). Watch it live in the window above, courtesy of NASA, or tune in via the Wallops YouTube channel. The live broadcast begins at 7:40 a.m. EDT (1140 GMT)."

Watch NASA Rocket Launch Today Live From Wallops Island

## Newsweek

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84f&t=c&data=04|01|alicia.n.brown@nasa.gov|2018bb512caf4895996008d93a23a254|7005d45845be48ae8140d43da 96dd17b|0|0|637604746992766449|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiV2luMzliLCJBTil6lk1 haWwiLCJXVCI6Mn0=|1000&sdata=C/DnhI1HBswm2DFRe40MMOV1wtqxnCaTo8PYxSLkLRY=&reserved=0> (6/25, Browne) "NASA is launching a rocket packed with student science experiments on Friday morning, and some U.S. east coast residents may be able to see it in person. The Terrier-Improved Orion rocket is due to launch between 8 a.m. and 10 a.m. EDT. It will see dozens of experiments, built by college students across the U.S., launch aboard the scientific research rocket as part of the educational RockOn! Program."

Various

NASA Team To Study New Roles For The Agency In Addressing Orbital Debris

## Space News

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61d&t=c&data=04|01|alicia.n.brown@nasa.gov|2018bb512caf4895996008d93a23a254|7005d45845be48ae8140d43d a96dd17b|0|0|637604746992766449|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6lk 1haWwiLCJXVCI6Mn0=|1000&sdata=B7OcP3oRle2nMjURVplyOC6qVPtRnI/xD2OfxzLNqbM=&reserved=0> (6/27, Foust) "NASA has established a working group to examine what new roles the agency can take to mitigate the growth of orbital debris and promote space sustainability. In a talk at the Secure World Foundation's Summit for Space Sustainability June 23, Bhavya Lal, senior adviser to the NASA administrator for budget and finance, said she is leading a recently established team that will examine how the agency could take a larger role in efforts to mitigate and remediate orbital debris."

NASA Will Dismantle Two Test Sites At Toxic Santa Susana Field Lab Area

#### Los Angeles Daily News

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a36&t=c&data=04|01|alicia.n.brown@nasa.gov|2018bb512caf4895996008d93a23a254|7005d45845be48ae8140d43d a96dd17b|0|0|637604746992776404|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiV2luMzIiLCJBTil6lk 1haWwiLCJXVCI6Mn0=|1000&sdata=Ww4+3T0D+zMp5EUCrZjM08zxGCdK3cUyH7+0Mq42SY8=&reserved=0> (6/25, Grigoryants) "NASA said it will move forward with plans to demolish the Bravo and Coca vertical test stands at the Santa Susana Field Lab, contaminated when the area was used to test rocket engines and other activities for decades. Built in the 1950s, the Alpha, Bravo, Coca and Delta test stands were home to rocket testing for NASA's Space Shuttle program and for U.S. Air Force missiles. Later the sites would play a major role in buoying the Apollo program, which launched the first American astronauts to the moon."

U.S. Has No Explanation For Unidentified Objects And Stops Short Of Ruling Out Aliens

## New York Times

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3b0&t=c&data=04|01|alicia.n.brown@nasa.gov|2018bb512caf4895996008d93a23a254|7005d45845be48ae8140d43d a96dd17b|0|0|637604746992776404|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiV2luMzIiLCJBTil6lk 1haWwiLCJXVCI6Mn0=|1000&sdata=71tYYjeStfQzVTeNdT/AA4chwuDxgDJizz09nVMcfic=&reserved=0> (6/25, Barnes) "The government still has no explanation for nearly all of the scores of unidentified aerial phenomena reported over almost two decades and investigated by a Pentagon task force, according to a report released on Friday, a result that is likely to fuel theories of otherworldly visitations. ... The report avoids any real discussion of the possibility that the unexplained phenomena are extraterrestrial in nature. It was not the purpose of the government's task force to search for extraterrestrial life, a responsibility that falls to NASA, said a senior governmental official."

## Pentagon UFO Report

## KRIV-TV Houston

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Former NASA Administrator On The Possibility Of U.S.-China Cooperation In Space

#### CNBC

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ee4&t=c&data=04|01|alicia.n.brown@nasa.gov|2018bb512caf4895996008d93a23a254|7005d45845be48ae8140d43d a96dd17b|0|0|637604746992786359|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6Ik 1haWwiLCJXVCI6Mn0=|1000&sdata=zKHJy6yAZFUmxpJS30TxfBsqwT615q+DyIvmP8AZ6pw=&reserved=0> (6/28) "Former NASA administrator Charles Bolden says the U.S. and China may not reach a partnership in space anytime soon due to the current political environment; and China will be following the U.S. in broader space exploration."

#### Other

Elon Musk's Starship Could Attempt Orbital Test Next Month

The Hill

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a04&t=c&data=04|01|alicia.n.brown@nasa.gov|2018bb512caf4895996008d93a23a254|7005d45845be48ae8140d43d a96dd17b|0|0|637604746992796316|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiV2luMzliLCJBTil6lk 1haWwiLCJXVCI6Mn0=|1000&sdata=fUh7rc685yIn8HLMHNZwY+PIPIZclfxOGZUf0UyCNkg=&reserved=0> (6/25, Guzman) "Elon Musk's SpaceX is aiming to launch its Starship spacecraft into Earth's orbit for the first time next month, according to CNBC. The outlet reports SpaceX president Gwynne Shotwell said during the National Space Society's virtual International Space Development conference that the company is 'shooting for July.'"

SpaceX's New Rocket Factory Is Making Its Texas Neighbors Mad

## NPR

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61e&t=c&data=04|01|alicia.n.brown@nasa.gov|2018bb512caf4895996008d93a23a254|7005d45845be48ae8140d43d a96dd17b|0|0|637604746992796316|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiV2luMzliLCJBTil6lk 1haWwiLCJXVCI6Mn0=|1000&sdata=E0cnKCXcg6an1WnAQVUxvqpnOQGgbYcvrcJawfrE0ig=&reserved=0> (6/26) "What Elon Musk has built on the remote mudflats at the southern tip of Texas is astonishing: gantries, fuel storage tanks, an Airstream trailer village, and a silver rocket straight out of Buck Rogers—all fronted by neon letters that spell out 'Starbase.' But can SpaceX coexist with the original feathered inhabitants on the lower Gulf coast? Environmentalists from Brownsville to Washington D.C. are protesting his ambitious vision to build, test and launch next-generation rockets in this fragile ecosystem."

SpaceX President Gwynne Shotwell Says She Is Hoping For A Starship Orbital Launch In July

## Insider

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dcb&t=c&data=04|01|alicia.n.brown@nasa.gov|2018bb512caf4895996008d93a23a254|7005d45845be48ae8140d43d a96dd17b|0|0|637604746992806272|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6Ik 1haWwiLCJXVCI6Mn0=|1000&sdata=Kk+OVWVDiL5WLmxm8LkblqeAsz1dfc27I/h5Gt/OO5w=&reserved=0> (6/27, Tayeb) "SpaceX's president, Gwynne Shotwell, said the company is "shooting for July" for its first Starship rocket orbit launch, SpaceNews reported. Speaking at the National Space Society's International Space Development Conference on Friday, Shotwell said: 'I'm hoping we make it, but we all know that this is difficult.'"

SpaceX Aiming For July For Starship Orbital Launch Despite Regulatory Reviews

## Space News

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fd6&t=c&data=04|01|alicia.n.brown@nasa.gov|2018bb512caf4895996008d93a23a254|7005d45845be48ae8140d43da 96dd17b|0|0|637604746992806272|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6lk1 haWwiLCJXVCI6Mn0=|1000&sdata=kExlipp36y9xLwSNV64e3j/uz68piWMASu3SilvD4+Y=&reserved=0> (6/26, Foust) "SpaceX President Gwynne Shotwell says the company is 'shooting for July' for the first orbital launch of the company's Starship vehicle despite lacking the regulatory approvals needed for such a launch. Speaking at the National Space Society's International Space Development Conference (ISDC) June 25, Shotwell said the company was pressing ahead with plans for an orbital flight involving the Super Heavy booster and Starship upper stage from the company's Boca Chica, Texas, test site."

SpaceX Plans To Launch Its First Orbital Starship Test Flight In July

## Engadget

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708&t=c&data=04|01|alicia.n.brown@nasa.gov|2018bb512caf4895996008d93a23a254|7005d45845be48ae8140d43d a96dd17b|0|0|637604746992816227|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6lk 1haWwiLCJXVCI6Mn0=|1000&sdata=x+1dC6/cOhHEpQxpcdmcgaEHOFoq9CiNacEyX9W/hZY=&reserved=0> (6/26, Fingas) "SpaceX might conduct Starship's first orbital test flight in a matter of weeks. According to CNBC, SpaceX president Gwynne Shotwell told those at the online International Space Development conference that the company was 'shooting for July' when planning the orbital trip. Shotwell was aware of the challenges, but said that her firm was 'really on the cusp' of that key journey."

SpaceX Aims To Launch First Orbital Starship Flight In July, Company President Says

## CNBC

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27a&t=c&data=04|01|alicia.n.brown@nasa.gov|2018bb512caf4895996008d93a23a254|7005d45845be48ae8140d43d a96dd17b|0|0|637604746992816227|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6Ik 1haWwiLCJXVCI6Mn0=|1000&sdata=BQJog1esb6EImA7AGbKYgwGmvRi9hWqeIvwcgf915dI=&reserved=0> (6/25, Sheetz) "Elon Musk's SpaceX is 'shooting for July' to launch the first orbital spaceflight of its Starship rocket, company president Gwynne Shotwell said Friday. 'I'm hoping we make it, but we all know that this is difficult,' Shotwell said, speaking at the National Space Society's virtual International Space Development conference."

SpaceX Delays Rare-trajectory Cape Canaveral Launch To Next Week

## Florida Today

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df7&t=c&data=04|01|alicia.n.brown@nasa.gov|2018bb512caf4895996008d93a23a254|7005d45845be48ae8140d43da 96dd17b|0|0|637604746992826184|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiV2luMzIiLCJBTil6lk1 haWwiLCJXVCI6Mn0=|1000&sdata=j23cuwworXwjke52sIM/yLRaO0BPrzHScqyL9iOuHnU=&reserved=0> (6/25, Kelly) "SpaceX is targeting no earlier than next week for its upcoming Falcon 9 launch from Florida, a rare polar mission that will see the rocket pivot south and hug the state's east coast. The company on Friday confirmed teams were targeting no earlier than 2:56 p.m. Tuesday, June 29, for the 230-foot rocket's flight from Cape Canaveral Space Force Station. The mission named Transporter-2 was originally slated to fly from Launch Complex 40 on Friday, June 25."

Russia's Soyuz Launches Pion-NKS Naval Intelligence Satellite

## NASA Space Flight

9e7&t=c&data=04|01|alicia.n.brown@nasa.gov|2018bb512caf4895996008d93a23a254|7005d45845be48ae8140d43d a96dd17b|0|0|637604746992826184|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiV2luMzliLCJBTil6lk 1haWwiLCJXVCI6Mn0=|1000&sdata=NzIrN0noKz6yBq54lWro9PArjuB+keLheBWkpeOhBw4=&reserved=0> (6/25, Graham) "Russia launched the first satellite for its long-delayed next-generation ocean reconnaissance system on Friday. The Pion-NKS No.901 satellite lifted off atop a Soyuz-2-1b carrier rocket from the Plesetsk Cosmodrome in Northern Russia at 22:50 Moscow Time (19:50 UTC). Pion-NKS is part of the wider Liana program, aimed at replacing the Soviet-era signals intelligence satellites which Russia previously used to collect and monitor radio signals from low Earth orbit. Pion replaces the Upravlenniye Sputnik – Passivny Modifikirovanny (US-PM) satellites used for naval reconnaissance, while the complementary Lotos-S satellites are replacing Tselina-2 spacecraft that were specialized for locating radio sources on land."

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888&t=c&data=04|01|alicia.n.brown@nasa.gov|2018bb512caf4895996008d93a23a254|7005d45845be48ae8140d43d a96dd17b|0|0|637604746992836142|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6lk 1haWwiLCJXVCI6Mn0=|1000&sdata=YX5J/x3dZIWy1eoMUWTQ414+eUS39nfe1FBG/7tPco4=&reserved=0>. The NASA Morning Briefing is published five days a week by Bulletin Intelligence, which creates custom briefings for government and corporate leaders. We can be found on the Web at BulletinIntelligence.com, or called at (703) 483-6100.

# [EXTERNAL] NASA Morning Briefing for Wednesday, June 30, 2021

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## Editor's Note

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844&t=c&data=04|01|alicia.n.brown@nasa.gov|0cdc359b13e94ff4297208d93bb5fb36|7005d45845be48ae8140d43da 96dd17b|0|0|637606475058550285|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6Ik1 haWwiLCJXVCI6Mn0=|1000&sdata=MZtQGF1tIAa/PUgvAnv0Negd9VF9a9XsWPXd1CIR3gM=&reserved=0>. A NASA email address is required.

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- Elon Musk Says Starlink Will Be Available Worldwide In August (CNET News) <#S61>
- SpaceX Rocket Launch Carrying 88 Satellites Delayed By A Wayward Plane (SPACE) <#S62>
- SpaceX Transporter-2 Launch Today Scrubbed And Elon Musk Isn't Happy (SlashGear) <#S63>
- Elon Musk Touts SpaceX Surging Internet Growth, But Still Says Goal Is To Avoid Bankruptcy (CNN Business)
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- SpaceX Scrubs Transporter-2 Launch Due To Range Issue [Updated] (Ars Technica) <#S65>
- Musk Says May Need \$30 Billion To Keep Starlink In Orbit (Reuters) <#S66>
- SpaceX Had To Reschedule Its Rocket Launch Because A Helicopter Entered The 'Keep Out Zone' With Seconds To Go – And Elon Musk Isn't Happy About It (Insider) <#S67>
- Virgin Orbit Looks To Increase Launch Rates In 2022 (Space News) <#S68>
- SpaceX's Starship Could Launch To Orbit For 1st Time As Soon As July (SPACE) <#S69>
- Former U.S. Air Force Top Counsel Tom Ayres Joins Voyager Space (Space News) <#S70>

## Top Stories

Russian Cargo Ship Lifts Off For International Space Station

## AP

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730&t=c&data=04|01|alicia.n.brown@nasa.gov|0cdc359b13e94ff4297208d93bb5fb36|7005d45845be48ae8140d43da 96dd17b|0|0|637606475058550285|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6Ik1 haWwiLCJXVCI6Mn0=|1000&sdata=874y8kv9B4W7PWB3aS78bWbfTqXyjfuuSkWy1UBlq9w=&reserved=0> (6/29) "An uncrewed Russian cargo ship blasted off Wednesday on a mission to deliver supplies to the International Space Station. The Progress MS-17 lifted off atop a Soyuz rocket from the Russian space complex in Baikonur, Kazakhstan, at 4:27 a.m. (23:27 GMT Tuesday)."

Stunning Image Shows International Space Station Moving Across The Sun

## The Hill

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8a5&t=c&data=04|01|alicia.n.brown@nasa.gov|0cdc359b13e94ff4297208d93bb5fb36|7005d45845be48ae8140d43da 96dd17b|0|0|637606475058560253|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6Ik1 haWwiLCJXVCI6Mn0=|1000&sdata=il7I0C/82rwKLxehIUeGGnXh/cjvGDFaPbSUxdXE1Lk=&reserved=0> (6/29, Guzman) "NASA has released a breathtaking composite image that shows the International Space Station (ISS) crossing in front of the sun. The image captured by NASA photographer Joel Kowsky shows the ISS as a small shape with visible solar arrays on both sides with the sun as a glowing, bright orange backdrop."

Northrop Grumman's Cygnus Cargo Ship Departs Space Station To Begin New Mission In Orbit

## SPACE

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fb2&t=c&data=04|01|alicia.n.brown@nasa.gov|0cdc359b13e94ff4297208d93bb5fb36|7005d45845be48ae8140d43da9 6dd17b|0|0|637606475058560253|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6lk1h aWwiLCJXVCI6Mn0=|1000&sdata=hVIdgbjRhec1TpWonY4C158z1+stGIa9jmQrZqxrj6Y=&reserved=0> (6/29, Thompson) "A Northrop Grumman Cygnus cargo spacecraft successfully undocked from the International Space Station Tuesday (June 29) at 12:25 p.m. EDT (1625 GMT), more than four months after it arrived in orbit. The undocking aired live on NASA TV, with the spacecraft separating from the orbital outpost right on time, enabling the craft to begin a secondary mission before its planned fiery demise."

Washington Goes Crazy With Talk Of UFOs, Alien Life

## Washington Times

469&t=c&data=04|01|alicia.n.brown@nasa.gov|0cdc359b13e94ff4297208d93bb5fb36|7005d45845be48ae8140d43da 96dd17b|0|0|637606475058570206|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6lk1 haWwiLCJXVCI6Mn0=|1000&sdata=bjhSQWSxmMbn7veM1ymnXeve2JIOI9UImAgrgDhjPxU=&reserved=0> (6/29, Curl) "ANALYSIS/OPINION: Every summer in Washington, D.C., the dog days arrive. Temperatures soar into the 100s in the nation's capital, part of which was literally built in a swamp. ... NASA Administrator Bill Nelson, a former astronaut and U.S. senator, said Monday that he doesn't think we 'are alone' here on Earth."

## NextGov

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34f&t=c&data=04|01|alicia.n.brown@nasa.gov|0cdc359b13e94ff4297208d93bb5fb36|7005d45845be48ae8140d43da9 6dd17b|0|0|637606475058570206|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6lk1h aWwiLCJXVCI6Mn0=|1000&sdata=GR3+5I3FAHaYt+Ymf2WIUZBfZE1BSYH87KwejsEmQD8=&reserved=0> (6/29, Bublé) "For the ninth year in a row, NASA came out as the best place to work in the federal government among large agencies in a nonprofit's annual rankings. On Tuesday, the nonprofit Partnership for Public Service and global management consulting firm Boston Consulting Group released the 2020 Best Places to Work in the Federal Government rankings, based largely on responses to the Office of Personnel Management's annual Federal Employee Viewpoint Survey that was administered from Sept. 14, 2020, to Nov. 5, 2020. The Partnership and consultancy incorporated additional survey data from 10 agencies (including the Veterans Affairs Department and Peace Corps) as well as responses from intelligence agency employees."

After Delayed SpaceX Launch, Musk Says Reform Needed For Humanity To 'Become A Spacefaring Civilization'

#### Fox Business

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01f&t=c&data=04|01|alicia.n.brown@nasa.gov|0cdc359b13e94ff4297208d93bb5fb36|7005d45845be48ae8140d43da9 6dd17b|0|0|637606475058580163|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6lk1h aWwiLCJXVCI6Mn0=|1000&sdata=mq0H9ESUzyotprZMccyqqGEZJjc345M3oEKa5jQPJAI=&reserved=0> (6/29, Best) "SpaceX was seconds away from sending dozens of satellites into orbit aboard its Falcon 9 rocket on Tuesday when the launch was called off because an airplane entered its launch zone. The launch's 24-hour delay earned the ire of SpaceX CEO Elon Musk, who tweeted that the rocket's 'keep out zone' is 'unreasonably gigantic.'"

Flight

No content.

Earth

Mountaintop Glacier Ice Is Disappearing In Tropics Globally

## Forbes

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21f&t=c&data=04|01|alicia.n.brown@nasa.gov|0cdc359b13e94ff4297208d93bb5fb36|7005d45845be48ae8140d43da9 6dd17b|0|0|637606475058580163|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6lk1h aWwiLCJXVCI6Mn0=|1000&sdata=Qw9PlyIrCUrC3r9PeAtBQXoFvHSaggZPkhIZ6YkLpSw=&reserved=0> (6/29, Shetty) "Glacier ice on the mountaintop now covers significantly less area in the tropical region compared to 50 years ago. The change has been linked to rising global temperatures, according to a latest study. ... This is the first such study to combine NASA satellite imagery with data from ice cores drilled during field expeditions on tropical glaciers around the world. That combination shows that climate change is causing these glaciers, which have long been sources of water for nearby communities, to disappear and indicates that those glaciers have lost ice more quickly in recent years."

A Massive Lake Suddenly Vanished In Antarctica, Scientists Discover
Vice

<a href="https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021063002nasa&r=email-dc4f&l=00a-">https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021063002nasa&r=email-dc4f&l=00a-</a>

e3f&t=c&data=04|01|alicia.n.brown@nasa.gov|0cdc359b13e94ff4297208d93bb5fb36|7005d45845be48ae8140d43da9 6dd17b|0|0|637606475058590119|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6lk1h aWwiLCJXVCI6Mn0=|1000&sdata=GqWOIaf6JBUXI4+d5vIQg7cDObecUJUWxYR6xH42L2c=&reserved=0> (6/29, Ferreira) "A massive lake, filled with billions of cubic feet of water, vanished within the span of a few days in Antarctica, leaving a sinkhole that is visible in images captured from outer space, reports a new study. ... Warner thought the structure might be a doline, or sinkhole, that could point to a dramatic and recent drainage event. With the help of sophisticated satellites such as NASA'S WorldView and the European Space Agency's Sentinel constellation, he was able to look back in time and pinpoint when the vast lake emptied out through channels that burst open in the ice below it."

NASA Studying Louisiana River Delta System

# KIAH-TV Houston

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260&t=c&data=04|01|alicia.n.brown@nasa.gov|0cdc359b13e94ff4297208d93bb5fb36|7005d45845be48ae8140d43da 96dd17b|0|0|637606475058590119|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6Ik1 haWwiLCJXVCI6Mn0=|1000&sdata=BjTxyArsdtzNLz4sOi2CvLHnSzyxeQGMUdzW0GRhdTw=&reserved=0> (6/29) "Now let's talk a little space, but here on Earth NASA's using high-tech airborne systems along with boats and nets logging work on islands for what is being called a 15-million-dollar study of Louisiana's river delta system."

Humans in Space

Russian Cargo Ship Lifts Off For International Space Station

# AP

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cb5&t=c&data=04|01|alicia.n.brown@nasa.gov|0cdc359b13e94ff4297208d93bb5fb36|7005d45845be48ae8140d43da 96dd17b|0|0|637606475058600063|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6lk1 haWwiLCJXVCI6Mn0=|1000&sdata=dMZVoW86dLC76n5HcspID7Kq6nP26bA2CLMC//8ClkQ=&reserved=0> (6/29) "An uncrewed Russian cargo ship blasted off Wednesday on a mission to deliver supplies to the International Space Station. The Progress MS-17 lifted off atop a Soyuz rocket from the Russian space complex in Baikonur, Kazakhstan, at 4:27 a.m. (23:27 GMT Tuesday)."

Russia's Progress Cargo Ship Successfully Launches To Space Station

# SPACE

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5eb&t=c&data=04|01|alicia.n.brown@nasa.gov|0cdc359b13e94ff4297208d93bb5fb36|7005d45845be48ae8140d43da 96dd17b|0|0|637606475058600063|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiV2luMzliLCJBTil6lk1 haWwiLCJXVCI6Mn0=|1000&sdata=BO5JKZ62R8P+Q/yXzQwe39hlig0vnKum9rJjmELEu4A=&reserved=0> (6/29, Gohd) "Tonight (June 29), Russia's uncrewed Progress 78 mission successfully launched to space. At 7:27 p.m. EDT (2327 GMT, or 4:27 a.m. June 30 local time, Russia's Progress MS-17 cargo spacecraft launched to the International Space Station from the Russian space agency Roscosmos' Baikonur Cosmodrome in Kazakhstan in a mission dubbed Progress 78 by NASA. The cargo ship launched aboard a Soyuz 2.1a rocket." Russian Cargo Ship Sets Off After The International Space Station In Dramatic Sky Show

### CBS News

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2b7&t=c&data=04|01|alicia.n.brown@nasa.gov|0cdc359b13e94ff4297208d93bb5fb36|7005d45845be48ae8140d43da 96dd17b|0|0|637606475058610030|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6Ik1 haWwiLCJXVCI6Mn0=|1000&sdata=3F4Ap8eW188OspciW25syXFdwhLpqKfL1zJagO0TT2Y=&reserved=0> (6/29, Harwood) "A Russian Progress cargo ship blasted off from the Baikonur Cosmodrome in Kazakhstan on Tuesday and set off after the International Space Station, climbing into the light of the rising sun and putting on a spectacular show as its expanding exhaust plume billowed and blossomed in the upper atmosphere. The Progress MS-17/78P spacecraft and its Soyuz 2-1a booster took off from the Baikonur Cosmodrome at 7:27 p.m. ET (4:27 a.m. Wednesday local time), lighting up the predawn sky as it climbed directly into the plane of the space station's orbit to kick off a twoday rendezvous."

Roscosmos Launches Progress MS-17 To ISS

## NASA Space Flight

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6e1&t=c&data=04|01|alicia.n.brown@nasa.gov|0cdc359b13e94ff4297208d93bb5fb36|7005d45845be48ae8140d43da 96dd17b|0|0|637606475058610030|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6lk1 haWwiLCJXVCI6Mn0=|1000&sdata=hbGhtGOtcfUR9BJTh78At5ZkDkaE4d0tAi94MRPbEZ0=&reserved=0> (6/29, Navin, Kanayama) "Roscosmos has launched their latest resupply mission to the International Space Station, Progress MS-17. The launch occurred at 23:27 UTC on June 29 from Site 31/6 at the Baikonur Cosmodrome in Kazakhstan. A Soyuz 2.1a launch vehicle was used to launch the Progress MS-17 spacecraft. The mission is known to NASA as Progress 78P, as Progress MS-17 is the 78th Russian resupply mission to the ISS."

Stunning Image Shows International Space Station Moving Across The Sun

### The Hill

5d5&t=c&data=04|01|alicia.n.brown@nasa.gov|0cdc359b13e94ff4297208d93bb5fb36|7005d45845be48ae8140d43da 96dd17b|0|0|637606475058619986|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6Ik1 haWwiLCJXVCI6Mn0=|1000&sdata=1/S2osU9a3Tg73YBqC7rboeCkcHTDVO+02E+Fi0ulsU=&reserved=0> (6/29, Guzman) "NASA has released a breathtaking composite image that shows the International Space Station (ISS) crossing in front of the sun. The image captured by NASA photographer Joel Kowsky shows the ISS as a small shape with visible solar arrays on both sides with the sun as a glowing, bright orange backdrop."

Spectacular Image Captures International Space Station Crossing In Front Of The Sun During Astronaut Spacewalk

# CBS News

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329&t=c&data=04|01|alicia.n.brown@nasa.gov|0cdc359b13e94ff4297208d93bb5fb36|7005d45845be48ae8140d43da 96dd17b|0|0|637606475058619986|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6Ik1 haWwiLCJXVCI6Mn0=|1000&sdata=UItm5UvS+vILP7MSNk+QEJD//zAUFWb2y+T9CTQzxYY=&reserved=0> (6/29, Lewis) "Astronauts were performing a spacewalk outside of the International Space Station as it passed in front of the sun last week — and a NASA photographer captured the exact moment it happened. The resulting image is breathtaking. A composite image made from seven frames taken by NASA photographer Joel Kowsky shows the silhouette of the ISS last week as it transited the sun at about five miles per second, or about 18,000 miles per hour. The images, which feature the sun as a glowing orange backdrop to the orbiting laboratory, were taken from Nellysford, Virginia, NASA said in a statement Monday."

NASA Shares A Spectacular Image Of The ISS Transiting The Sun

# SlashGear

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98f&t=c&data=04|01|alicia.n.brown@nasa.gov|0cdc359b13e94ff4297208d93bb5fb36|7005d45845be48ae8140d43da9 6dd17b|0|0|637606475058629944|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1h aWwiLCJXVCI6Mn0=|1000&sdata=hckyTkNmgVH2RCHW0Sd5E7c+tAsK6wqZ23wpTbPhhn0=&reserved=0> (6/29, McGlaun) "The International Space Station has been in orbit for many years. The space station has been used as a platform for conducting various scientific research that has resulted in some great science over the years. Currently, the ISS is being serviced by both Russian and American spacecraft with a crew of international astronauts on board."

Northrop Grumman's Cygnus Cargo Ship Departs Space Station To Begin New Mission In Orbit

# SPACE

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8af&t=c&data=04|01|alicia.n.brown@nasa.gov|0cdc359b13e94ff4297208d93bb5fb36|7005d45845be48ae8140d43da9 6dd17b|0|0|637606475058629944|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6lk1h aWwiLCJXVCI6Mn0=|1000&sdata=X2TWX7T93ESrPoa+1clAmiQQqvaB18dPn9gXuLwDUsc=&reserved=0> (6/29, Thompson) "A Northrop Grumman Cygnus cargo spacecraft successfully undocked from the International Space Station Tuesday (June 29) at 12:25 p.m. EDT (1625 GMT), more than four months after it arrived in orbit. The undocking aired live on NASA TV, with the spacecraft separating from the orbital outpost right on time, enabling the craft to begin a secondary mission before its planned fiery demise."

Cygnus Supply Ship Departs Space Station After Four-month Mission

# Spaceflight Now

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6ab&t=c&data=04|01|alicia.n.brown@nasa.gov|0cdc359b13e94ff4297208d93bb5fb36|7005d45845be48ae8140d43da 96dd17b|0|0|637606475058639892|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6Ik1 haWwiLCJXVCI6Mn0=|1000&sdata=z0jHzM6g8+Vxdfe0byN/y15fSN4lqJHTHwprcvrEL70=&reserved=0> (6/29, Clark) "A Cygnus spacecraft owned by Northrop Grumman departed the International Space Station Tuesday, concluding a four-month mission that delivered more than 8,000 pounds of cargo. The automated resupply freighter will deploy five small CubeSats before re-entering the atmosphere and burning up over the Pacific Ocean."

Do You Want To Go To Space?

# Discovery Channel

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07b&t=c&data=04|01|alicia.n.brown@nasa.gov|0cdc359b13e94ff4297208d93bb5fb36|7005d45845be48ae8140d43da 96dd17b|0|0|637606475058639892|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6Ik1 haWwiLCJXVCI6Mn0=|1000&sdata=OPMw6W4kvexCKfwse4t0L67dK1eV7gvKCMr5Alz3DIA=&reserved=0> (6/29) "Discovery's new series, WHO WANTS TO BE AN ASTRONAUT is giving regular people the chance to compete for an official spot aboard a rocket to outer space. The winner will get to live at the International Space Station (ISS) for eight days. We caught up with former NASA astronaut and mechanical engineer, Mike Massimino, to ask him about life aboard the ISS, and tips for aspiring astronauts."

Remembering The Crew Of Soyuz 11, The Only Astronauts To Die In Space

### **Discover Magazine**

e2b&t=c&data=04|01|alicia.n.brown@nasa.gov|0cdc359b13e94ff4297208d93bb5fb36|7005d45845be48ae8140d43da 96dd17b|0|0|637606475058639892|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1 haWwiLCJXVCI6Mn0=|1000&sdata=I8rNs9v+z4QPhHWiCp+IBh3JmA6j0PsgvagQC9yKaQ8=&reserved=0> (6/29, Evans) "A look of troubled uncertainty creased the man's face. Kneeling beside him, another member of the recovery team likewise listened to the Soyuz 11 capsule, which had just landed following a record-breaking 23-day stay at the world's first space station. Moments before, both men were eagerly clamoring to greet the returning cosmonauts — Georgi Dobrovolski, Vladislav Volkov, and Viktor Patsayev — whose fame swept Soviet Russia like a whirlwind in June 1971. But when they knocked on the capsule, they were met with only ominous silence."

## Jeff Bezos Is Soon To Visit Space

## Forbes

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7a0&t=c&data=04|01|alicia.n.brown@nasa.gov|0cdc359b13e94ff4297208d93bb5fb36|7005d45845be48ae8140d43da 96dd17b|0|0|637606475058649846|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1 haWwiLCJXVCI6Mn0=|1000&sdata=lebwrJmHNj7HLPrEPTbWmijq+KJkZnC2DEAqNb+Dh9E=&reserved=0> (6/29, Placido) "Jeff Bezos, one of the world's wealthiest men, is due to (briefly) leave Earth in late July, launched into space by his private spaceflight company Blue Origin. Quite a few earthlings want him to stay up there; more than 138,000 have signed a tongue-in-cheek petition proposing that Bezos be banned from returning to Earth."

### Moon to Mars

China Once Said It Couldn't Put A Potato In Space. Now It's Eyeing Mars

### CNBC

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dd0&t=c&data=04|01|alicia.n.brown@nasa.gov|0cdc359b13e94ff4297208d93bb5fb36|7005d45845be48ae8140d43da 96dd17b|0|0|637606475058649846|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6Ik1 haWwiLCJXVCI6Mn0=|1000&sdata=LCR4ouQnupQrhcyI6utB/rkkiTmCMet9fB4+GcFT1vg=&reserved=0> (6/30, Kharpal) "In 1957, the Soviet Union launched Sputnik, the first artificial satellite, which sparked a space race with the U.S. China, however, was nowhere to be seen. While the U.S. and the Soviet Union were battling for superiority in this new domain, Mao Zedong, one of the founders of the Chinese Communist Party (CCP), reportedly said: 'China cannot even put a potato in space.'"

A Lunar Farside Telescope Could Detect Exoplanets Through Their Magnetospheres

### Universe Today

<a href="https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021063002nasa&r=email-dc4f&l=019-">https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021063002nasa&r=email-dc4f&l=019-</a>

 haWwiLCJXVCI6Mn0=|1000&sdata=Dfr6nk5LPk6YV4NcV0760Z+ZCHDw7bQy0FMuA45jGvc=&reserved=0> (6/29, Koberlein) "It's difficult to do radio astronomy on Earth, and it's getting harder every day. Our everyday reliance on radio technology means that radio interference is a constant challenge, even in remote areas. And for some wavelengths even the Earth's atmosphere is a problem, absorbing or scattering radio light so that Earth-based telescopes can't observe these wavelengths well. ... NASA is currently studying how we might build a radio telescope on the Moon. If it is built in the coming decades, we might finally see the aurora glow of a distant Earth."

NASA May Have Finally Solved A Mars Methane Mystery

## **CNET** News

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682&t=c&data=04|01|alicia.n.brown@nasa.gov|0cdc359b13e94ff4297208d93bb5fb36|7005d45845be48ae8140d43da 96dd17b|0|0|637606475058659812|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1 haWwiLCJXVCI6Mn0=|1000&sdata=pozz8sQmL4VxRkILyuUK/6rx2qJEoLCev//aez2RvTo=&reserved=0> (6/29, Kooser) "Methane. On Earth, it's the stuff of cow farts and burps. On Mars, it's the stuff of mysteries. Scientists have been puzzling over methane readings from Mars, and NASA may be a step closer to figuring out what's going on with the gas on the red planet. It turns out the time of day has a big impact on methane detections."

NASA's Moon-bound Mannequin Astronaut Named After Hero Of Troubled Apollo 13 Mission

## CNN

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56e&t=c&data=04|01|alicia.n.brown@nasa.gov|0cdc359b13e94ff4297208d93bb5fb36|7005d45845be48ae8140d43da 96dd17b|0|0|637606475058669767|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6Ik1 haWwiLCJXVCI6Mn0=|1000&sdata=VAod2pgErHJHa0UnCpyaFc4ry3cuT3YO7b56IA178tY=&reserved=0> (6/29, Rogers) "After a weeks-long challenge to name NASA's moon-bound mannequin (or 'Moonikin' as NASA has dubbed it), the people have chosen: Campos is expected to take off on the uncrewed Artemis I moon mission slated for November. The name is a dedication to the late Arturo Campos, a Mexican American electrical engineer at NASA who was instrumental in bringing the imperiled Apollo 13 crew safely back home in 1970, according to NASA."

Dust Problems Draining Power From NASA's InSight Mars Lander

# SPACE

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3d8&t=c&data=04|01|alicia.n.brown@nasa.gov|0cdc359b13e94ff4297208d93bb5fb36|7005d45845be48ae8140d43da 96dd17b|0|0|637606475058669767|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6lk1 haWwiLCJXVCI6Mn0=|1000&sdata=QIF8d5PEiKd08YTEEqgP5FLMvqVssf6AFKDG4oGE62Y=&reserved=0> (6/29, Howell) "Martian dust accumulating on the panels of NASA's InSight lander could force the Red Planet mission to end its work within the next 10 months, its principal investigator warned during a recent update. To save power and preserve InSight's essential items like heaters in the cold Martian environment, mission managers have already turned off several instruments on the lander. NASA has also tried a new way of encouraging the wind to blow off sand, but with limited success."

NASA's Mars Helicopter Ingenuity Could Keep Flying The Martian Skies For Months

# SPACE

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2d4&t=c&data=04|01|alicia.n.brown@nasa.gov|0cdc359b13e94ff4297208d93bb5fb36|7005d45845be48ae8140d43da 96dd17b|0|0|637606475058679725|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6Ik1 haWwiLCJXVCI6Mn0=|1000&sdata=UA130cvp2p3NctmvGFac5ixqWiHNGiLEW2QUWhoHhbs=&reserved=0> (6/29, Wall) "The future of aerial Mars exploration looks bright. NASA's Mars helicopter Ingenuity, which landed inside Mars' Jezero Crater with the agency's Perseverance rover in February, has now completed eight Red Planet flights. That's three more than the maximum targeted for the 4-lb. (1.8 kilograms) chopper's original technology-demonstration mission — and Ingenuity isn't done yet."

NASA Reveals The Public's Favorite Dummy Name: Commander Moonikin

# SlashGear

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afb&t=c&data=04|01|alicia.n.brown@nasa.gov|0cdc359b13e94ff4297208d93bb5fb36|7005d45845be48ae8140d43da9 6dd17b|0|0|637606475058679725|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6lk1h aWwiLCJXVCI6Mn0=|1000&sdata=q1BrvvtqOqtIIVKOSv8IKZEiAVXbUQ/YWByk0oBm7qM=&reserved=0> (6/29, Roston) "A few weeks ago, NASA asked the public to vote on their favorite name for the manikin (a type of humansized dummy) that'll be used as part of the Artemis I lunar mission. Space fans spoke and now NASA is back with the final name for its latest manikin: Commander Moonikin Campos. Yes, that's right. Cmdr. Moonikin will be fitted with its own spacesuit and launched all by itself into space."

## Solar System and Beyond

'Pac-Man' In Space: Black Holes Gobble Up Neutron Stars In First Evidence Of A Rare Celestial Event

## CNN

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715&t=c&data=04|01|alicia.n.brown@nasa.gov|0cdc359b13e94ff4297208d93bb5fb36|7005d45845be48ae8140d43da 96dd17b|0|0|637606475058689681|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiV2luMzIiLCJBTiI6lk1 haWwiLCJXVCI6Mn0=|1000&sdata=IOKjmF60/LqY2TvOhLJDOcbryHOTqrFDhUTQi09C5q4=&reserved=0> (6/29, Strickland) "Nearly a billion years ago, two of the most extreme objects in the universe came together in a death spiral, and one of them didn't make it out alive. For the first time ever, astronomers have detected two separate instances of black holes swallowing dense neutron stars – and it played out like Pac-Man in space. ... 'We've now seen the first examples of black holes merging with neutron stars, so we know that they're out there,' said Maya Fishbach, a NASA Einstein Postdoctoral Fellow and LIGO Scientific Collaboration member."

Mystery Explosion 1,000 Years Ago May Be A Rare, Third Type Of Supernova

### LiveScience

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6c6&t=c&data=04|01|alicia.n.brown@nasa.gov|0cdc359b13e94ff4297208d93bb5fb36|7005d45845be48ae8140d43da 96dd17b|0|0|637606475058689681|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6lk1 haWwiLCJXVCI6Mn0=|1000&sdata=gvvEzpcshufsS1Am7S7j7LN64GY8ygS54/GH6lUtLLc=&reserved=0> (6/29, Specktor) "On July 4, 1054 — about 700 years before the United States popped its first celebratory firework — a mysterious light exploded in the sky. The blast was visible around the world, lingering in the daytime sky for nearly a month, and visible at night for nearly two years, according to NASA. At the time, Chinese astronomers labeled the mysterious blaze a 'guest star' — a temporary heavenly object that seemingly appeared from nothing, then vanished to nothing."

## USA Today

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c68&t=c&data=04|01|alicia.n.brown@nasa.gov|0cdc359b13e94ff4297208d93bb5fb36|7005d45845be48ae8140d43da 96dd17b|0|0|637606475058699639|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6lk1 haWwiLCJXVCI6Mn0=|1000&sdata=6FQp3JPRQ8J7JrOu3DEINckKsGs3nCQJiXHGZUzpwt0=&reserved=0> (6/29, Rice) "This is a big one. A giant comet – which scientists say is arguably the largest comet discovered in modern times – is on its way toward the sun and will make its closest approach to Earth in 2031. ... The comet probably came from the Oort Cloud, which is believed to be a giant spherical shell that surrounds the solar system, according to NASA. Most long-period comets such as this one come from the Oort Cloud, NASA said."

Astronomers Believe There May Be More Earth-sized Planets Than They Thought

### SlashGear

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ea2&t=c&data=04|01|alicia.n.brown@nasa.gov|0cdc359b13e94ff4297208d93bb5fb36|7005d45845be48ae8140d43da 96dd17b|0|0|637606475058699639|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiV2luMzIiLCJBTiI6lk1 haWwiLCJXVCI6Mn0=|1000&sdata=Zj9A3r88roVmtnPlioDRjhj6Ydis+0PktzW1wXR1cqg=&reserved=0> (6/29, McGlaun) "Some astronomers believe that exoplanet searches may be missing nearly half of all Earth-sized planets orbiting other stars. The findings by astronomers suggest that Earth-sized planets could be undiscovered in binary star systems hidden by the glare of the parent stars. Scientists note that roughly half of all stars are binary systems meaning they could be overlooking vast numbers of Earth-sized planets. Astronomers on the project used twin telescopes from the Gemini Observatory to determine that many planet-hosting stars identified by NASA's TESS exoplanet mission are actually binary pairs with planets orbiting one of the stars in the pair."

Earth-Like Planets May Be Lurking In The Glare Of Binary Star Systems

### New Atlas

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2b5&t=c&data=04|01|alicia.n.brown@nasa.gov|0cdc359b13e94ff4297208d93bb5fb36|7005d45845be48ae8140d43da 96dd17b|0|0|637606475058709593|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiV2luMzliLCJBTil6lk1 haWwiLCJXVCI6Mn0=|1000&sdata=94oK0v9vKs5BmXuUA8hWdKwl2dsYVDYTPZoKcKfjaz0=&reserved=0> (6/29, Wood) "Double star systems may be concealing a population of potentially habitable Earth-sized planets in their combined glare, according to the results of a newly published study. Roughly half of all stars are thought to exist in binary systems, in which two massive stellar bodies orbit around a common center of mass. ... The scientists behind the study sought to discover how many stars in a sample of data collected by NASA's TESS exoplanet hunting mission were actually part of a double star system. They also hoped to shed light on whether it was likely that the intense light from the stars was capable of obscuring the presence of hitherto unknown Earth-like worlds."

Scientists Say There's No Life On Venus - But Jupiter Has Potential

### **CBS** News

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1d3&t=c&data=04|01|alicia.n.brown@nasa.gov|0cdc359b13e94ff4297208d93bb5fb36|7005d45845be48ae8140d43da 96dd17b|0|0|637606475058709593|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1 haWwiLCJXVCI6Mn0=|1000&sdata=WwBQZCP4252TSjXuCBTFm/Rwqeoq9PXqQGunf5v6CUY=&reserved=0> (6/29, Lewis) "It turns out the clouds of Venus aren't made of the right stuff to support life — so now, scientists are turning to Jupiter instead. ... The findings come nearly a month after NASA announced two new discovery missions to the inferno-like planet, scheduled to launch between 2028 and 2030. One of those missions could help determine if Venus could have supported life billions of years ago."

These Scientists Spent Decades Pushing NASA To Go Back To Venus. Now They're On A Hot Streak.

### Popular Science

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9ed&t=c&data=04|01|alicia.n.brown@nasa.gov|0cdc359b13e94ff4297208d93bb5fb36|7005d45845be48ae8140d43da 96dd17b|0|0|637606475058719549|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6lk1 haWwiLCJXVCI6Mn0=|1000&sdata=6mubBKOTmQPKnes6KojR6Hk2mgQZPt2i7Ddy2mIP75o=&reserved=0> (6/29) "Jörn Helbert was standing outside a stranger's apartment in the north end of Berlin with a bouquet of yellow roses. It was June 2020, and the woman behind the door was in mandatory quarantine. ... Helbert, Dyar, and a team of colleagues were in the last stages of pitching NASA on a mission called VERITAS, which would send a satellite to map Venus at higher resolution than ever before."

Venus Can't Sustain Life In The Clouds, But Jupiter Has Potential

### **CNET** News

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3bc&t=c&data=04|01|alicia.n.brown@nasa.gov|0cdc359b13e94ff4297208d93bb5fb36|7005d45845be48ae8140d43da 96dd17b|0|0|637606475058719549|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiV2luMzliLCJBTil6lk1 haWwiLCJXVCI6Mn0=|1000&sdata=YizXBWsfSiYZwObzXYWbXqc+8YWrBSYg+Km7FvL87mc=&reserved=0> (6/29, Ryan) "Venus clouds have captivated Earthlings for decades. They form a dazzling mirror that obscures the planet's surface and, in the 1950s, one Israeli scholar even speculated the clouds may hide a world teeming with insect life capable of enduring the extreme heat. ... The researchers were quick to point out that their find wasn't a definitive sign of life in the clouds of Venus, but scientists and the public were buzzing all the same. It inspired Jim Bridenstine, NASA's administrator at the time, to declare it was 'time to prioritize Venus.'"

### Space Tech

Stratodynamics Completes Turbulence-Detection Sensor Flights

### Aviation Week

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c49&t=c&data=04|01|alicia.n.brown@nasa.gov|0cdc359b13e94ff4297208d93bb5fb36|7005d45845be48ae8140d43da 96dd17b|0|0|637606475058729507|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6Ik1 haWwiLCJXVCI6Mn0=|1000&sdata=Gl4jcAvL9prqmQDHqH68h14MsxCMjRkjKqQw/iqpKHU=&reserved=0> (6/29) "Stratodynamics and UAVOS have completed a series of stratospheric flights with the HiDRON autonomous glider from Spaceport America in New Mexico. The flights tested sensors for the onboard detection of clear air turbulence. The early June flight campaign, supported by the NASA's Flight Opportunities..."

# Various

Washington Goes Crazy With Talk Of UFOs, Alien Life

Washington Times

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e5c&t=c&data=04|01|alicia.n.brown@nasa.gov|0cdc359b13e94ff4297208d93bb5fb36|7005d45845be48ae8140d43da 96dd17b|0|0|637606475058729507|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiV2luMzliLCJBTil6lk1 haWwiLCJXVCI6Mn0=|1000&sdata=2QQdaCrZ3oVPn0rFWHBgdpUdAduTJYBUSJ31GgOE764=&reserved=0> (6/29, Curl) "ANALYSIS/OPINION: Every summer in Washington, D.C., the dog days arrive. Temperatures soar into the 100s in the nation's capital, part of which was literally built in a swamp. ... NASA Administrator Bill Nelson, a former astronaut and U.S. senator, said Monday that he doesn't think we 'are alone' here on Earth."

NASA Administrator Bill Nelson Believes We Are Not Alone In The Universe

### Fox News

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85d&t=c&data=04|01|alicia.n.brown@nasa.gov|0cdc359b13e94ff4297208d93bb5fb36|7005d45845be48ae8140d43da 96dd17b|0|0|637606475058739463|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6Ik1 haWwiLCJXVCI6Mn0=|1000&sdata=SG2P8i7yZKh9vUZR6h7BRS+x7joGzJIbz2EWTbyWka4=&reserved=0> (6/28) "Take them to our leader. NASA Administrator Bill Nelson says he doesn't think we 'are alone' after reading the US intelligence community's recent report on unidentified aerial phenomena (UAP), adding that the launch of a new telescope later this year could find more planets potentially home to intelligent alien life."

NASA Ranks As The Best Place To Work In Government For Ninth Year

## NextGov

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14e&t=c&data=04|01|alicia.n.brown@nasa.gov|0cdc359b13e94ff4297208d93bb5fb36|7005d45845be48ae8140d43da 96dd17b|0|0|637606475058739463|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6lk1 haWwiLCJXVCI6Mn0=|1000&sdata=or1R4ebuJ/hRrIZQ0OM5Vf6APxPShsjOFmMXUEh3L+0=&reserved=0> (6/29, Bublé) "For the ninth year in a row, NASA came out as the best place to work in the federal government among large agencies in a nonprofit's annual rankings. On Tuesday, the nonprofit Partnership for Public Service and global management consulting firm Boston Consulting Group released the 2020 Best Places to Work in the Federal Government rankings, based largely on responses to the Office of Personnel Management's annual Federal Employee Viewpoint Survey that was administered from Sept. 14, 2020, to Nov. 5, 2020. The Partnership and consultancy incorporated additional survey data from 10 agencies (including the Veterans Affairs Department and Peace Corps) as well as responses from intelligence agency employees."

Agencies Score High Marks From Employees On Handling Of Pandemic, But Leadership Issues Persist

### Federal News Network

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c51&t=c&data=04|01|alicia.n.brown@nasa.gov|0cdc359b13e94ff4297208d93bb5fb36|7005d45845be48ae8140d43da 96dd17b|0|0|637606475058749419|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6Ik1 haWwiLCJXVCI6Mn0=|1000&sdata=z8aerMx/Ja1Ai6fqqdLBp76J3M5ZUc1Q2nwgW92gG6Q=&reserved=0> (6/29, Moges) "Federal agencies received overwhelmingly positive feedback on their handling of the pandemic in 2020, but leaders still have much work to do to earn their employee's confidence. That's according to this year's Best Places to Work in the Federal Government rankings. ... In maybe the least surprising result, NASA continued its domination among large agencies, ranking highest for the ninth year in a row with a score of 86.6 points — a 5.1 point increase from 2019. Rounding out the rest of the top five is the Intelligence Community with 76.7 points, followed by the Transportation Department (76.1), the Department of Health and Human Services (75.3) and the Commerce

# Department (74.9)."

## DC Circ. Relaunches Ex-NASA Worker's Disability Bias Case

### Law360

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448&t=c&data=04|01|alicia.n.brown@nasa.gov|0cdc359b13e94ff4297208d93bb5fb36|7005d45845be48ae8140d43da 96dd17b|0|0|637606475058749419|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6Ik1 haWwiLCJXVCI6Mn0=|1000&sdata=g3m+Dk5fPEFLtiCFgSnR6+TGGzJ8Sa7hGpkut85O65w=&reserved=0> (6/29) "The D.C. Circuit revived a disability bias case from a former NASA employee on Tuesday, finding he wasn't required to forfeit a \$35,000 U.S. Equal Employment Opportunity Commission win in order..."

Colombia Catches Hacker Wanted In The U.S. For 'Gozi' Virus

## Washington Post

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23b&t=c&data=04|01|alicia.n.brown@nasa.gov|0cdc359b13e94ff4297208d93bb5fb36|7005d45845be48ae8140d43da 96dd17b|0|0|637606475058759375|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1 haWwiLCJXVCI6Mn0=|1000&sdata=CzgHj8MFrJhQCvqsaUkilc1gdWUfVhsVphXsIKdt5A4=&reserved=0> (6/29) "Colombian officials say they have arrested a Romanian hacker who is wanted in the U.S. for distributing a virus that infected more than a million computers from 2007 to 2012. ... Victims included individuals, corporations and also computers belonging to NASA."

Federal Agencies Need Stricter Limits On Facial Recognition To Protect Privacy, Says Government Watchdog

### Washington Post

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1f9&t=c&data=04|01|alicia.n.brown@nasa.gov|0cdc359b13e94ff4297208d93bb5fb36|7005d45845be48ae8140d43da9 6dd17b|0|0|637606475058759375|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6lk1h aWwiLCJXVCI6Mn0=|1000&sdata=5KaP8QxZCsvykil6f5qIGFwXUwIG9KOorwuPq2uThS0=&reserved=0> (6/29) "The use of facial recognition technology is widespread throughout the federal government, and many agencies do not even know which systems they are using. That needs to change, the federal government's main watchdog said in a new report. Twenty agencies — including departments not generally associated with law enforcement, such as the U.S. Postal Service, the Fish and Wildlife Service and NASA — have used the tech, according to the Government Accountability Office."

Raymond Soto: The Awe And Wonder Of The Kennedy Space Center

### USA Today

<a href="https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021063002nasa&r=email-dc4f&l=02f-">https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021063002nasa&r=email-dc4f&l=02f-</a>

593&t=c&data=04|01|alicia.n.brown@nasa.gov|0cdc359b13e94ff4297208d93bb5fb36|7005d45845be48ae8140d43da 96dd17b|0|0|637606475058769327|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6Ik1 haWwiLCJXVCI6Mn0=|1000&sdata=fJ/osl4QCPCzzRPIxatXWjKcMx59UZv+7/SF1wmBnp8=&reserved=0> (6/29) "Editor's Note: The USA TODAY NETWORK is auctioning its inaugural nonfungible token (NFT) inspired by the first newspaper delivered to space in 1971. Apollo 14 astronaut Alan Shepard, the first American in space, transported a special edition of TODAY, now FLORIDA TODAY and part of the USA TODAY NETWORK, to the moon and back. In celebration of the 50th anniversary of Shepard's visit, select stories from that edition are being republished, and visual journalist Pat Shannahan assembled more than 300 photographs, illustrations and front pages from five decades of space coverage to recreate the cover as an interactive mosaic."

Evidence Suggests Aliens Might Be Surveilling Our Troops. Should We Be Worried?

# Daily Caller

<a href="https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021063002nasa&r=email-dc4f&l=030-">https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021063002nasa&r=email-dc4f&l=030-</a>

c3d&t=c&data=04|01|alicia.n.brown@nasa.gov|0cdc359b13e94ff4297208d93bb5fb36|7005d45845be48ae8140d43da 96dd17b|0|0|637606475058769327|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6lk1 haWwiLCJXVCI6Mn0=|1000&sdata=6HtdKqi99LVOhV4o5hqMXOkkQoVK0nfsDiNYZUMWLTo=&reserved=0> (6/29, Hall) "The Office of the Director of National Intelligence released a report Friday on unidentified flying objects but didn't exclude the possibility that aliens exist. Experts and commentators have called for more research into this topic to solve the questions the public has on the unidentified aerial phenomena. ... Just because UAPs are unidentified doesn't mean they're aliens, Ravi Kopparapu, a research scientist at NASA, told the Daily Caller News Foundation."

NASA Is Using Data Science To Fill Its Data Science Skills Gap

## ZDNet

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a17&t=c&data=04|01|alicia.n.brown@nasa.gov|0cdc359b13e94ff4297208d93bb5fb36|7005d45845be48ae8140d43da 96dd17b|0|0|637606475058779294|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6Ik1 haWwiLCJXVCI6Mn0=|1000&sdata=egTcwJw9ZA/O8fNRW0Bw+iPecZMZZ1mCtaOIUSw/NFw=&reserved=0> (6/29, Samuels) "All the evidence suggests it's tough to get hold of talented data scientists – and that's even true at NASA, says David Meza, acting branch chief of people analytics and senior data scientist at the US space agency. So what does a skills gap look like at NASA? Meza says his team is still taking a 'deep dive' into the organisation's data science talent demands – but clear patterns are emerging, particularly in terms of identifying capability that already exists within the organisation."

# Other

After Delayed SpaceX Launch, Musk Says Reform Needed For Humanity To 'Become A Spacefaring Civilization'

# Fox Business

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67f&t=c&data=04|01|alicia.n.brown@nasa.gov|0cdc359b13e94ff4297208d93bb5fb36|7005d45845be48ae8140d43da9 6dd17b|0|0|637606475058779294|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6lk1h aWwiLCJXVCI6Mn0=|1000&sdata=WRE7a2nU1RAlfVzuT85CACfCpR3oRZUVf/ytpBXYask=&reserved=0> (6/29, Best) "SpaceX was seconds away from sending dozens of satellites into orbit aboard its Falcon 9 rocket on Tuesday when the launch was called off because an airplane entered its launch zone. The launch's 24-hour delay earned the ire of SpaceX CEO Elon Musk, who tweeted that the rocket's 'keep out zone' is 'unreasonably gigantic.'"

SpaceX Scrubs Transporter 2 Launch Attempt Due To Range Violation

# NASA Space Flight

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 haWwiLCJXVCI6Mn0=|1000&sdata=ZyeX33QffW8z/SUNkWNZFgRCttzZWRyqxHIa198BPjY=&reserved=0> (6/29, Lentz) "SpaceX was preparing to launch the Transporter 2 mission on Tuesday, June 29 at 14:56 EDT (18:56 UTC) from Space Launch Complex 40 (SLC-40) at Cape Canaveral Space Force Station. However, the countdown was held at T-30 seconds due to an aircraft within the range's restricted airspace, setting up a next attempt no earlier than Wednesday, June 30."

Falcon 9 Launch Scrub Highlights Airspace Integration Problems

## Space News

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112&t=c&data=04|01|alicia.n.brown@nasa.gov|0cdc359b13e94ff4297208d93bb5fb36|7005d45845be48ae8140d43da 96dd17b|0|0|637606475058789245|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6lk1 haWwiLCJXVCI6Mn0=|1000&sdata=bo94BH+X6wKupeSWIvp5NfOkirBCA9KLbSIrhP17XcA=&reserved=0> (6/29, Foust) "A SpaceX launch scrubbed in the final seconds of its countdown when an aircraft violated restricted airspace June 29 has aligned both the launch industry and the airline industry in their criticism of the Federal Aviation Administration. SpaceX was preparing to launch a Falcon 9 from Cape Canaveral Space Force Station in Florida at 2:56 p.m. Eastern. The Transporter-2 mission is carrying 88 satellites on SpaceX's second dedicated smallsat rideshare missions, supporting customers ranging from NASA and the Pentagon's Space Development Agency to several companies developing remote sensing and communications constellations."

Rarely Heard Sonic Booms Expected Tuesday As SpaceX Launches, Lands Falcon 9 Rocket

### USA Today

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e41&t=c&data=04|01|alicia.n.brown@nasa.gov|0cdc359b13e94ff4297208d93bb5fb36|7005d45845be48ae8140d43da 96dd17b|0|0|637606475058799202|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6Ik1 haWwiLCJXVCI6Mn0=|1000&sdata=tPxAtE4YRTPslxL3JGVC95IR+ssxcGntzdIXW9wqIX8=&reserved=0> (6/29, Kelly) "A rarely heard cannonade of sonic booms will reverberate across the Space Coast on Tuesday, the result of a SpaceX Falcon 9 rocket launch and subsequent landing at Cape Canaveral Space Force Station. After a 2:56 p.m. liftoff from Launch Complex 40, the rocket's 162-foot booster will separate from the payload-hauling second stage, flip around, and begin an autonomous descent toward nearby Landing Zone 1. Though it will have flown to an altitude hundreds of thousands of feet above Earth's surface, the booster will touch down just 5 1/2 miles from where it started."

Starlink Will Be Here In August, Elon Musk Says

### Gizmodo

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35c&t=c&data=04|01|alicia.n.brown@nasa.gov|0cdc359b13e94ff4297208d93bb5fb36|7005d45845be48ae8140d43da 96dd17b|0|0|637606475058799202|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiV2luMzliLCJBTil6lk1 haWwiLCJXVCI6Mn0=|1000&sdata=8A50mOXDsWSVdWp+G32XaK38dUpmzWQu8TpISAi0jxc=&reserved=0> (6/29, Provenzano) "The low-orbit satellite broadband service Starlink will be available for global coverage beginning in August, Elon Musk said on Tuesday, with the exception of the north and south poles. During a virtual talk at the Mobile World Congress 2021, Musk announced that Starlink's high-speed broadband service is 'operational now in about 12 countries, and more are being added every month.'"

Elon Musk Counts On 500,000 Starlink Users Within The Next Year

# The Verge

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aeb&t=c&data=04|01|alicia.n.brown@nasa.gov|0cdc359b13e94ff4297208d93bb5fb36|7005d45845be48ae8140d43da 96dd17b|0|0|637606475058809157|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiV2luMzliLCJBTil6lk1 haWwiLCJXVCI6Mn0=|1000&sdata=iEv1yo1xhgNDrRs/5VdXcQOmCqrDZ0ys96r4MfDXMPs=&reserved=0> (6/29, Roulette) "SpaceX's satellite internet network, Starlink, should have roughly 500,000 users within the next 12 months, Elon Musk said at the Mobile World Congress (MWC) conference on Tuesday. SpaceX's current goal, Musk said, is to beam broadband internet to most of the planet by August. The internet network, in the midst of an open beta phase, has launched more than 1,700 satellites to low-Earth orbit since 2018 and recently surpassed a 'strategically significant' benchmark of 69,420 active users, Musk told MWC."

Low Supply Drove U.S. Home Prices Higher In April

## Washington Post

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7f4&t=c&data=04|01|alicia.n.brown@nasa.gov|0cdc359b13e94ff4297208d93bb5fb36|7005d45845be48ae8140d43da9 6dd17b|0|0|637606475058809157|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6lk1h aWwiLCJXVCI6Mn0=|1000&sdata=XPdu2VfjuFxqmQyPveWgRUGUzEWCmNdGqkoFSVpEf4o=&reserved=0> (6/29) "U.S. home prices soared in April at the fastest pace since 2005 as potential buyers bid up prices on a limited supply of available properties. ... Elon Musk's satellite network Starlink is on track to beam broadband Internet everywhere in the world except polar regions by August, Musk said on Tuesday. Space Exploration Technologies has launched more than 1,500 satellites so far and has Starlink operations in about a dozen countries, Musk said at the Mobile World Congress conference."

SpaceX Had To Reschedule Its Rocket Launch Because A Helicopter Entered The 'Keep Out Zone' With Seconds To Go — And Elon Musk Isn't Happy About It

# Insider

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0a4&t=c&data=04|01|alicia.n.brown@nasa.gov|0cdc359b13e94ff4297208d93bb5fb36|7005d45845be48ae8140d43da 96dd17b|0|0|637606475058809157|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6Ik1 haWwiLCJXVCI6Mn0=|1000&sdata=JfbTBbWmzjJ4H78Gv4UzzeUzRzQKEbDzCCtvi7Mg+5Q=&reserved=0> (6/29, Canales) "Tesla CEO Elon Musk said a SpaceX launch was called off because an aircraft entered the so-called keep out zone. Musk, who also is CEO of SpaceX, tweeted Tuesday that the 'keep out zone' is 'unreasonably gigantic,' and since an aircraft entered it, the company was not able to launch its own."

Elon Musk Calls For Reform After SpaceX Flight Canceled Due To Air Space Crowding

# Newsweek

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95e&t=c&data=04|01|alicia.n.brown@nasa.gov|0cdc359b13e94ff4297208d93bb5fb36|7005d45845be48ae8140d43da 96dd17b|0|0|637606475058819113|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6lk1 haWwiLCJXVCI6Mn0=|1000&sdata=fR50F+ojy9wLdnqExhX+h8XE+R59IO7rLe84kRE2Heo=&reserved=0> (6/29, Fung) "SpaceX founder Elon Musk is calling for systematic reform after Tuesday's Space X flight was canceled due to a range issue with another airplane in the launch zone. 'Unfortunately, launch is called off for today, as an aircraft entered the 'keep out zone,' which is unreasonably gigantic,' Musk tweeted Tuesday afternoon." Elon Musk Calls Rocket Launch Regulations 'Broken' After Aircraft Delays SpaceX Launch

# CNBC

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222&t=c&data=04|01|alicia.n.brown@nasa.gov|0cdc359b13e94ff4297208d93bb5fb36|7005d45845be48ae8140d43da 96dd17b|0|0|637606475058819113|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6Ik1 haWwiLCJXVCI6Mn0=|1000&sdata=O05vGyQuzOkjIPlygsCA3ejXGaNXj6cp+XDYTHD4I3s=&reserved=0> (6/29, Sheetz) "SpaceX was seconds away from launching its 20th mission of this year Tuesday when the countdown was halted due to an aircraft entering the launch range, delaying the mission by at least a day. Elon Musk took to Twitter to voice his frustration about the delay, reiterating prior criticisms he has made about regulations around the business of launching rockets."

Elon Musk Says Starlink Has 2 Major Telecommunications Partners

## Fox Business

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92f&t=c&data=04|01|alicia.n.brown@nasa.gov|0cdc359b13e94ff4297208d93bb5fb36|7005d45845be48ae8140d43da9 6dd17b|0|0|637606475058829071|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6lk1h aWwiLCJXVCI6Mn0=|1000&sdata=NcQDeSqWNQdFK0mZfAIPwENQfP+2fy1IcLuvZ5Kd5Bc=&reserved=0> (6/29, Manfredi) "SpaceX's satellite internet service, Starlink, has forged two 'quite significant' partnerships with major telecommunications companies, according to CEO Elon Musk. 'We have two quite significant partnerships with major country [telecommunications companies], that I'd like to be able to announce now but obviously we defer it to our partners to make any announcement,' Musk said during a virtual keynote at the Mobile World Congress trade show in Barcelona, Spain, on Tuesday."

Elon Musk Says SpaceX Is Losing Money On Its Starlink Terminals But Has Found A Way To Cut Costs With Updated Versions

### Insider

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efa&t=c&data=04|01|alicia.n.brown@nasa.gov|0cdc359b13e94ff4297208d93bb5fb36|7005d45845be48ae8140d43da9 6dd17b|0|0|637606475058829071|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6lk1h aWwiLCJXVCI6Mn0=|1000&sdata=fvp6uzIqOkHLn2wgi0fxbFI0212TSmXZOsX3gYJf07E=&reserved=0> (6/29) "Elon Musk said Starlink will build new satellite terminals that can help the company save money. Terminals currently cost \$1,000 for each, he said. They're sold to customers for \$500."

Elon Musk Says Starlink Will Be Available Worldwide In August

### **CNET** News

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f75&t=c&data=04|01|alicia.n.brown@nasa.gov|0cdc359b13e94ff4297208d93bb5fb36|7005d45845be48ae8140d43da9 6dd17b|0|0|637606475058839026|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6lk1h aWwiLCJXVCI6Mn0=|1000&sdata=ytDIGpfKOCLtd6Ho1u2pX+AwsPVEGoYRPmh7As2yQ28=&reserved=0> (6/29, Reardon) "Elon Musk's satellite broadband service, Starlink, will be available worldwide except the North and South Poles starting in August, the billionaire entrepreneur said Tuesday during a talk at the virtual Mobile World Congress 2021. Starlink is 'operational now in about 12 countries, and more are being added every month,' Musk said."

## SPACE

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d4a&t=c&data=04|01|alicia.n.brown@nasa.gov|0cdc359b13e94ff4297208d93bb5fb36|7005d45845be48ae8140d43da 96dd17b|0|0|637606475058839026|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiV2luMzIiLCJBTil6lk1 haWwiLCJXVCI6Mn0=|1000&sdata=rd++87xAYjCPKJ3cExYiHeDgx2gxi1dOJ7TlibpUYs0=&reserved=0> (6/29, Malik) "SpaceX postponed the launch of dozens of satellites just seconds before liftoff on Tuesday (June 29) when a wayward plane crept inside the mission's safety zone. A used Falcon 9 rocket was just 11 seconds away from launching 88 small satellites into orbit at 2:56 p.m. EDT (1856 GMT) from Space Launch Complex 40 at Cape Canaveral Space Force Station in Florida when SpaceX called a hold in the countdown. A few minutes later, SpaceX production supervisor Andy Tran said the launch was scrubbed for the day."

SpaceX Transporter-2 Launch Today Scrubbed And Elon Musk Isn't Happy

## SlashGear

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722&t=c&data=04|01|alicia.n.brown@nasa.gov|0cdc359b13e94ff4297208d93bb5fb36|7005d45845be48ae8140d43da 96dd17b|0|0|637606475058848987|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1 haWwiLCJXVCI6Mn0=|1000&sdata=4+y/RdivwxshN3Xga49r0x6JYuWqMgzaSIGxIeO3kqA=&reserved=0> (6/29, Davies) "SpaceX's Transporter-2 launch has been called off at the last moment, with Elon Musk blaming an intrusion into the so-called 'keep out zone' around the site. The company had planned to launch its second dedicated SmallSat Rideshare Program mission from Cape Canaveral Space Force Station in Florida, today."

Elon Musk Touts SpaceX Surging Internet Growth, But Still Says Goal Is To Avoid Bankruptcy

### **CNN Business**

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72a&t=c&data=04|01|alicia.n.brown@nasa.gov|0cdc359b13e94ff4297208d93bb5fb36|7005d45845be48ae8140d43da 96dd17b|0|0|637606475058848987|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6lk1 haWwiLCJXVCI6Mn0=|1000&sdata=65fR2Mm1SObGjJLrLUXOhYKv97yq/G/zS10Svf3+sV8=&reserved=0> (6/29, Wattles) "SpaceX has put more than 1,500 internet-beaming satellites into orbit, signed up more than 69,000 customers, installed ground stations in 12 countries and has plans to expand its one-of-a-kind network's coverage all over the world — except the North and South pole — by next month. Still, SpaceX CEO Elon Musk said Tuesday, not running out of money is top of mind."

SpaceX Scrubs Transporter-2 Launch Due To Range Issue [Updated]

### Ars Technica

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b99&t=c&data=04|01|alicia.n.brown@nasa.gov|0cdc359b13e94ff4297208d93bb5fb36|7005d45845be48ae8140d43da 96dd17b|0|0|637606475058858937|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiV2luMzIiLCJBTil6lk1 haWwiLCJXVCI6Mn0=|1000&sdata=Mnm0ZEj2wRY6tao6J4xnOo79gvJIIj26C81B8Clt0Dg=&reserved=0> (6/29, Berger) "3pm ET Tuesday update: The countdown clock got to T-11 seconds on Tuesday afternoon before SpaceX called a hold to the launch of its Transporter-2 rideshare mission. The scrub was necessitated by a range issue caused by an airplane in the launch zone. The company will now turn around the vehicle for another launch attempt on Wednesday afternoon."

# Reuters

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04c&t=c&data=04|01|alicia.n.brown@nasa.gov|0cdc359b13e94ff4297208d93bb5fb36|7005d45845be48ae8140d43da 96dd17b|0|0|637606475058858937|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6lk1 haWwiLCJXVCI6Mn0=|1000&sdata=eea3A0QewQRWV7wi89GHZotSCfoduFoevLj9KGta4gU=&reserved=0> (6/29, Mukherjee, Laudette) "Billionaire entrepreneur Elon Musk said on Tuesday that his Starlink satellite internet venture was growing quickly as he forecast total investment costs in the business at between \$20 billion and \$30 billion. Without disclosing details, he also said Starlink has 'two quite significant partnerships with major country telcos' that could help the SpaceX division plug gaps in fifth-generation mobile and cellular networks."

SpaceX Had To Reschedule Its Rocket Launch Because A Helicopter Entered The 'Keep Out Zone' With Seconds To Go – And Elon Musk Isn't Happy About It

## Insider

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747&t=c&data=04|01|alicia.n.brown@nasa.gov|0cdc359b13e94ff4297208d93bb5fb36|7005d45845be48ae8140d43da 96dd17b|0|0|637606475058868895|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6Ik1 haWwiLCJXVCI6Mn0=|1000&sdata=HIrs8tsCsKwIKPsZZkrL7cE4O/fN91ckODo8pfOnE8g=&reserved=0> (6/29) "Elon Musk tweeted an aircraft crossed the 'keep out zone,' preventing a SpaceX rocket launch. The SpaceX CEO said that the zone is 'unreasonably gigantic.''

Virgin Orbit Looks To Increase Launch Rates In 2022

### Space News

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002&t=c&data=04|01|alicia.n.brown@nasa.gov|0cdc359b13e94ff4297208d93bb5fb36|7005d45845be48ae8140d43da 96dd17b|0|0|637606475058868895|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6Ik1 haWwiLCJXVCI6Mn0=|1000&sdata=QtGqy8+b88SMKevJ8E0Q3jmBtsPcpnRKSsHj18inuvc=&reserved=0> (6/29, Foust) "On the eve of its second revenue-generating launch, Virgin Orbit is looking to 2022 to ramp up its launch activity and operate from several airports in the United States and Great Britain. In a call with reporters June 29, Virgin Orbit Chief Executive Dan Hart confirmed that the company was 'green for launch' on a LauncherOne mission called 'Tubular Bells: Part One.'"

SpaceX's Starship Could Launch To Orbit For 1st Time As Soon As July

### SPACE

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50d&t=c&data=04|01|alicia.n.brown@nasa.gov|0cdc359b13e94ff4297208d93bb5fb36|7005d45845be48ae8140d43da 96dd17b|0|0|637606475058878853|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiV2luMzIiLCJBTiI6lk1 haWwiLCJXVCI6Mn0=|1000&sdata=bH2eDq4y2RJav8K+RcOehzr5Yq1LrfyEO3QShmTKz/Q=&reserved=0> (6/29, Howell) "SpaceX president Gwynne Shotwell says the company is still 'shooting for July' for the first orbital flight of its huge Starship Mars rocket, although she acknowledged the company may not meet that target. 'I'm hoping we make it, but we all know that this is difficult,' Shotwell said during the National Space Society's International Space Development Conference on Friday (June 25)."

# Space News

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be7&t=c&data=04|01|alicia.n.brown@nasa.gov|0cdc359b13e94ff4297208d93bb5fb36|7005d45845be48ae8140d43da 96dd17b|0|0|637606475058878853|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6Ik1 haWwiLCJXVCI6Mn0=|1000&sdata=iQstnXSY9juo8+S3D8ZDHh72VFnsg+BnqIV9PKkjB/8=&reserved=0> (6/29, Erwin) "Voyager Space Holdings announced June 29 the appointment of former Department of the Air Force general counsel Tom Ayres as the company's chief legal officer and general counsel. Denver-based Voyager was founded in October 2019 as an alternative to the traditional venture capital models. It has since acquired several companies with the goal of becoming a vertically integrated space exploration industry player."

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d45&t=c&data=04|01|alicia.n.brown@nasa.gov|0cdc359b13e94ff4297208d93bb5fb36|7005d45845be48ae8140d43da 96dd17b|0|0|637606475058888798|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6lk1 haWwiLCJXVCI6Mn0=|1000&sdata=Ao2v8ONpCRviW2vbRvaFGDmg4NO+ZRGvEGm2XoL5SeI=&reserved=0>. The NASA Morning Briefing is published five days a week by Bulletin Intelligence, which creates custom briefings for government and corporate leaders. We can be found on the Web at BulletinIntelligence.com, or called at (703) 483-6100.

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Editor's Note

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893&t=c&data=04|01|alicia.n.brown@nasa.gov|23346097ffcf4739839608d920fe338c|7005d45845be48ae8140d43da9 6dd17b|0|0|637577098430663864|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1h aWwiLCJXVCI6Mn0=|1000&sdata=C0Zyt/g+WH9Bp7b8gIYjMIqI9bOB2y5wVPS7IJSuS3U=&reserved=0>. A NASA email address is required.

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NASA Tests Techniques For X-59 Low-Boom Flights

### Aviation Week

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601&t=c&data=04|01|alicia.n.brown@nasa.gov|23346097ffcf4739839608d920fe338c|7005d45845be48ae8140d43da9 6dd17b|0|0|637577098430663864|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6lk1h aWwiLCJXVCI6Mn0=|1000&sdata=hSOzvhscU2rHOuMudD0M15tfqRN1NhqXFQytH/qUzwE=&reserved=0> (5/26) "Validating the quiet supersonic performance of NASA's X-59 QueSST low-boom flight demonstrator will require precise measurement of the shock waves generated by the aircraft and how they propagate through the atmosphere to the ground. To that end, the agency has flight tested a visual navigation..."

Interview With NASA Administrator On Climate Change

### Spectrum News 13 (FL)

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a7a&t=c&data=04|01|alicia.n.brown@nasa.gov|23346097ffcf4739839608d920fe338c|7005d45845be48ae8140d43da9 6dd17b|0|0|637577098430673821|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6lk1h aWwiLCJXVCI6Mn0=|1000&sdata=FuRIUvI6ahVAYe5dY5fJxrcDxMIIEtoi+8osNWKflk8=&reserved=0> (5/26) "NASA is all about space exploration. But now its mission is expanding to tackle a growing problem on our planet. Spectrum News 13's Samantha Joe Roth speaks with NASA's new administrator about how the agency plans to tackle climate change."

NASA, Industry Face Challenges In Free Flyer Development

## Aviation Week

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2f9&t=c&data=04|01|alicia.n.brown@nasa.gov|23346097ffcf4739839608d920fe338c|7005d45845be48ae8140d43da9 6dd17b|0|0|637577098430673821|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6lk1h aWwiLCJXVCI6Mn0=|1000&sdata=wNNouTDPBbw9HOquHP5o1BzzovvxPgTISfDcfjzIRiA=&reserved=0> (5/26) "Questions surround NASA's strategy for transitioning human activities in low Earth orbit from the aging International Space Station (ISS) to multiple commercial free flyers, with potential industry partners curious about the agency's funding commitment. NASA plans a two-phase, multiyear effort to..."

U.S Firms GM, Lockheed Aim For The Moon With Lunar Rover Venture

## Reuters

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f8b&t=c&data=04|01|alicia.n.brown@nasa.gov|23346097ffcf4739839608d920fe338c|7005d45845be48ae8140d43da9 6dd17b|0|0|637577098430683778|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6lk1h aWwiLCJXVCI6Mn0=|1000&sdata=E4Coqb5qb3RfxO/UVqQ7hq5lu2/DYaPHrSJaj6+IGJU=&reserved=0> (5/26, Staff) "U.S. firms General Motors (GM) and Lockheed Martin Corp will develop a vehicle to drive NASA astronauts around on the moon's surface, they said on Wednesday, competing for a space project that could also promote their brands on earth. GM and Lockheed said they would collaborate to make a battery-powered, autonomous Lunar Terrain Vehicle for NASA's Artemis lunar landing program, which aims to return U.S. astronauts to the moon as early as 2024."

Capital Calls: Jeff Bezos And Elon Musk's D.C. Space Battle

### Reuters

<a href="https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021052702nasa&r=email-af44&l=007-">https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021052702nasa&r=email-af44&l=007-</a>

193&t=c&data=04|01|alicia.n.brown@nasa.gov|23346097ffcf4739839608d920fe338c|7005d45845be48ae8140d43da9 6dd17b|0|0|637577098430683778|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiV2luMzliLCJBTil6lk1h aWwiLCJXVCI6Mn0=|1000&sdata=QnQkpfTFGuBjfXH4UZHnObTm4FA/sCYdI1DUyOeWIRM=&reserved=0> (5/26) "COUNTDOWN. A fight between Elon Musk and Jeff Bezos over whose rocket firm will dominate the space race is about egos as big as the universe. But a battle in Washington, D.C. over funding for the National Aeronautics and Space Administration shows the contest centers just as much on earthly influence. NASA wants to go to the moon by 2024, and Musk's SpaceX and Bezos' Blue Origin both thought they would win funding to do so. But in April, the agency made a surprise decision to pick only SpaceX, citing a budget shortfall and technical factors. Blue Origin challenged the choice as unfair and risky."

Opinion: We Need To Put Science At The Center Of The UFO Question

Washington Post

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e61&t=c&data=04|01|alicia.n.brown@nasa.gov|23346097ffcf4739839608d920fe338c|7005d45845be48ae8140d43da9 6dd17b|0|0|637577098430683778|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiV2luMzliLCJBTil6lk1h aWwiLCJXVCI6Mn0=|1000&sdata=9eUt+GlsbNk1mI4aBLrAOzIRrjRyTkk0fv3xuAknEiw=&reserved=0> (5/26) "Ravi Kopparapu is a planetary scientist at NASA Goddard Space Flight Center. Jacob Haqq-Misra is a research scientist at the Blue Marble Space Institute of Science. With a government report due in June on unidentified aerial phenomena (UAP) and a recent '60 Minutes' story on U.S. Navy pilots' sightings and videos of mysterious images, prominent people in politics, the military and national intelligence are finally asking: What are we looking at?"

SolarWinds Hack 'A Big Wakeup Call,' NASA's Human Spaceflight Chief Says

## SPACE

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5bc&t=c&data=04|01|alicia.n.brown@nasa.gov|23346097ffcf4739839608d920fe338c|7005d45845be48ae8140d43da9 6dd17b|0|0|637577098430693731|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6lk1h aWwiLCJXVCI6Mn0=|1000&sdata=sQrOnum/r3Xc7x0kCYdSEIa5OAUHysFP+9cVc/lz6ks=&reserved=0> (5/26, Wall) "The effects of the SolarWinds hack extend out into the final frontier. In December 2020, news broke that a cyberattack had breached the defenses of the U.S. Treasury Department and one branch of the Department of Commerce. ... That same month, The Washington Post reported that NASA was one of those nine infiltrated agencies. NASA leaders know that the space agency, with its huge stores of advanced technical data, is an inviting target for hackers and therefore take significant measures to head them off. Even still it was compromised, and that shook the agency up."

Flight

NASA Tests Techniques For X-59 Low-Boom Flights

### Aviation Week

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db2&t=c&data=04|01|alicia.n.brown@nasa.gov|23346097ffcf4739839608d920fe338c|7005d45845be48ae8140d43da9 6dd17b|0|0|637577098430693731|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6lk1h aWwiLCJXVCI6Mn0=|1000&sdata=T5Pephn8zJI+N1b65RSZAGNsD85wqQMIDJtuFKas91U=&reserved=0> (5/26) "Validating the quiet supersonic performance of NASA's X-59 QueSST low-boom flight demonstrator will require precise measurement of the shock waves generated by the aircraft and how they propagate through the atmosphere to the ground. To that end, the agency has flight tested a visual navigation..."

Watch NASA Prepare For Our Flying-car Future

### Mashable

<a href="https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021052702nasa&r=email-af44&l=00b-">https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021052702nasa&r=email-af44&l=00b-</a>

267&t=c&data=04|01|alicia.n.brown@nasa.gov|23346097ffcf4739839608d920fe338c|7005d45845be48ae8140d43da9 6dd17b|0|0|637577098430703684|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6lk1h aWwiLCJXVCI6Mn0=|1000&sdata=GjzD5eVDkZUcVEsUbi8H7Fikj/P1cHH9JSquJiSI73E=&reserved=0> (5/26, Lekach) "Instead of taking a bus or train to work, what about a flying car? A Nova TV special, The Great Electric Airplane Race, airing Wednesday night on PBS, explores the possibility of using autonomous, battery-powered flight for commuting or taxi trips. As part of his research into electric flight, reporter Miles O'Brien visited NASA's Ames Research Center and hopped into its 10-story vertical motion simulator to see what it would be like to fly around San Francisco in one of these vehicles."

# Earth

Interview With NASA Administrator On Climate Change

# Spectrum News 13 (FL)

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17b&t=c&data=04|01|alicia.n.brown@nasa.gov|23346097ffcf4739839608d920fe338c|7005d45845be48ae8140d43da9 6dd17b|0|0|637577098430703684|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6lk1h aWwiLCJXVCI6Mn0=|1000&sdata=SBGxK2xSFYIcfLewWAS2IpVj0Png7FN/RqLZ9mqGwMw=&reserved=0> (5/26) "NASA is all about space exploration. But now its mission is expanding to tackle a growing problem on our planet. Spectrum News 13's Samantha Joe Roth speaks with NASA's new administrator about how the agency plans to tackle climate change."

Lunar Eclipse: Photos Of The Super Flower Blood Moon May 26

## Florida Today

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d4d&t=c&data=04|01|alicia.n.brown@nasa.gov|23346097ffcf4739839608d920fe338c|7005d45845be48ae8140d43da9 6dd17b|0|0|637577098430713651|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6lk1h aWwiLCJXVCI6Mn0=|1000&sdata=XQkMQYIKpIAg4IYz1+QEvCemQcRIqY/YN7ffCE3eFd0=&reserved=0> (5/26, Rice) "Sky watchers in some parts of the country witnessed one of the greatest sky spectacles of the year Wednesday morning as a full moon, supermoon and lunar eclipse happened at the same time, creating the super flower blood moon. ... 'Because the orbit of the moon is not a perfect circle, the moon is sometimes closer to the Earth than at other times during its orbit,' according to NASA."

Total Lunar Eclipse Turns Moon Red: Relive The 'Super Flower Blood Moon'

### **CNET** News

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c7e&t=c&data=04|01|alicia.n.brown@nasa.gov|23346097ffcf4739839608d920fe338c|7005d45845be48ae8140d43da9 6dd17b|0|0|637577098430713651|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6lk1h aWwiLCJXVCI6Mn0=|1000&sdata=zUS/GX612ZTU+5MyVJNUzz5jr6tqrdNmRoyJd5jfkas=&reserved=0> (5/26, Kooser) "A total lunar eclipse turned our celestial neighbor a rusty red on May 26. If you were in Africa or Europe, or simply slept through the show, you can still enjoy the images and livestream reruns of the 'super flower blood moon' and its lovely lava-like color. ... The astronauts on the International Space Station got a look at the supermoon and the eclipse from their vantage point in orbit around Earth. And photographers down on Earth also snapped some stunners."

Stunning Lunar Eclipse Photos And Videos Show 2021 Supermoon

### Newsweek

<a href="https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021052702nasa&r=email-af44&l=00f-">https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021052702nasa&r=email-af44&l=00f-</a>

9cd&t=c&data=04|01|alicia.n.brown@nasa.gov|23346097ffcf4739839608d920fe338c|7005d45845be48ae8140d43da9 6dd17b|0|0|637577098430713651|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6lk1h aWwiLCJXVCI6Mn0=|1000&sdata=JrezD9rd/wJEt2XMgkmNmqSDWCcOZIVjbfKIHYpnFZU=&reserved=0> (5/26, Palmer) "Images and videos have been shared online of the rare 'Super Flower Blood Moon' which is appearing in the night sky this week. ... The Earth's atmosphere then filters the light as it passes, giving the moon a dark reddish glow. According to NASA, the more dust or clouds in Earth's atmosphere there are during the eclipse, the redder the moon will appear."

Rare "Super Flower Blood Moon" Lunar Eclipse Captured In Stunning Photos From Around The World

# CBS News

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a66&t=c&data=04|01|alicia.n.brown@nasa.gov|23346097ffcf4739839608d920fe338c|7005d45845be48ae8140d43da9 6dd17b|0|0|637577098430723601|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6lk1h aWwiLCJXVCI6Mn0=|1000&sdata=2ZIcHFk2uawgxCIZCIjVakjKzS17u8HpQAwJ8lucSSM=&reserved=0> (5/26, Lewis) "Skywatchers around the world were treated to the most spectacular full moon of the year in the early morning hours on Wednesday. May 26 marked not just a supermoon, but also a lunar eclipse, or so-called 'blood moon.' According to NASA, a blood moon occurs during a total lunar eclipse, when the Earth is positioned directly between the moon and the sun. Earth's atmosphere filters the sunlight, scattering blue light but allowing red light to pass through."

# Blood Moon Lunar Eclipse Enthralls Viewers

# Fox News

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6be&t=c&data=04|01|alicia.n.brown@nasa.gov|23346097ffcf4739839608d920fe338c|7005d45845be48ae8140d43da9 6dd17b|0|0|637577098430723601|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6lk1h aWwiLCJXVCI6Mn0=|1000&sdata=4PVht5QkxfIjlbF5ivS4dQSTsFw8uRSKCTmmY8u05lw=&reserved=0> (5/26, Musto) "A super 'Blood Moon' captured the attention of viewers across the world on Wednesday. ... According to NASA, the Blood Moon occurs during a total lunar eclipse when the Earth aligns itself between the moon and the sun."

Rising Global Temperatures 'Inexorably Closer' To Climate Tipping Point

# Reuters

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e87&t=c&data=04|01|alicia.n.brown@nasa.gov|23346097ffcf4739839608d920fe338c|7005d45845be48ae8140d43da9 6dd17b|0|0|637577098430733559|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6lk1h aWwiLCJXVCI6Mn0=|1000&sdata=xqDM8aKO9UiSsyPkK+foGJA96a2duT4ufOAASZXKE34=&reserved=0> (5/26, Januta) "There is now a 40% chance that global temperatures will temporarily reach 1.5 degrees Celsius above preindustrial levels in the next five years – and these odds are rising, a U.N. report said on Wednesday. ... The WMO uses temperature data from multiple sources including NASA and the National Oceanic and Atmospheric Administration (NOAA)."

NASA To Design New 'Earth System Observatory' As Part Of National Push Against Climate Change

# SPACE

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2a7&t=c&data=04|01|alicia.n.brown@nasa.gov|23346097ffcf4739839608d920fe338c|7005d45845be48ae8140d43da96dd17b|0|0|637577098430733559|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6lk1haWwiLCJXVCI6Mn0=|1000&sdata=uTUQzGOeE8mc6HuNXebC+01ywA0ROtzk1/HNTItyHEA=&reserved=0>(5/26, 0.5)

Gohd) "NASA will design new, Earth-focused missions to support our growing understanding of climate change and provide important information to those on Earth impacted by its effects, the agency announced May 24 as part of a new Biden administration plan to 'enhance climate resilience.' The Biden administration, prior to meeting with climate and homeland security team members on May 24, announced earlier that day in a White House release that it will support the development of NASA's new 'Earth System Observatory' — a series of next-generation climate data systems that will be used to better track climate change and its impact on communities around the world."

### Humans in Space

NASA, Industry Face Challenges In Free Flyer Development

### Aviation Week

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13f&t=c&data=04|01|alicia.n.brown@nasa.gov|23346097ffcf4739839608d920fe338c|7005d45845be48ae8140d43da9 6dd17b|0|0|637577098430733559|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1h aWwiLCJXVCI6Mn0=|1000&sdata=/0FImjrtEPZHLGWFBYvUDUT5YR82u5wrS+1lyk5oWZ0=&reserved=0> (5/26) "Questions surround NASA's strategy for transitioning human activities in low Earth orbit from the aging International Space Station (ISS) to multiple commercial free flyers, with potential industry partners curious about the agency's funding commitment. NASA plans a two-phase, multiyear effort to..."

This Is What It's Like To Walk In Space

## CNN

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2c9&t=c&data=04|01|alicia.n.brown@nasa.gov|23346097ffcf4739839608d920fe338c|7005d45845be48ae8140d43da9 6dd17b|0|0|637577098430743513|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6lk1h aWwiLCJXVCI6Mn0=|1000&sdata=N8Gr3Rak2a29WJ9sAbEZ1InRrGlk2rYn28PLcVsuIOQ=&reserved=0> (5/26, Strickland) "When astronauts venture outside of the International Space Station to go on spacewalks, the most important thing they have to do is focus. This may sound simple, but imagine trying to focus on a memorized set of tasks while stepping out of an airlock and wearing a 300-pound spacesuit – with the glow of planet Earth and the sun and the dark void of the universe all around you. A tether connects you to the space station, and the absence of gravity keeps you from falling."

The Astronauts On Challenger Made Up The Perfect Crew

# Air & Space Smithsonian Magazine

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1a8&t=c&data=04|01|alicia.n.brown@nasa.gov|23346097ffcf4739839608d920fe338c|7005d45845be48ae8140d43da9 6dd17b|0|0|637577098430743513|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6lk1h aWwiLCJXVCI6Mn0=|1000&sdata=EtE3AmLu4WxDX+GOYaMuBMTpICy0LfXnkjJFjNSw1tU=&reserved=0> (5/26, Tedeschi) "On the morning of January 28, 1986, NASA launched the space shuttle Challenger from the Kennedy Space Center in Florida. The crew included the first Jewish astronaut, the second Black astronaut, and NASA's first Teacher in Space, Christa McAuliffe. In his latest book, The Burning Blue, Kevin Cook documents the crew's many achievements—and the flawed decision-making that led to their deaths. Cook spoke with Air & Space senior associate editor Diane Tedeschi in April."

NASA Is Sending A Batch Of Adorable Squids To The Space Station

## SlashGear

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5e6&t=c&data=04|01|alicia.n.brown@nasa.gov|23346097ffcf4739839608d920fe338c|7005d45845be48ae8140d43da9 6dd17b|0|0|637577098430753470|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6lk1h aWwiLCJXVCI6Mn0=|1000&sdata=u72gg/fljwHOhbfq1CYZDqWkQ7egt8l2dGjpjQ4pfvY=&reserved=0> (5/26, Roston) "Early next month, NASA will load a bunch of scientific experiments onto a cargo capsule destined for the International Space Station. One of these experiments involves a bunch of tiny, adorable squids. According to the space agency, the critters will be part of an experiment on the effects of spaceflight on beneficial microbes and their interactions with their hosts."

ISS Astronaut Snaps Super Flower Blood Moon And Lunar Eclipse From Orbit

## **CNET** News

<a href="https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021052702nasa&r=email-af44&l=018-">https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021052702nasa&r=email-af44&l=018-</a>

a27&t=c&data=04|01|alicia.n.brown@nasa.gov|23346097ffcf4739839608d920fe338c|7005d45845be48ae8140d43da9 6dd17b|0|0|637577098430753470|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6lk1h aWwiLCJXVCI6Mn0=|1000&sdata=QIIaFuWPoJMQx4JsvwHZ1P4cJMNZKpInPcsskOCrdas=&reserved=0> (5/26, Kooser) "Life is a little different on the International Space Station. The residents see 16 sunrises and 16 sunsets every day, and there are no pesky clouds to get in the way of their moon views. Astronaut Akihiko Hoshide captured scenic views of the May 26 supermoon and lunar eclipse from orbit. Hoshide is with the Japan Aerospace Exploration Agency (JAXA) and is part of the SpaceX Crew-2 mission that arrived at the ISS in April."

Astronauts On Set: Space Station May Host Wave Of TV Shows And Films

## New York Times

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b5a&t=c&data=04|01|alicia.n.brown@nasa.gov|23346097ffcf4739839608d920fe338c|7005d45845be48ae8140d43da9 6dd17b|0|0|637577098430753470|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiV2luMzIiLCJBTil6lk1h aWwiLCJXVCI6Mn0=|1000&sdata=wVYgFHETaHs45EXRo2BZGHjpWVxRCniUxLbBxMzNRQk=&reserved=0> (5/26, Chang) "Who wants to be an astronaut? If the answer is you, there's a reality TV show, appropriately titled 'Who Wants to Be an Astronaut?,' that you ought to apply for. The Discovery Channel is seeking to cast about 10 would-be astronauts to compete during the series's eight-episode run next year for a seat on a real-life trip to the International Space Station, followed by live coverage of the launch of the winner on a SpaceX rocket."

SpaceX Cargo Mission To Carry Water Bears, Baby Squids To Space Station

### UPI

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039&t=c&data=04|01|alicia.n.brown@nasa.gov|23346097ffcf4739839608d920fe338c|7005d45845be48ae8140d43da9 6dd17b|0|0|637577098430763427|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6lk1h aWwiLCJXVCI6Mn0=|1000&sdata=AWsMGglb0nMzey5TUFLizwOUtCV35z0qi0zuJID8L8U=&reserved=0> (5/26, Hays) "SpaceX's 22nd cargo resupply mission, slated to launch no earlier than June 3, will see several unique science experiments – involving water bears, baby squids and kidney stones – ferried to the International Space Station. Like so many experiments before them, the bulk of the experimental setups being carried aboard SpaceX CRS-22 are designed to illuminate the health risks facing astronauts."

NASA Astronaut Peggy Whitson Joining Private Mission To ISS

# **KTLA-TV** Los Angeles

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ec0&t=c&data=04|01|alicia.n.brown@nasa.gov|23346097ffcf4739839608d920fe338c|7005d45845be48ae8140d43da9 6dd17b|0|0|637577098430763427|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6lk1h aWwiLCJXVCI6Mn0=|1000&sdata=vtj39dMvS4zfno6TVfpkcl/PAjirS3Lw1TRMZgGOzE0=&reserved=0> (5/26) "Retired NASA astronaut Peggy Whitson is dusting off her spacesuit for another trip to space. But this time, she's flying private."

### Moon to Mars

U.S Firms GM, Lockheed Aim For The Moon With Lunar Rover Venture

## Reuters

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74a&t=c&data=04|01|alicia.n.brown@nasa.gov|23346097ffcf4739839608d920fe338c|7005d45845be48ae8140d43da9 6dd17b|0|0|637577098430773383|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6lk1h aWwiLCJXVCI6Mn0=|1000&sdata=7SjYCgus5WALeB2rNGPqS0qihJHHLoniyQw1tndscC4=&reserved=0> (5/26, Staff) "U.S. firms General Motors (GM) and Lockheed Martin Corp will develop a vehicle to drive NASA astronauts around on the moon's surface, they said on Wednesday, competing for a space project that could also promote their brands on earth. GM and Lockheed said they would collaborate to make a battery-powered, autonomous Lunar Terrain Vehicle for NASA's Artemis lunar landing program, which aims to return U.S. astronauts to the moon as early as 2024."

Lockheed Martin And GM Are Working On An Electric Moon Buggy

### The Verge

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6bd&t=c&data=04|01|alicia.n.brown@nasa.gov|23346097ffcf4739839608d920fe338c|7005d45845be48ae8140d43da9 6dd17b|0|0|637577098430773383|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6lk1h aWwiLCJXVCI6Mn0=|1000&sdata=hPLh8pkKIFLV0SE8hQ1RJZPfHX2d2I5s4eNx5PxOMr0=&reserved=0> (5/26, Roulette) "Lockheed Martin and General Motors unveiled plans on Wednesday to build an autonomous buggy-like vehicle that future astronauts can use to zip around the surface of the Moon. The two companies collaborated to pitch a conceptual Lunar Terrain Vehicle to NASA's Artemis program, a Moon exploration campaign that calls for various robots, vehicles, and scientific bases to be planted on the lunar surface within the next decade."

Lockheed Martin And GM Partner To Develop New Moon Buggy For NASA Astronauts And Cargo

### CNBC

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ed0&t=c&data=04|01|alicia.n.brown@nasa.gov|23346097ffcf4739839608d920fe338c|7005d45845be48ae8140d43da9 6dd17b|0|0|637577098430773383|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6lk1h aWwiLCJXVCI6Mn0=|1000&sdata=GrVY/+ZXxJ5SAQ7DDXfTQZO+T6IYAbSC6Hn/AmV0rOI=&reserved=0> (5/26, Sheetz) "Lockheed Martin and General Motors are partnering to develop a new type of lunar vehicle for NASA to use during its upcoming Artemis missions to the moon, the companies announced Wednesday. 'Surface mobility is critical to enable and sustain long-term exploration of the lunar surface. These next-generation rovers will dramatically extend the range of astronauts,' Lockheed Martin executive vice president Rick Ambrose said in a statement."

# GM And Lockheed Martin Are Making A Self-driving Moon Buggy For NASA

# SlashGear

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6fa&t=c&data=04|01|alicia.n.brown@nasa.gov|23346097ffcf4739839608d920fe338c|7005d45845be48ae8140d43da9 6dd17b|0|0|637577098430783340|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6lk1h aWwiLCJXVCI6Mn0=|1000&sdata=VK1yhbSiuJHyETXYLgRZSt/tRHc2jWa75/Sk0dFWC0Y=&reserved=0> (5/26, Davies) "NASA's astronauts need a new Moon ride, and GM and Lockheed Martin are aiming to hand them the keys to not just one but a whole fresh generation of lunar vehicles. The Lunar Terrain Vehicle, or LTV, is the first of a series of electric transportation options which NASA has put the call out for, as it tries to replicate the success of the commercial crew program for a new Moon rover."

Lockheed Martin And GM Partner Up To Build Next-gen Lunar Rover

## New Atlas

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92a&t=c&data=04|01|alicia.n.brown@nasa.gov|23346097ffcf4739839608d920fe338c|7005d45845be48ae8140d43da9 6dd17b|0|0|637577098430783340|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6lk1h aWwiLCJXVCI6Mn0=|1000&sdata=EKiffmGBqh3OZSTWsuZrVqJ+OCJAU0KWRn8k5awkwn8=&reserved=0> (5/27, Szondy) "Lockheed Martin and General Motors are teaming up to develop a next-generation rover for NASA's Artemis program. Called the Lunar Terrain Vehicle (LTV), it will not only carry astronauts about, but will also operate autonomously. The 1972 Apollo 17 mission was not only the last time astronauts walked on the Moon, but also the last time they drove on it. Among the equipment packed in Cernan and Schmitt's Lunar Module was a 460-lb (260-kg) electric-powered Lunar Roving Vehicle (LRV) of a type that first flew on Apollo 15. Able to travel at a blistering 11.2 mph (18.0 km/h), it carried the astronauts up to 4.7 miles (7.6 km) from the landing site – allowing them to explore much more of the area."

Lockheed Martin And GM Planning Self-Driving Rovers For NASA's Return To The Moon

# Forbes

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34e&t=c&data=04|01|alicia.n.brown@nasa.gov|23346097ffcf4739839608d920fe338c|7005d45845be48ae8140d43da9 6dd17b|0|0|637577098430793295|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6lk1h aWwiLCJXVCI6Mn0=|1000&sdata=H4dmAjhSZ25os1PuTjvkW3ywDLnqrGRCxy4qpucVIrs=&reserved=0> (5/26, Reimann) "General Motors and aerospace giant Lockheed Martin are teaming up to develop new lunar vehicles that astronauts will use on NASA's upcoming missions to the Moon, the companies announced Wednesday, as the two push to join Elon Musk's SpaceX as industry partners to bring humans back to the Moon in the next few years."

Lockheed, General Motors Team Up On Lunar Rover Plan

# UPI

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41e&t=c&data=04|01|alicia.n.brown@nasa.gov|23346097ffcf4739839608d920fe338c|7005d45845be48ae8140d43da9 6dd17b|0|0|637577098430793295|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1h aWwiLCJXVCI6Mn0=|1000&sdata=6HUE/wzP3IsCO6G0rn6b4yK59h8V/kWkDhnqOI52ag8=&reserved=0> (5/26, Brinkmann) "Two American corporate giants, defense firm Lockheed Martin and automaker General Motors, will develop new lunar rovers for upcoming moon missions, the companies announced Wednesday. Lockheed and GM plan a fleet of robotic and piloted rovers, which would move farther than Apollo's three so-called moon buggies, according to a news release. The farthest distance an Apollo rover traveled was about 4.7 miles from the landing site."

GM, Lockheed Team Up On Potential New-Era Moon Rover For NASA

# Bloomberg

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e94&t=c&data=04|01|alicia.n.brown@nasa.gov|23346097ffcf4739839608d920fe338c|7005d45845be48ae8140d43da9 6dd17b|0|0|637577098430793295|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6lk1h aWwiLCJXVCI6Mn0=|1000&sdata=oG932schaVnXCy1JbmmBFp0Lxw0WEz8u4D8Cf/e59oA=&reserved=0> (5/26, Bachman) "General Motors Co. and Lockheed Martin Corp. are teaming up to develop a new lunar rover for the next time NASA has astronauts motoring around the moon. The Lunar Terrain Vehicle will be designed to travel farther than the Apollo-era rovers, which drove 4.7 miles (7.6 kilometers) from the landing site, GM and Lockheed said Wednesday. While NASA hasn't announced a contract for a lunar rover, a formal request for proposals could come later this year despite uncertainty about the timing and funding of the next moon mission."

GM, Lockheed Martin Developing A Next-generation Lunar Rover

# NBC News

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918&t=c&data=04|01|alicia.n.brown@nasa.gov|23346097ffcf4739839608d920fe338c|7005d45845be48ae8140d43da9 6dd17b|0|0|637577098430803249|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6lk1h aWwiLCJXVCI6Mn0=|1000&sdata=Y/XeW0r4+cCfEzp96d6tJvqM9DiJFmRKILD51f6Nn2Q=&reserved=0> (5/26, Chow) "General Motors and the aerospace firm Lockheed Martin are teaming up to develop a next-generation lunar rover that NASA astronauts could use on future missions to explore the moon, the two companies announced Wednesday. The planned vehicle is expected to be part of the companies' efforts to bid on a contract under NASA's Artemis program, which aims to return astronauts to the moon by 2024."

Lockheed Martin, GM Team Up To Build New Astronaut Moon Buggy

# SPACE

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bf6&t=c&data=04|01|alicia.n.brown@nasa.gov|23346097ffcf4739839608d920fe338c|7005d45845be48ae8140d43da9 6dd17b|0|0|637577098430803249|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6Ik1h aWwiLCJXVCI6Mn0=|1000&sdata=9JLL5A++K7VcUP4PHWEUIe1JEZJ04ZGEpXdnvjngzp0=&reserved=0> (5/26, Wall) "Two titans of industry are teaming up to build an astronaut car for the moon. Lockheed Martin and GM announced today (May 26) that they're developing a crewed lunar rover for potential use by NASA's Artemis program, which aims to establish a sustainable human presence on and around the moon by the end of the decade."

GM's Newest Vehicle: Off-road, Self-driving Rover For Moon

# AP

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e0c&t=c&data=04|01|alicia.n.brown@nasa.gov|23346097ffcf4739839608d920fe338c|7005d45845be48ae8140d43da96dd17b|0|0|637577098430813208|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiV2luMzliLCJBTil6lk1haWwiLCJXVCI6Mn0=|1000&sdata=kFQsAHc+i5jjFhEc6rYWGyTm0Y+HH9s1XcFvCLzIRIk=&reserved=0>(5/26, 0.5)

Dunn) "General Motors is teaming up with Lockheed Martin to produce the ultimate off-road, self-driving, electric vehicles — for the moon. The project announced Wednesday is still in the early stages and has yet to score any NASA money. But the goal is to design light yet rugged vehicles that will travel farther and faster than the lunar rovers that carried NASA's Apollo astronauts in the early 1970s, the companies said."

GM Joins Lockheed Martin To Design A Moon Buggy For NASA Astronauts

### **CNET** News

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53a&t=c&data=04|01|alicia.n.brown@nasa.gov|23346097ffcf4739839608d920fe338c|7005d45845be48ae8140d43da9 6dd17b|0|0|637577098430813208|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiV2luMzliLCJBTil6lk1h aWwiLCJXVCI6Mn0=|1000&sdata=5a9FHwN/ckn+Vw3oD9bqfNf7nXbRYwQMNPGA5KXyPS0=&reserved=0> (5/26, Mack) "General Motors says it aims to help NASA bring electric and autonomous vehicles to the moon this decade to allow Artemis astronauts to zip around the lunar surface. The legacy car company announced Wednesday that it's teaming up with longtime NASA contractor Lockheed Martin to develop new moon buggies."

NASA's VIPER Rover To Look For Water, Resources On Moon

## Fox News

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957&t=c&data=04|01|alicia.n.brown@nasa.gov|23346097ffcf4739839608d920fe338c|7005d45845be48ae8140d43da9 6dd17b|0|0|637577098430813208|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6lk1h aWwiLCJXVCI6Mn0=|1000&sdata=nsvO0cLJIF0Q08Y8xyLhny0pusFRM8Ok4EUIq4hvA9E=&reserved=0> (5/26, Musto) "NASA's ambitious lunar program Artemis will send the agency's first mobile robot to the moon in late 2023. The Volatiles Investigating Polar Exploration Rover, also known as VIPER, would search the planet for ice and other resources on and below its surface that could potentially be harvested for long-term exploration in the future."

'Marscapes' Plans Landscape Art Of Red Planet In Kickstarter Project

### SPACE

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6fe&t=c&data=04|01|alicia.n.brown@nasa.gov|23346097ffcf4739839608d920fe338c|7005d45845be48ae8140d43da9 6dd17b|0|0|637577098430823163|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiV2luMzliLCJBTil6lk1h aWwiLCJXVCI6Mn0=|1000&sdata=uphe+nS6TH2aiSsAbppdvg3vbxaDj4B9VWMa65RbOiE=&reserved=0> (5/26, Howell) "A new art project on Kickstarter offers backers the chance to gain 'raised landscapes' of Mars in celebration of the Mariner 9 spacecraft's 50th anniversary. ... Mariner 9 made it to the Red Planet on Nov. 14, 1971 to do NASA's first orbital mapping of Mars. To scientists' surprise, the spacecraft arrived in the middle of a dust storm — showing that the planet was not a moon-like quiet desert, as previous flybys hinted. After the regolith subsided, Mariner 9 spotted several volcanoes (including the Arizona-sized Olympus Mons) along with a gigantic gulley system (now called Valles Marineris) that dwarfs the Grand Canyon on Earth."

Op-Ed | Artemis 2026: Celebrating America's 250th With The Next Humans On The Moon

# Space News

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aWwiLCJXVCI6Mn0=|1000&sdata=wyiyV5HM6/TgWsQfdmyYVjtXfN7K3vGw6IIQZg2g6gM=&reserved=0> (5/26, Bender) "On July 4, 2026, the United States will celebrate the 250th anniversary of its independence. America should commemorate this historical milestone in 2026 by landing humans on the moon for the first time since 1972. Sending humanity back to the moon in 2026 is not only technically feasible, but it also fits squarely in the projected timeline for NASA's already existing plan to return astronauts to the lunar surface — the Artemis program."

Hawley, Sanders Decry \$10B 'Bailout' To Jeff Bezos Tucked Into Bill To Rebuff China

## Fox Business

<a href="https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021052702nasa&r=email-af44&l=02b-">https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021052702nasa&r=email-af44&l=02b-</a>

0e4&t=c&data=04|01|alicia.n.brown@nasa.gov|23346097ffcf4739839608d920fe338c|7005d45845be48ae8140d43da9 6dd17b|0|0|637577098430833118|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6lk1h aWwiLCJXVCI6Mn0=|1000&sdata=3n57HohYza+689Rsec+h6Lw57owJhXxjErMOdF0cI1E=&reserved=0> (5/26) "Former Connecticut Senator Joe Lieberman (I) provides insight into the Senate Republicans proposing a counteroffer on Biden's infrastructure plan. Sens. Josh Hawley and Bernie Sanders are speaking out against a \$10 billion corporate 'bailout' to Blue Origin, a space flight company founded by Amazon's Jeff Bezos. ... The amendment would come after the company lost out on a multibillion-dollar NASA contract to SpaceX, run by Elon Musk. It would provide additional funding for NASA to carry out the Human Landing System program, and direct NASA to have two lander programs, giving Blue Origin another shot."

Capital Calls: Jeff Bezos And Elon Musk's D.C. Space Battle

## Reuters

<a href="https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021052702nasa&r=email-af44&l=02c-">https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021052702nasa&r=email-af44&l=02c-</a>

0ce&t=c&data=04|01|alicia.n.brown@nasa.gov|23346097ffcf4739839608d920fe338c|7005d45845be48ae8140d43da9 6dd17b|0|0|637577098430833118|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6Ik1h aWwiLCJXVCI6Mn0=|1000&sdata=kXHsf53Y3S/N5dfwDwHQptaa8mhilywZKIOt+wajISA=&reserved=0> (5/26) "COUNTDOWN. A fight between Elon Musk and Jeff Bezos over whose rocket firm will dominate the space race is about egos as big as the universe. But a battle in Washington, D.C. over funding for the National Aeronautics and Space Administration shows the contest centers just as much on earthly influence. NASA wants to go to the moon by 2024, and Musk's SpaceX and Bezos' Blue Origin both thought they would win funding to do so. But in April, the agency made a surprise decision to pick only SpaceX, citing a budget shortfall and technical factors. Blue Origin challenged the choice as unfair and risky."

Bernie Sanders Is Fighting A Massive 'Bailout' To Jeff Bezos' Space Company

### Vice

<a href="https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021052702nasa&r=email-af44&l=02d-">https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021052702nasa&r=email-af44&l=02d-</a>

912&t=c&data=04|01|alicia.n.brown@nasa.gov|23346097ffcf4739839608d920fe338c|7005d45845be48ae8140d43da9 6dd17b|0|0|637577098430833118|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6lk1h aWwiLCJXVCI6Mn0=|1000&sdata=oYhRZ2/c96uQ+5CpYAZsMWL74NrhqA9JRtdQWkDjczg=&reserved=0> (5/26, Ferreira) "The icy rivalry between space companies SpaceX and Blue Origin, which are owned respectively by billionaires Elon Musk and Jeff Bezos, has now spilled into the US Senate. Senator Bernie Sanders (I-Vermont) introduced an amendment to a funding bill on Monday seeking to stop a plan to secure \$10 billion in government funding, some of which would likely go to Blue Origin to provide redundancy for a project contracted to SpaceX last month. Sanders called the funding 'the multibillion dollar Bezos Bailout' in his amendment. Though Musk and Bezos have traded personal taunts before, their feud has been amplified since April by NASA's decision to award SpaceX a prestigious \$2.9 billion contract to build a 'human landing system' for the Artemis program, which aims to return astronauts to the surface of the Moon this decade."

South Korea Is The Latest Nation To Join NASA's Artemis Accords

# SlashGear

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41e&t=c&data=04|01|alicia.n.brown@nasa.gov|23346097ffcf4739839608d920fe338c|7005d45845be48ae8140d43da9 6dd17b|0|0|637577098430843078|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6lk1h aWwiLCJXVCI6Mn0=|1000&sdata=ZgCouXAQZVQaprnbWsKyS7qfv6Xp9fcw8iqf0XAkkQM=&reserved=0> (5/26, Roston) "NASA has announced that South Korea is now among the countries that have signed the Artemis Accords, joining other nations like the UK, UAE, Japan, Canada, Australia, and more. The Artemis Accords set forth a series of principles that the countries will follow, including everything from the public release of data to the safe and peaceful exploration of our Moon."

NASA's Artemis Mission

# WESH-TV Orlando (FL)

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f06&t=c&data=04|01|alicia.n.brown@nasa.gov|23346097ffcf4739839608d920fe338c|7005d45845be48ae8140d43da9 6dd17b|0|0|637577098430843078|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6Ik1h aWwiLCJXVCI6Mn0=|1000&sdata=gaFi9pcqkEiecJddXkvyi0zd2sDXPbLlyPsoOZ+zwsk=&reserved=0> (5/26) "NASA sent astronauts to the moon with the Apollo program and now we are going back with Artemis. This program will explore parts of the moon we've never been to before."

China's First Mars Rover Is Finally Cruising

### BGR

<a href="https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021052702nasa&r=email-af44&l=030-">https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021052702nasa&r=email-af44&l=030-</a>

8c4&t=c&data=04|01|alicia.n.brown@nasa.gov|23346097ffcf4739839608d920fe338c|7005d45845be48ae8140d43da9 6dd17b|0|0|637577098430853036|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiV2luMzliLCJBTil6lk1h aWwiLCJXVCI6Mn0=|1000&sdata=JAO9g6eK71U4ZgBOTXkQBA171z72EQ52cTCTv6ptJCo=&reserved=0> (5/26, Wehner) "On the list of big surprises in space science over the past decade, the fact that China has rapidly become one of the major players in space exploration has to be near the top. The country, which watched for decades as the United States, Russia (and formerly, the Soviet Union), and European countries launched ever more advanced orbiters, landers, and rovers, has caught up to and in some cases surpassed its peers by completing some very difficult missions. The latest happens to be on Mars, where the China National Space Administration sent a trio of high-tech machines last year."

Solar System and Beyond

Black Holes, Aliens, Multiverse & Mars: Space TED Talks You Need To Watch

### SPACE

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1c8&t=c&data=04|01|alicia.n.brown@nasa.gov|23346097ffcf4739839608d920fe338c|7005d45845be48ae8140d43da96dd17b|0|0|637577098430853036|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6lk1haWwiLCJXVCI6Mn0=|1000&sdata=ka0jhUA7nzNaBUzhpjZJ9D2bmvP0OmfvOzoh1W6ID6Q=&reserved=0>(5/26, 0.5) to the second secon

Plummer) "This enlightening talk centers on our oldest cosmic neighbors, asteroids, and their importance to us here on Earth. Not only can asteroids shed light on the beginnings of the solar system, they also pose a massive risk to our safety. ... Carrie Nugent is part of the team that uses NASA's NEOWISE telescope, a very valuable telescope that was pulled out of retirement and reprogrammed to search the skies for asteroids and catalog them."

Jupiter's Ocean Moon Europa May Have Deep-sea Volcanoes

# SPACE

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dc3&t=c&data=04|01|alicia.n.brown@nasa.gov|23346097ffcf4739839608d920fe338c|7005d45845be48ae8140d43da9 6dd17b|0|0|637577098430853036|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6lk1h aWwiLCJXVCI6Mn0=|1000&sdata=rrjhaORBzHRJOJtf+wLRhAi8NVd4aOYgLiqOnn1iBek=&reserved=0> (5/26, Wall) "The Jupiter moon Europa may be an even more promising abode for life than scientists had thought. ... In a decade or so, researchers should be able to test and supplement such Europa modeling work with a wealth of new data, thanks to NASA's Europa Clipper mission."

Europa May Have Active Volcanoes On Its Ocean Floor

## SlashGear

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310&t=c&data=04|01|alicia.n.brown@nasa.gov|23346097ffcf4739839608d920fe338c|7005d45845be48ae8140d43da9 6dd17b|0|0|637577098430862989|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6lk1h aWwiLCJXVCI6Mn0=|1000&sdata=rAAGCBn+pj0p3q4PzgZPY7IwoYe1hQjMOd/MMCZewQw=&reserved=0> (5/26, McGlaun) "One of the more interesting objects in the solar system, when it comes to searching for the potential for extraterrestrial life, is Jupiter's moon Europa. On the surface, Europa looks like a giant frozen eyeball covered in veins. It's hard to imagine activity under that frozen surface, but scientists believe that the rocky layer underneath that frozen surface could be hot enough to melt, creating undersea volcanoes. NASA scientists have conducted new research and computer modeling indicating volcanic activity may have occurred on the seafloor of Europa in the recent past and could be happening still."

### Space Tech

Russia To Launch Nuclear-powered Spaceship To The Moon, On To Venus, Then Jupiter

### The Hill

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387&t=c&data=04|01|alicia.n.brown@nasa.gov|23346097ffcf4739839608d920fe338c|7005d45845be48ae8140d43da9 6dd17b|0|0|637577098430862989|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiV2luMzliLCJBTil6lk1h aWwiLCJXVCI6Mn0=|1000&sdata=O0gfefir1yKk6h77+dTX7NiFi5wX3vGpecn6Rvqn5Gs=&reserved=0> (5/26, Srikanth) "More than half a century after NASA successfully sent the world's first nuclear reactor into orbit, Russia is moving forward with plans to launch a nuclear-powered spaceship into space. It'll take quite the spacecraft to travel from the Moon to Venus and then Jupiter over 50 months in deep space. Russia's space agency thinks their nuclearpowered transport and energy module will do it in 2030, reported TASS, the Russian News Agency."

### Various

Opinion: We Need To Put Science At The Center Of The UFO Question

## Washington Post

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16b&t=c&data=04|01|alicia.n.brown@nasa.gov|23346097ffcf4739839608d920fe338c|7005d45845be48ae8140d43da9 6dd17b|0|0|637577098430872945|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6lk1h aWwiLCJXVCI6Mn0=|1000&sdata=7cWCZ6BNqxPi5kLO3TMA7/oA370cWYoH4eaX/JzuyyQ=&reserved=0> (5/26) "Ravi Kopparapu is a planetary scientist at NASA Goddard Space Flight Center. Jacob Haqq-Misra is a research scientist at the Blue Marble Space Institute of Science. With a government report due in June on unidentified aerial phenomena (UAP) and a recent '60 Minutes' story on U.S. Navy pilots' sightings and videos of mysterious images, prominent people in politics, the military and national intelligence are finally asking: What are we looking at?"

SolarWinds Hack 'A Big Wakeup Call,' NASA's Human Spaceflight Chief Says

## SPACE

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6ce&t=c&data=04|01|alicia.n.brown@nasa.gov|23346097ffcf4739839608d920fe338c|7005d45845be48ae8140d43da9 6dd17b|0|0|637577098430872945|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6lk1h aWwiLCJXVCI6Mn0=|1000&sdata=no1hFAfoHd3XZ8mYAVCEA5imCUS9RY4VejJYnpCYe5M=&reserved=0> (5/26, Wall) "The effects of the SolarWinds hack extend out into the final frontier. In December 2020, news broke that a cyberattack had breached the defenses of the U.S. Treasury Department and one branch of the Department of Commerce. ... That same month, The Washington Post reported that NASA was one of those nine infiltrated agencies. NASA leaders know that the space agency, with its huge stores of advanced technical data, is an inviting target for hackers and therefore take significant measures to head them off. Even still it was compromised, and that shook the agency up."

New Documentary Explores 'Star Trek,' Nichelle Nichols And NASA's 1970s Astronaut Search

### SPACE

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c87&t=c&data=04|01|alicia.n.brown@nasa.gov|23346097ffcf4739839608d920fe338c|7005d45845be48ae8140d43da9 6dd17b|0|0|637577098430872945|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6lk1h aWwiLCJXVCI6Mn0=|1000&sdata=yOmBAun4gbfSqRjqJS9XQW4pky5bXJ5HPXuXOW1rjil=&reserved=0> (5/26, Howell) "In the 1970s, 'Star Trek' actor Nichelle Nichols saw an astronaut corps lacking in diversity and did what she could to change it. The story of how Nichols went about it – and the various people she inspired – is told in the new documentary 'Woman In Motion: Nichelle Nichols, Star Trek and the Remaking of NASA.'"

Nichelle Nichols' New NASA Documentary Is Romantic And Unflinching

### io9

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e08&t=c&data=04|01|alicia.n.brown@nasa.gov|23346097ffcf4739839608d920fe338c|7005d45845be48ae8140d43da9 6dd17b|0|0|637577098430882903|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6lk1h aWwiLCJXVCI6Mn0=|1000&sdata=vfmXPUMSAqcgo9llxYxuX7SeUDYZ2/J9VILDRSWWQTA=&reserved=0> (5/26) "Early on in the new documentary Woman in Motion, Star Trek legend Nichelle Nichols discusses the idea of the blurred lines between the fantastical and the real in her job as Lieutenant Uhura, a character in equal parts historymaking and yet also held back by the harsh realities of the era her character was made in. The documentary itself, going far beyond that 23rd century future and all the way back into our own history, is a similar adventure. Directed by The Highwaymen's Todd Thompson—and now coming to Paramount+ after a limited theatrical debut earlier this year—Woman in Motion: Nichelle Nichols, Star Trek and the Remaking of NASA showcases a fascinating balancing act."

NASA Projects Over Budget And Behind Schedule, According To GAO Report

# Florida Today

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2ad&t=c&data=04|01|alicia.n.brown@nasa.gov|23346097ffcf4739839608d920fe338c|7005d45845be48ae8140d43da9 6dd17b|0|0|637577098430882903|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiV2luMzIiLCJBTil6lk1h aWwiLCJXVCI6Mn0=|1000&sdata=+1sDTaahbTbjChdlTatHSddBcXzKapBsjuEHZHNtbzk=&reserved=0> (5/26, McCarthy) "NASA major projects continue to be behind schedule and over budget, according to a new report from the Government Accountability Office. This is the fifth consecutive year of cost overruns and lagging production, the report says."

# Other

Falcon 9 Completes Its 100th Successful Flight In A Row [Updated]

# Ars Technica

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bd8&t=c&data=04|01|alicia.n.brown@nasa.gov|23346097ffcf4739839608d920fe338c|7005d45845be48ae8140d43da9 6dd17b|0|0|637577098430892860|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiV2luMzliLCJBTil6lk1h aWwiLCJXVCI6Mn0=|1000&sdata=vooQ3oMrlvzgEb4LDMOqXDq90AKwl+Cqw2JcvCWESns=&reserved=0> (5/26, Berger) "Update, 3:30 pm EDT: Under bright blue skies, the Falcon 9 rocket took off from Florida on Wednesday afternoon and promptly delivered its Starlink payload into orbit. This booster has truly become the workhorse of the global launch industry:"

SpaceX Is About To Hit A Ridiculous Milestone

# BGR

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f1f&t=c&data=04|01|alicia.n.brown@nasa.gov|23346097ffcf4739839608d920fe338c|7005d45845be48ae8140d43da96 dd17b|0|0|637577098430892860|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6lk1ha WwiLCJXVCI6Mn0=|1000&sdata=XjsO4qrwc3rk2KYBh14hn1viz6cVrO92T4bNS9dmtec=&reserved=0> (5/26, Wehner) "If it seems like SpaceX launches have gotten a bit, well, boring lately it's probably because so many of them go off without a hitch. Sure, the SpaceX Starship prototypes have been having a rough go of things, but the Falcon 9 is so reliable at this point that launches come and go without much fanfare. In fact, the SpaceX Starlink launch that is scheduled to take place today, May 26th, 2021, will be the 100th consecutive successful Falcon 9 launch, assuming all goes as planned."

SpaceX Bolsters Starlink Network With 60 More Satellites

# Aviation Week

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SpaceX Falcon 9 rocket delivered the 29th batch of Starlink satellites into orbit on May 26 as the company expanded beta trials of its high-speed internet service to Belgium and the Netherlands. More than 500,000 people have placed orders or put down deposits to try the service..."

SpaceX Launches More Starlink Satellites As Orders Reach Half A Million

## Florida Today

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0cb&t=c&data=04|01|alicia.n.brown@nasa.gov|23346097ffcf4739839608d920fe338c|7005d45845be48ae8140d43da9 6dd17b|0|0|637577098430902815|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6Ik1h aWwiLCJXVCI6Mn0=|1000&sdata=I7KaUU3WEukNkFTUTYugLS66G3J2m65bSeFEGrRX9fE=&reserved=0> (5/26, Kelly) "A SpaceX Falcon 9 rocket helped deliver another batch of 60 Starlink satellites to low-Earth orbit Wednesday, further advancing the internet-beaming constellation that has already secured half a million pre-orders. 'To date, over half a million people have placed an order or put down a deposit for Starlink,' Youmei Zhou, a SpaceX propulsion engineer, said during a webcast leading up to the 2:59 p.m. launch from Cape Canaveral Space Force Station."

SpaceX Launches And Lands Falcon 9 Rocket For 85th Time

## Bloomberg

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a47&t=c&data=04|01|alicia.n.brown@nasa.gov|23346097ffcf4739839608d920fe338c|7005d45845be48ae8140d43da9 6dd17b|0|0|637577098430902815|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1h aWwiLCJXVCI6Mn0=|1000&sdata=K3Ly/CIds03V4Wdgrhh4ymVDOxSk9zQCVBA+BShwm2U=&reserved=0> (5/26) "SpaceX Launches and Lands Falcon 9 Rocket for 85th Time"

Viasat Threatens To Sue FCC Over SpaceX's Starlink Plan

## Law360

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7a3&t=c&data=04|01|alicia.n.brown@nasa.gov|23346097ffcf4739839608d920fe338c|7005d45845be48ae8140d43da9 6dd17b|0|0|637577098430912772|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6lk1h aWwiLCJXVCI6Mn0=|1000&sdata=PKRu0gca//0f7KenKKAs/UIOqQRnAkBagZsfDT9MBcE=&reserved=0> (5/26) "Satellite provider Viasat Inc. has asked the Federal Communications Commission to halt rival SpaceX's updating of its Starlink satellite fleet, saying the proposed changes pose environmental concerns that the FCC didn't adequately consider and that Viasat plans to challenge in federal court. In a recent filing, Viasat said the FCC should put SpaceX's plan on ice while the D.C. Circuit assesses whether the fleet of low-Earth orbit broadband satellites will cause harmful light pollution and dangerous space debris."

Is SpaceX's Starlink Mega Constellation An Environmental Problem? The FCC Says 'No'

## Forbes

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6eb&t=c&data=04|01|alicia.n.brown@nasa.gov|23346097ffcf4739839608d920fe338c|7005d45845be48ae8140d43da9 6dd17b|0|0|637577098430912772|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6lk1h aWwiLCJXVCI6Mn0=|1000&sdata=QEWxOktfvqUMSvcVGQv0i3fFsHo2jkBZyYzMjPwEo4o=&reserved=0> (5/26, O'Callaghan) "The Federal Communications Commission (FCC) has said SpaceX's Starlink constellation does not require an environmental review, after concerns were raised about its impact on the night sky and the atmosphere. In May 2019, SpaceX began the launch and deployment of its Starlink constellation, a planned group of up to 42,000 satellites in orbit designed to beam the internet to Earth from space."

Starlink V1.0 L28 Mission Completes First "Shell" Of Satellites For Worldwide Coverage

#### NASA Space Flight

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6b7&t=c&data=04|01|alicia.n.brown@nasa.gov|23346097ffcf4739839608d920fe338c|7005d45845be48ae8140d43da9 6dd17b|0|0|637577098430912772|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6lk1h aWwiLCJXVCI6Mn0=|1000&sdata=tW9KI8c31bzNIf5r+MSbYPzTIIzr09gu2ASIQMzt1u0=&reserved=0> (5/26, Davenport) "SpaceX's 16th Falcon 9 launch of the year on Wednesday May 26 lifted off with 60 Starlink satellites to finish the first of five orbital shells for the constellation. Liftoff from Space Launch Complex 40 (SLC-40) occurred on time at 2:59 PM EDT (18:59 UTC). The Starlink constellation promises to provide high speed broadband internet to millions worldwide that lack the ability to obtain this type of service now."

EU Court Rejects OHB Bid To Suspend European Space Agency Decisions

#### Reuters

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93c&t=c&data=04|01|alicia.n.brown@nasa.gov|23346097ffcf4739839608d920fe338c|7005d45845be48ae8140d43da9 6dd17b|0|0|637577098430922727|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6lk1h aWwiLCJXVCI6Mn0=|1000&sdata=OKABRLkr/RcgavWmatqngz/PikrItJjDCjbsWDySTYQ=&reserved=0> (5/26, Staff) "Europe's second-top court on Wednesday rejected an application by German satellite company OHB System AG to suspend two public procurement decisions by the European Space Agency. The Luxembourg-based General Court also dismissed OHB's application for interim relief."

Editorial: Flight Puts Virgin, NM In Space Race

#### Albuquerque (NM) Journal

<a href="https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021052702nasa&r=email-af44&l=043-">https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=2021052702nasa&r=email-af44&l=043-</a>

e2c&t=c&data=04|01|alicia.n.brown@nasa.gov|23346097ffcf4739839608d920fe338c|7005d45845be48ae8140d43da9 6dd17b|0|0|637577098430922727|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiV2luMzliLCJBTil6lk1h aWwiLCJXVCI6Mn0=|1000&sdata=8ut4zRNQPNNuyKJjtzgD+C2Oun3zdHpFl9vKARJ8K4Q=&reserved=0> (5/26) "Saturday was a big day for Virgin Galactic, Spaceport America, commercial space flight and New Mexico. After years of delays, Virgin Galactic's VSS Unity successfully shot into space after breaking away from its mothership at 44,000 feet. Unity climbed about 55 miles above Earth before gliding down to Spaceport America, the world's first purposebuilt commercial spaceport near Truth or Consequences."

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6dd17b|0|0|637577098430932683|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiV2luMzliLCJBTil6lk1h aWwiLCJXVCI6Mn0=|1000&sdata=ZrNdUYQUIHPOXsXXMaU8+7wHkZxcE+8WVe09pP75qqo=&reserved=0>. Services including embedded Tweets are also subject to Twitter for Website's information and privacy policies <https://gcc02.safelinks.protection.outlook.com/?url=https://mailview.bulletinintelligence.com/mailview.aspx?m=20210 52702nasa&r=email-af44&l=045-

de9&t=c&data=04|01|alicia.n.brown@nasa.gov|23346097ffcf4739839608d920fe338c|7005d45845be48ae8140d43da9 6dd17b|0|0|637577098430932683|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1h aWwiLCJXVCI6Mn0=|1000&sdata=JFtsIIW9D3xT89mxVfYcAtHCyZ70OwTbWwTqDLoayXQ=&reserved=0>. The NASA Morning Briefing is published five days a week by Bulletin Intelligence, which creates custom briefings for government and corporate leaders. We can be found on the Web at BulletinIntelligence.com, or called at (703) 483-6100.

# NASA INTERVIEW PREP DOCUMENT - as of 5-28-21 (internal distribution only)

From:	Beutel, Allard (HQ-NA020) <allard.beutel@nasa.gov></allard.beutel@nasa.gov>
Sent:	May 29, 2021 10:56:57 AM EDT
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Attachments:	NASA INTERVIEW PREP DOCUMENT - as of 5-28-21.docx

Morning, attached is the latest interview prep document. The top four items are new:

- Fiscal Year 2022 NASA Full Budget Proposal
- Earth System Observatory
- Hurricanes and NASA
- Search for Life, Technosignatures, and UAP/UFOs

The upcoming events public dates section is update.

-Allard

## Attachment

## 1. NASA INTERVIEW PREP DOCUMENT - as of 5-28-21.docx

Type:application/vnd.openxmlformats-officedocument.wordprocessingml.documentSize:59 KB (60,644 bytes)

# Attachment #1 NASA INTERVIEW PREP DOCUMENT - as of 5-28-21.docx

# **Original view**

13 pages (displayed on pages 4 to 16)



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Updated 5/28/21

### NASA INTERVIEW PREP DOCUMENT

#### **RECENT HOT TOPICS**

#### Fiscal Year 2022 NASA Full Budget Proposal

On May 28, the Biden-Harris Administration released the full budget proposal for Fiscal Year 2022.

 President's Fiscal Year 2022 budget requests \$24.8 billion for NASA, an increase of more than 6% over what the agency received the previous year.

#### **Overarching Points**

- This funding request demonstrates the president's commitment to NASA and the people across the agency and its partners who have worked so hard this past year under the most difficult circumstances and achieved unprecedented success.
- The NASA workforce and the American people should be encouraged by what they see in this budget request. It is an investment in our future, and it shows confidence in what this agency has to offer. We owe it to the president and the American people to be good and responsible stewards of every tax dollar invested in NASA.
- This budget request includes the strongest NASA budget ever for science, which will help address the climate crisis at home and abroad, as well as advance robotic missions that will pave the way for astronauts to explore the Moon and Mars.
- This is also the strongest budget for exploration since the Apollo program.
- This budget request will restore America's global standing, promote racial and economic equity, and drive economic growth.

#### Supports Human Exploration of the Moon, Mars, and Beyond

- The president's funding request increases funding for Artemis by \$350 million and gives us the resources to advance America's bipartisan Moon to Mars space exploration plan, agreed to by the Administration and Congress.
- This request keeps us on the path toward a regular cadence of Artemis missions with crew to the Moon by the middle of the decade.
- NASA's human landing system contract award, with the goal of a human demonstration mission to the lunar surface by 2024, is under protest.
- NASA is currently reviewing the overall Artemis timeline based on appropriations and expected budget, and outcome of the human landing system protest. We hope to provide an updated Artemis timeline later this year following conclusion of the protest.
- The FY2022 budget request assumes an Artemis I launch no earlier than November 2021, an Artemis II launch no earlier than September 2023, followed by Artemis III targeted for late 2024 and Artemis IV for late 2025. Landing the first woman and first person of color on the lunar surface as part of the Artemis program will promote equity – signaling to every American they too can see themselves among the stars.
- With NASA's Space Launch System rocket and Orion spacecraft, as well as U.S. commercial partnerships with the human landing system and Gateway lunar outpost, we will send astronauts to the Moon to test technologies and exploration practices that will make future missions more productive than ever before.
- This budget funds an upgraded Space Launch System, known as Block1B, that can deliver larger cargos to lunar orbit.

**Quick Reference** 

Upcoming Events Public Dates



- Gateway, built with our commercial and international partners, is important to sustainable lunar operations.
  - The foundation of our lunar outpost is targeted to launch no earlier than November 2024, with additional modules from our international partners launching later.
- We are working day and night to reduce risks and overcome the challenges of long-term human exploration of the Moon and Mars.
- The budget funds early design work and planning for additional surface architecture necessary including the lunar terrain vehicle and surface habitats to ensure our astronauts can explore more of the Moon than ever before and stay for increasingly longer periods of time in deep space.
- NASA's Lunar Surface Innovation Initiative is advancing technologies to support mission operations on the Moon. This budget includes funding for the preliminary design of a fission surface power system that could power operations on the Moon and Mars.

#### Furthers Robotic Exploration of the Solar System and the Universe

- This funding request also furthers robotic exploration of the solar system and the universe.
- The budget provides more than \$650 million for the Mars Sample Return mission, the highest priority large mission in planetary science.
- It includes strong support for planetary defense, including the near-Earth objects (NEO) Surveyor mission to detect asteroids and comets that could potentially impact Earth.

## Enhances Research and Development at NASA

- This funding request supports continued progress developing cutting-edge space technologies, transformative capabilities, and renewable energy, all of which feed the economy and create good paying American jobs.
- Investing in new technologies enhances NASA's missions and fosters the growing space economy.
- NASA routinely demonstrates new technologies, reducing overall risk and encouraging industry adoption. The budget includes \$500 million for technology demonstrations.
- It fully funds the On-orbit Servicing, Assembly, and Manufacturing 1 (OSAM-1) mission. Robotically refueling a satellite and manufacturing and assembling spacecraft parts inorbit will foster a more sustainable space economy.
- Launching next month, our Laser Communications Relay Demonstration will demonstrate a technology that can provide 10-100 times better data rates than commonly used radio frequency communications systems. In the coming years, we'll further refine laser communications technology for use in deep space.
- More than \$280 million would be directed toward small business innovation research and technology transfer. The increase of \$60 million will provide more money to small companies to research new ideas and develop innovative solutions to challenging problems.
- An investment in NASA and space infrastructure reaffirms our nation is the world's premier partner in space collaboration, and we will be for decades to come.
- We are investing in aviation to make our skies safer, our fuels cleaner, and to get you to your destination faster than ever before. This also includes investing in next-generation



aeronautics research that will safely integrate automated aircraft systems with piloted airplanes.

- This budget enhances American competitiveness in the global aviation industry including the first two flights of new X-57 and X-59 aircraft.
- NASA aeronautics is leading transformation of the way people and goods are moved through Advanced Air Mobility (air taxis, drone cargo deliveries, etc.), an emerging market expected to be worth \$115 billion a year by 2035.
  - It will help safely deliver revolutionary aviation capabilities to previously underserved local, regional, intraregional, and urban areas. NASA investments today will spur the advancements of tomorrow.
- The budget provides a \$30 million increase to accelerate transformative science at the frontiers of biological and physical sciences research in space.

#### Advances Climate Science

- Climate change has increasing economic and national security impacts, and this budget increases investments in climate research and science programs.
- This funding increases our ability to better understand Earth and how it works as an integrated system, from our oceans to our atmosphere and how it all impacts our daily lives.
- NASA is developing the next-generation Earth System Observatory. NASA's new Earth System Observatory will provide the world with an unprecedented understanding of our Earth's climate system, arming us with next-generation data critical to mitigating climate change, and protecting our communities in the face of natural hazards.
  - The Earth System Observatory will help improve our understanding of extreme weather events and our decision making on climate resilience, adaptation, and mitigation. It will also inform decisions that ensure communities have the resources they need to build resilience prior to these crises.
- Research on zero-emissions aviation
  - NASA Aeronautics is partnering with industry, academia and other agencies through the Sustainable Flight National Partnership to accomplish the aviation community's aggressive climate change agenda. Through advanced vehicle technologies, efficient airline operations and sustainable aviation fuels, collectively NASA and our federal government and industry partners aim to reduce carbon emissions from aviation by half by 2050, compared to 2005, and achieve net-zero emissions by 2060.
- NASA continues to lead the development of new small spacecraft capabilities. For example, small platforms can enable distributed observations for climate science.

#### Builds a Diverse Future STEM Workforce

- This budget invests in the Artemis Generation. It requests funding for NASA's STEM engagement efforts for the first time in five years to inspire the next generation of scientists, engineers, mathematicians, and explorers by supporting the agency's STEM efforts.
- With this budget, NASA will increase funding for Space Grant and MUREP and will work with university and consortia partners to implement initiatives focused on diversity, equity and inclusion.



- NASA taps into the skills of a diverse group of partners and reaches new groups through our small business programs, academic partnerships, and prizes, challenges, and crowdsourcing activities.
- The Space Technology Mission Directorate is collaborating with OSTEM's Minority University Research and Education Project to offer research planning grants and incentivize partnerships between minority-serving institutions and small businesses, setting them up to apply to NASA opportunities.

#### Continues Research on the International Space Station

- The space station is a convergence of science, technology, and human innovation that demonstrates new technologies and enables research not possible on Earth. The space station remains the springboard to NASA's next great leap in exploration, including future human missions to the Moon and eventually to Mars.
- With continued support for the International Space Station and the Artemis program, the president welcomes the international community to join us as we push human exploration deeper into space.
- This budget supports early design maturation of multiple commercially owned and operated low-Earth orbit (LEO) destinations (free flyers) from which NASA, along with other customers, can purchase services and stimulate the growth of commercial activities in LEO.
- In addition to maintaining continuous U.S. access to a space station in LEO, these new and more cost-effective platforms will democratize access to space by lowering the barriers to entry for the next generation of researchers, technologists, and tourists.

## Earth System Observatory

On May 24, the White House and NASA announced new Earth System Observatory missions to help address and mitigate climate change:

- NASA will design a new set of Earth-focused missions to provide key information to guide efforts related to climate change, disaster mitigation, fighting forest fires, and improving real-time agricultural processes.
- With the Earth System Observatory, each satellite will be uniquely designed to complement the others, working in tandem to create a 3D, holistic view of Earth, from bedrock to atmosphere.
- "I've seen firsthand the impact of hurricanes made more intense and destructive by climate change, like Maria and Irma. The Biden-Harris Administration's response to climate change matches the magnitude of the threat: a whole of government, all handson-deck approach to meet this moment," said NASA Administrator Bill Nelson. "Over the past three decades, much of what we've learned about the Earth's changing climate is built on NASA satellite observations and research. NASA's new Earth System Observatory will expand that work, providing the world with an unprecedented understanding of our Earth's climate system, arming us with next-generation data critical to mitigating climate change, and protecting our communities in the face of natural disasters."
- The observatory follows recommendations from the 2017 Earth Science Decadal Survey by the National Academies of Sciences, Engineering and Medicine, which lays out ambitious but critically necessary research and observation guidance.
- Areas of focus for the observatory include:



- Aerosols: Answering the critical question of how aerosols affect the global energy balance, a key source of uncertainty in predicting climate change.
- Cloud, Convection, and Precipitation: Tackling the largest sources of uncertainty in future projections of climate change, air quality forecasting, and prediction of severe weather.
- Mass Change: Providing drought assessment and forecasting, associated planning for water use for agriculture, as well as supporting natural hazard response.
- Surface Biology and Geology: Understanding climate changes that impact food and agriculture, habitation, and natural resources, by answering open questions about the fluxes of carbon, water, nutrients, and energy within and between ecosystems and the atmosphere, the ocean, and the Earth.
- Surface Deformation and Change: Quantifying models of sea-level and landscape change driven by climate change, hazard forecasts, and disaster impact assessments, including dynamics of earthquakes, volcanoes, landslides, glaciers, groundwater, and Earth's interior.
- NASA currently is initiating the formulation phase for the observatory.
- Among its first integrated parts is NASA's partnership with the Indian Space Research Organisation (ISRO), which brings together two different kinds of radar systems that can measure changes in Earth's surface less than a half-inch.
  - This capability will be utilized in one of the observatory's first missions intended as a pathfinder, called NISAR (NASA-ISRO synthetic aperture radar).
  - This mission will measure some of the planet's most complex processes such as ice-sheet collapse and natural hazards such as earthquakes, volcanoes, and landslides. NISAR can assist planners and decision makers with managing both hazards and natural resources in the future.

## Hurricanes and NASA

June 1 is the official start of hurricane season for the Atlantic Ocean.

- After 2020 brought a record number of named storms in 2020, NASA is once again prepared to help understand and monitor these storms from its unique vantage point of space.
- NASA develops and launches satellites for NOAA, which is the lead federal agency for forecasting hurricanes. But the science of hurricanes doesn't start – or end – with forecasting.
- Global warming is increasing the heat in the ocean basins and already making it more likely that storms will intensify faster and be stronger, a phenomenon NASA scientists continue to study deeply.
- With the challenge posed by climate change, NASA has never been more committed to innovation in Earth science research.
  - Our next-generation Earth System Observatory, announced on May 24, missions will help us understand extreme weather events and other climate-fueled hazards to inform the solutions of the future.
- NASA researchers and data also support U.S. stakeholders before, during and after storms make landfall.
  - Stages of NASA Data:
    - Pre-storm assessment (feed weather prediction and forecasting models)



- Near-real-time assessment (identify potential impacts ahead of landfall)
- Post-storm assessment (help identify needs for support after landfall)
   Data access and visualization
- The <u>NASA Disasters Mapping Portal</u> takes disaster-related data and puts it into understandable, usable formats real-time use and application with the goal to bridge the gap between science products and the people who can use the data to assist in preparedness, response, mitigation, and recovery.
  - After a hurricane makes landfall, NASA satellites are in prime position to identify impacts such as damage, flood depth and extent, power outages, rainfall accumulation, landslide risk, and even soil moisture.
  - That information helps local governments, the Army Corps of Engineers, and FEMA monitor infrastructure failures and disruptions, isolate contaminated water supplies, and identify hotspots for urgent response needs.
- NASA also does plenty of its own deep research on hurricanes and tropical cyclone dynamics. A few examples among many:
  - NASA's Global Modeling and Assimilation Office is pioneering the use of ultra-highresolution global weather and micro-climate models.
  - The CPEX-AW airborne campaign planned in the Caribbean this August and September will pilot new technology to use LiDAR to better understand atmospheric winds and convective clouds in tropical storms.
  - NASA's Jet Propulsion Laboratory (JPL) is studying the use of artificial intelligence/machine learning to improve hurricane prediction capabilities using NASA satellite data.

## Search for Life, Technosignatures, and UAP/UFOs

Public and media interest in the topic of Unidentified Aerial Phenomenon/Unidentified Flying Objects (UAP/UFOs) has seen an uptick in recent weeks following reports about the Department of Defense's release of three unclassified Navy videos. Likewise, the 2021 Intelligence Authorization Act, signed in December 2020, stipulated the government had 180 days to gather and analyze data from disparate agencies. Below is our response to the public and media who call for NASA comment:

 One of NASA's key goals is the search for life in the universe. To date, NASA has yet to find any credible evidence of extraterrestrial life, however, NASA is exploring the solar system and beyond to help us answer fundamental questions, including whether we are alone in the universe. We stand ready to support the rest of the government in the search for life in the universe, be it close to home, on the planets or moons of our solar system, or deeper into space.

## NASA Administrator Fighting for Funding for NASA Missions

On May 19, NASA Administrator Sen. Bill Nelson testified virtually about NASA's fiscal year 2022 budget in front of the House Committee on Science, Space, and Technology. Sen. Nelson emphasized the support necessary to continue pursuing NASA's goals and missions. On May 21, he sent a <u>video</u> and following message to NASA employees:

• President Biden's discretionary funding request for NASA – \$24.8 billion – clearly demonstrates the Biden-Harris Administration's commitment to NASA, especially in light of the difficult circumstances of the past year. The full details of the president's budget



request are expected next week and will provide further insight into funding for all NASA programs.

Of course, NASA's goals and missions are challenging and require robust funding to see them through to completion. That's why I asked Congress yesterday, in a hearing before the House Appropriations Commerce, Justice, and Science Subcommittee, to include NASA in the upcoming American Jobs Plan, in addition to the president's full budget request.

NASA missions support tens of thousands of jobs nationwide and the Jobs Plan's focus on infrastructure, research, and development is an opportunity for Congress to include funding for NASA's critical missions, including the Artemis program, while also supporting good-paying American jobs.

China's Zhurong Mars rover landing last week is an example of why NASA's inclusion in the Jobs Bill is important – there is no time to wait.

Investments in technologies like nuclear thermal propulsion, advanced spacesuits, and updated, green infrastructure at our centers are important to our nation and NASA's future as a leader in space, innovation, and jobs around the country. I'm fighting to ensure the agency has the resources we need to continue that incredible legacy.

#### **China Mars Lander**

On May 14 (Eastern Time), China's Tianwen-1 orbiter deployed its rover, recently named "Zhurong," to the surface of Mars. NASA has been asked to comment on several aspects of the landing. On May 19, NASA Administrator Sen. Bill Nelson issued the following statement after the China National Space Administration's (CNSA's) release of the first photos from the Zhurong Mars rover:

 "Congratulations to the China National Space Administration on receiving the first images from the Zhurong Mars rover!" Nelson said. "As the international scientific community of robotic explorers on Mars grows, the United States and the world look forward to the discoveries Zhurong will make to advance humanity's knowledge of the Red Planet. I look forward to future international discoveries, which will help inform and develop the capabilities needed to land human boots on Mars."

CNSA's successful landing of the Zhurong rover last week makes it only the second nation to ever land successfully on Mars. Zhurong joins active NASA missions – the Curiosity and Perseverance rovers and Insight Lander – in exploring the surface of the Red Planet.

- The week of May 16, media outlets asked whether CNSA used NASA animation from a Mars mission a decade ago for animation related to its Zhurong Mars lander. The following is our response:
  - NASA's imagery is made freely available for use by the public.
  - If pressed for more:
    - For questions about the Zhurong animation, please check directly with the China National Space Administration.



- NASA also was asked the week of May 16 whether the agency's InSight Mars lander was able to detect Zhurong's landing. The following is our response:
  - As part of its normal science, InSight's data acquired seismic and atmospheric measurements at the time of Zhurong's landing. As we did with NASA's Perseverance landing, the InSight science team examined seismic and pressure oscillation signals associated with the Zhurong landing. Based on preliminary examination of the data, we don't appear to have detected it, just as we didn't with Perseverance.
- Below is NASA's initial public comment about the landing from Science Mission Directorate Associate Administrator Dr. Thomas Zurbuchen on <u>Twitter</u>:
  - "Congratulations to CNSA's #Tianwen1 team for the successful landing of China's first Mars exploration rover, #Zhurong! Together with the global science community, I look forward to the important contributions this mission will make to humanity's understanding of the Red Planet."

#### Human Landing System Sen. Cantwell Amendment

On May 12, Sen. Maria Cantwell offered an amendment in committee markup of the Endless Frontier Act that included language and proposed funding related to NASA's Human Landing System for the Artemis program. Below is our response to the public and media who call for comment:

 NASA is excited to return to the Moon with more robot and human explorers than ever before as part of the Artemis program. Both government and commercial capabilities are necessary to enable long-term exploration on and around the Moon. By purchasing commercial services to take astronauts from lunar orbit to land on the surface of the Moon, we will ensure a robust deep space transportation system is in place as we learn to live and work on another world for the benefit of all. NASA is unable to comment on the proposed amendment due to ongoing litigation of the recent human landing system selection.

More information can be found here: https://www.nasa.gov/nextstep/humanlander2

#### Webb Telescope Reported Possible Launch Delay

On May 12, Space News <u>reported</u> ongoing work to address a problem seen on two previous Ariane 5 rocket launches could delay the high-profile launch of NASA's James Webb Space Telescope. Below is our response to calls for comment:

 The launch readiness date for NASA's James Webb Space Telescope, which will be the premier observatory of the next decade, is Oct. 31, 2021. Webb is on schedule for that date, but we know schedule margin is tight. We are working closely with ESA and Arianespace on their launch vehicle readiness, and should a launch date change be needed, Webb has launch windows available almost every day of the year. Webb will study every phase in the history of our universe, including the first luminous glows after the creation of the cosmos, the formation of solar systems capable of supporting life on planets like Earth, and the evolution of our own solar system.

**Roscosmos Spaceflight Participants to the International Space Station Announcements** *On May 13, Roscosmos <u>announced</u> it plans to send spaceflight participants (non professional astronauts) for short trips to the International Space Station this year, including an actress and* 



filmmaker on a Soyuz flight in October. Below is the response to the public and media who ask for NASA comment:

 This year is truly a renaissance for human spaceflight both as we fly NASA and international partner astronauts on U.S. commercial crew spacecraft to the International Space Station and also as we see the expansion of private astronaut missions. As more people fly to space and do more things during their spaceflights, it attracts even more people to do more activities in low-Earth orbit, and reflects the growing market we envisioned the Commercial Crew Program enabling when we embarked on it about 10 years ago.

#### Webb Name Webb Telescope Name Statement

On May 7, Slate.com posted an <u>article</u> with the headline and sub-headline "The James Webb Space Telescope Hasn't Launched Yet. In One Way, It's Already a Relic. It will collect important data, but what does its name say about who it's for?" Below is our response to the public and media who call for comment:

NASA is aware of concerns that have arisen about James E. Webb, and we are working
with historians to examine his role in government. NASA named its next generation
observatory, the James Webb Space Telescope, after its second administrator, who
helped establish the Apollo Program that landed humans on the Moon. The agency
made the naming decision in recognition of Webb's role in retaining an active science
program at NASA in the agency's early years. Webb's work as administrator laid the
groundwork for today's accomplishments, and science remains a critical part of NASA's
work: to understand the universe, advance exploration, and inspire the next generation.

#### NASA's Ingenuity Mars Helicopter

On April 19, NASA's Ingenuity Mars Helicopter successfully completed the first attempt at powered, controlled flight of an aircraft on another planet. The experimental rotorcraft was carried to the Red Planet on NASA's Perseverance Mars rover. Ingenuity progressively added more complex flights on April 22, April 25, April 30, May 7, and May 23. On April 30, NASA <u>announced</u> that after its next two demonstration flights, Ingenuity will embark on a new operations demonstration phase, exploring how aerial scouting and other functions could benefit future exploration of Mars and other worlds.

- Ingenuity Key points:
  - Ingenuity is the first aircraft to attempt and achieve controlled flight on another planet (a "Wright Brothers" moment).
  - Ingenuity had already demonstrated feats of engineering shrinking its size and mass, working with specialized materials, demonstrating flight in a thin atmosphere while still on Earth.
  - Tests on Earth proved many of its engineering principles.
  - With Ingenuity's success, future Mars exploration could include an ambitious aerial dimension.
  - Ingenuity is a technology demonstration. Its experimental mission is separate from the rover, but we do tech demos because they advance our capabilities and help prove concepts for future mission.
- Ingenuity's technology demonstration objectives are:
  - Prove powered flight in the thin atmosphere of Mars.



- The Red Planet has lower gravity (about one-third that of Earth) but its atmosphere is just 1% as thick, making it much harder to generate lift.
- Demonstrate miniaturized flying technology.
  - That requires shrinking down onboard computers, electronics and other parts so that the helicopter is light enough to take off.
- Operate autonomously.
  - Ingenuity will use solar power to charge its batteries and rely on internal heaters to maintain operational temperatures during the cold Martian nights. After receiving commands from Earth relayed through the rover, each test flight is performed without real-time input from Mars Helicopter mission controllers.
- NASA's Perseverance Mars rover mission objectives are:
  - Take samples to leave on the surface for return to Earth in a few years. First leg of a round trip to Mars.
  - Search for signs of ancient microbial life as the rover explores a crater that billions of years ago might have been a large body of water like a lake.
  - Characterize the geology and climate of Mars.
  - Help pave the way for human exploration beyond the Moon.
- Perseverance Mars rover Key Points:
  - The Perseverance rover is the most capable rover ever sent to Mars and builds on the legacy of NASA's Mars Exploration Program and earlier rovers.
  - The mission embodies our nation's spirit of persevering even in the most challenging of situations, providing inspiration and advancing science and exploration. The mission itself personifies the human ideal of persevering toward the future.
  - The Mars 2020 mission is part of America's larger Moon to Mars exploration approach, which includes astronaut missions to the Moon that prepare for human exploration of the Red Planet.
  - NASA is committed to working with our international partners to accomplish stunning achievements in science, technology and exploration, and this mission reinforces those strong bonds.
  - Perseverance is the beginning of the first round-trip to another planet. The rover will collect rock and soil samples for return to Earth by future missions that could possibly confirm the ultimate astrobiology question: does life exist, or did it, elsewhere?
  - Perseverance carries the most sophisticated suite of instruments ever sent to Mars.
  - The mission addresses high-priority science goals to:
    - Return samples from Mars.
    - Search for clues about the potential for past life on Mars.
    - Find out what Mars' environment was like billions of years ago, and what might be preserved in the unique rocks of Jezero Crater.
    - Study what the planet's environment is like today.
  - NASA's robotic exploration of Mars is paving the way for future human missions to the Red Planet and will gather knowledge and demonstrate technologies that address the challenges of those human expeditions. Some relevant technologies include:
    - Entry, descent and landing technology.



- In situ resource use.
- Terrain-relative navigation.
- The public will get to ride along. The mission has more cameras than any previous interplanetary mission, and while we have "felt" vibrations in response to wind with the InSight lander's seismometer and "translated" them into sounds that we could hear with the human ear, two microphones on Perseverance will attempt for the first time to hear audio of the rover's operations and travels, as well as the environment at Mars.
- Perseverance joins a fleet that right now includes a rover, a lander and multiple orbiters. This is the 9th U.S. mission to land and the 5th rover. The U.S. is the only nation to successfully land on Mars.
- On April 20, a toaster-size experimental instrument aboard Perseverance called the Mars Oxygen In-Situ Resource Utilization Experiment (MOXIE) converted some of the Red Planet's thin, carbon dioxide-rich atmosphere into oxygen – the first time this has ever been done.
  - While the technology demonstration is just getting started, it could pave the way for science fiction to become science fact – isolating and storing oxygen on Mars to help power rockets that could lift astronauts off the planet's surface. Such devices also might one day provide breathable air for astronauts themselves.

## UPCOMING EVENTS PUBLIC DATES

Below are the publicly listed dates of some high-profile activities/events/milestones in 2021. Internal planning, target, and pre-decisional dates are not listed below as they're not official and public yet. The public dates listed are as specific as they can be, at this time. This list will be regularly updated and added to, as appropriate. Text in red is newly updated public information:

- State of NASA June 2: NASA Administrator Bill Nelson's first live address to the NASA workforce about the state of the agency and its activities
- Russian Spacewalk on the International Space Station June 2: Russian EVA 48
   (Novitskiy and Dubrov) from Poisk to dismantle cables for Pirs docking compartment
   undocking
- SpaceX CRS-22 June 3: Next commercial <u>resupply services</u> mission to space station from Florida
- Laser Comm June 23: NASA's Laser Communications Relay Demonstration to test optical communications launches from Florida
- **Boeing Orbital Flight Test-2 July 30 –** Boeing's uncrewed CST-100 Starliner OFT-2 (Orbital Flight Test-2) launch from Florida to the International Space Station
- Northrop Grumman CRS-16 July 2021: Commercial <u>resupply services</u> mission to space station from Virginia
- X-57 Fall 2021 -- Flight test for NASA's first all-electric plane, X-57, at Armstrong Flight Research Center
- Landsat 9 September: NASA and U.S. Geological Survey launch latest Earth observation satellite, Landsat 9, from California
- CAPSTONE Fall 2021: NASA <u>CubeSat</u> to validate new navigation technologies and verify dynamics in Gateway's planned orbit will launch to space
- Imaging X-Ray Polarimetry Explorer Fall 2021: NASA's <u>IXPE</u> mission to discover hidden astronomical objects in the universe launches from Florida



- SpaceX CRS-23 Fall 2021: Commercial <u>resupply services</u> mission to space station from Florida
- Lucy Oct 16: NASA's Lucy mission to study the Trojan asteroids of Jupiter will launch from Florida
- SpaceX Crew-3 No earlier than Oct. 23: <u>Crew-3</u> will launch to station from Florida
- SpaceX Crew-2 Return No Earlier than Oct. 31: Crew-2 returns to Earth
- Webb Telescope (Launch Readiness Date) Oct. 31: NASA's <u>James Webb Space</u> <u>Telescope</u> to help answer questions about our cosmic origins launches from French Guiana
- **DART Nov. 24:** Window opens to launch Double Asteroid Redirection Test from California, NASA's first flight demonstration for planetary defense
- Webb Telescope November/December: The <u>James Webb Space</u>
   <u>Telescope</u> completes mission deployments/arrives in its L2 (second Lagrange Point)
   orbit about 29 days after launch
- Artemis I November: NASA reviewing launch date for <u>first integrated flight test</u> of the uncrewed Space Launch System rocket and Orion spacecraft launches on a multi-week mission around the Moon
- **Orion splashdown:** NASA's <u>Orion</u> spacecraft splashes down on Earth following a multiweek mission around the Moon
- Geostationary Operational Environmental Satellite-T December: NASA and NOAA's latest weather satellite, <u>GOES-T</u>, launches from Florida
- Astrobotic's CLPS Flight Late 2021: Suite of robotic NASA payloads sent to the lunar surface as part of a <u>Commercial Lunar Payload Services</u> delivery. Landing takes place in the following weeks
- Boeing's Crew Flight Test Under review pending OFT-2: Boeing's CFT earliest possible launch to space station from Florida
- Boeing Starliner-1 Under review pending outcome of earlier flight tests: Launch date for first operational Boeing commercial crew launch to space station from Florida
- Astronaut Candidates 2021: NASA will announce selections for the next class
   of <u>astronaut candidates</u> to begin training
- Intuitive Machines' CLPS Flight Early 2022: Suite of robotic NASA payloads sent lunar surface as part of a <u>Commercial Lunar Payload Services</u> delivery. Landing takes place in the following weeks

## AGENCY COMMUNICATION THEME PRIORITIES

For full key points and other products for all themes, visit: <u>https://communications.nasa.gov</u>. **Earth** 

NASA uses the vantage point of space to understand and explore our home planet, improve lives and safeguard our future.

Tagline: Your Home. Our Mission.

## **Flight**

NASA explores new technologies to make aircraft quieter and faster, get you gate-to-gate safely and on time, and transform aviation into a new economic engine at all altitudes. Tagline: NASA is With You When You Fly.

#### Humans in Space

NASA leads human space exploration in low-Earth orbit with commercial and international



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partners to enable missions to the Moon and Mars. International Space Station missions are a catalyst for economic development and the advancement of scientific knowledge and new technologies that improve our lives.

Tagline: Leading Discovery, Improving Life on Earth.

#### Moon to Mars

NASA is leading a sustainable return to the Moon with commercial and international partners to expand human presence in space and bring back new knowledge and opportunities. **Tagline: Moon Lights the Way.** 

#### Solar System & Beyond

NASA is exploring our Solar System and beyond, uncovering worlds, stars, and cosmic mysteries near and far with our powerful fleet of space and ground-based missions. Tagline: **Discovering the Secrets of the Universe.** 

### Space Tech

NASA technologies advance capabilities for space exploration, promote America's global leadership in innovation and transform the world around us. Tagline: **Technology Drives Exploration.** 

-end-

# [code-I] 6/7, Articles of Interest

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Sender:	code-l-bounces@lists.hq.nasa.gov
Sent:	June 7, 2021 8:23:06 AM EDT
Received:	June 7, 2021 8:23:19 AM EDT
Attachments:	ATT00001.txt

#### Articles of Interest

1. What's Happening in Space Policy June 6-12, 2021

2. Nelson, Rogozin Agree to Further Talks

3.Report: NASA Investigating UFO Sightings, Agency Chief Says

4. NASA Chief Bill Nelson Optimistic About Space Exploration as Private Sector, Government Combine Efforts

Spacepolicy Online

June 6, 2021 11:50 pm ET

WHAT'S HAPPENING IN SPACE POLICY JUNE 6-12, 2021

By Marcia Smith

Here is SpacePolicyOnline.com's list of space policy events for the week of June 6-12, 2021 and any insight we can offer about them. The Senate is in session this week. In the House, it is a "committee work week" where committees meet virtually and the House meets only in pro forma sessions.

#### During the Week

The Senate is scheduled to vote on S. 1260 on Tuesday. That's the bill that contains, among many other things, the 2021 NASA Authorization Act and the SPACE Act (re space situational awareness). Although amendments to the NASA section have been introduced, none has been adopted. At this point the NASA and SPACE text remain the same as when the bill was brought up for consideration by the Senate. Remember thatchanges were madebetween

the time it was approved by the Senate Commerce Committee and when it reached the floor, notably to the Human Landing System (HLS) section, but that's where it stands at the moment — more than one HLS contractor required, but no changes to the existing contract with SpaceX.

The Senate Appropriations Committee's Defense Subcommittee (SAC-D) will have a hearing on the FY2022 budget request for the Air Force and the Space Force on Tuesday. Acting Secretary of the Air Force John Roth, Air Force Chief of Staff Gen. C.Q. Brown and Space Force Chief of Space Operations Gen. Jay Raymond will be at the witness table. TheSpace Force FY2022 requestcalls for a \$2 billion increase, to \$17.5 billion, although half of the increase is due to transfers from other services including the Navy's MUOS communications satellite program and the Army's Wide-Band Enterprise Satcom system. It's important to remember there is other money in the DOD budget for space not reflected in the Space Force budget, such as the \$809 million request for the Space Development Agency (SDA). SDA is still part of the Office of the Under Secretary of Defense for Research and Engineering.

The Senate Armed Services Committee (SASC) will take a look at the entire DOD FY2022 budget request on Thursday with Secretary of Defense Lloyd Austin, Chairman of the Joint Chiefs of Staff Gen. Mark Milley, and DOD Comptroller Michael McCord.

SASC has a hearing on Tuesday as well that could touch on space — U.S. Strategic Competition with China. We don't recognize any of witnesses as being among the regular set of commentators on China's space activities, but with all the talk about Chinese ASATs, Chinese space stations, errant Chinese rocket stages, and China's lunar aspirations, it wouldn't be surprising if someone brings it up. The witnesses are Matt Pottinger (Stanford, and former deputy National Security Advisor to President Trump), Evan Medeiros (Georgetown, formerly on the staff of President Obama's National Security Council), Sheena Chestnut Greitens (UT-Austin), and Bonnie Glaser (German Marshall Fund of the United States).

NASA's Small Bodies Assessment Group (SBAG) meets tomorrow (Monday) and Tuesday. Lindley Johnson, head of NASA's Planetary Defense Coordination Office (PDCO) will give an update at 12:00 pm ET. PDCO's Double Asteroid Redirection Test (DART) is getting ready for launch this November and the FY2022 budget request has a nice plus-up for the next PDCO flight project, the Near Earth Object Surveyor Mission. NEO Surveyor will search for asteroids from a vantage point in space where it can see the entire universe instead of a narrow corridor when looking from the surface of Earth. That will accelerate the ability to identify 90 percent of asteroids 140 kilometers or more in diameter as directed by Congress. The project, formerly called NEOCam, has been in pre-Phase A and Phase A for quite a number of years and just had its Key Decision Point-B (KDP-B) review that would allow it to proceed into Phase B. A NASA spokesperson tells us the project will be "notified of the outcome in the coming weeks." Perhaps Johnson will have news tomorrow. If KDP-B went well and future reviews do too, and it gets the requested funding, launch would be in FY 2026.

Those and other events we know about as of Sunday morning are shown below. Check back throughout the week for others we learn about later and add to ourCalendar, or changes to these.

Monday-Tuesday, June 7-8

• NASA Small Bodies Assessment Group (SBAG), virtual

Monday-Friday, June 7-11 (continued from last week)

• Legal Subcommittee of the U.N. Committee of Peaceful Uses of Outer Space (COPUOS), virtual

Tuesday, June 8

• SASC Hearing on U.S. Strategic Competition with China, G-50 Dirksen Senate Office Building, 9:30 am ET (webcast)

• Natl Acad Committee on Increasing Diversity and Inclusion in the Leadership of Competed Space Missions, virtual, open sessions 2:00-3:45 pm ET

• Senate Appropriations Defense Subcommittee Hearing on FY2022 Budget Request for the Air Force and Space Force, 192 Dirksen Senate Office Building, 2:00 pm ET (webcast)

• UFOs and National Security(Washington Post Live), virtual, 3:30 pm ET

Tuesday-Wednesday, June 8-9

- Conversations for the Future: Space Logistics(Foundation for the Future), virtual
- Military Space USA(SMi Group), virtual

Wednesday, June 9

- Women in Space Series: Future of Space Architecture(Space Foundation), virtual, 1:00 pm ET
- STA Webinar with JPL Director Michael Watkins, virtual, 2:00 pm ET (invitation only)

#### Thursday, June 10

- SASC Hearing on DOD's FY2022 Budget Request, G-50 Dirksen Senate Office Building, 9:30 am ET (webcast)
- Keeping the Space Workforce Strong(Aerospace Corp), virtual, 1:00 pm ET

• Advanced Financing Options for Large Scale Space Infrastructure and Habitat Projects (Beyond Earth Institute), virtual, 2:00 pm ET

Spacepolicy Online

June 5, 2021 8:06 am ET

#### NELSON, ROGOZIN AGREE TO FURTHER TALKS

By Marcia Smith

NASA Administrator Bill Nelson and his Russian counterpart, Dmitry Rogozin, held their first telephone conversation today to discuss future U.S.-Russian space cooperation. Official statements from the two sides offered little detail, but painted a pleasant picture paving the way for future consultations, although Rogozin pointed to two stumbling blocks.

Nelson revealed on Wednesday that he would be meeting with Rogozin, Director General of Russia's space state corporation Roscosmos, telephonically today.

NASA is eager to confirm that Russia will remain a partner in the International Space Station (ISS). Some Russian officials have been saying Russia will terminate its participation in 2025 when the current agreement ends. Russia's actions — like the scheduled launch of a new science module next month — suggest it plans to stay, but no extension has been negotiated yet.

In a statement, NASA called the meeting "productive" and Roscosmos similarly sounded a friendly tone. However,

Rogozin also laid out what he views as two stumbling blocks: existing U.S. sanctions on Russian aerospace companies and a lack of official U.S. information about future plans for ISS.

At the same time, the head of Roscosmos put before his interlocutor a number of questions previously initiated by the American side, which significantly complicate interaction. First of all, we are talking about the sanctions imposed by the American administration against the enterprises of the Russian space industry, and the absence in Roscosmos of official information from American partners about plans for the management and further use of the ISS. — Roscosmos

Rogozin himself is under U.S. sanctions because of the role he played in Russia's 2014 annexation of Crimea. Rogozin was Russia's Deputy Prime Minister in charge of the defense and aerospace sectors at the time. The United States has levied a number of sanctions against Russian individuals and entities because of Crimea and other actions taken by the Russian government, most recently on April 15 because of cyber attacks.

As for the lack of official U.S. information on the future of ISS, all the partners — Russia, Europe, Canada, and Japan — are waiting for the United States to formally begin discussions on extending the Intergovernmental Agreement (IGA). By law the United States is committed to operating the space station through "at least 2024." Efforts in Congress to extend that date to 2028 or 2030 have fallen short because a new NASA authorization bill has not made it through the legislative gauntlet. NASA's intentions are well known — to transition off ISS to new commercial space facilities built and operated by the private sector where NASA would be just one of many customers — but the timeline remains unclear.

Nelson and Rogozin agreed to resume their talks at the International Astronautical Federation's Global Space Exploration Conference (GLEX) later this month. The theme is celebration of the 60th anniversary of Soviet cosmonaut Yuri Gagarin becoming the first human in space.

GLEX will take place in-person in St. Petersburg, Russia although some officials, including Nelson, will participate virtually. He will be on a June 15 panel with Rogozin and space agency leaders from Europe, Canada, Italy, UAE, Norway, South Africa, and Turkey although any bilateral discussions would take place separately and in private. Rogozin already is planning side meetings with various countries to discuss potential cooperation in a Russian-Chinese International Scientific Lunar Station.

The next day, President Joe Biden and Russian President Vladimir Putin will hold a summit in Geneva, Switzerland. Nelson said on Wednesday that space cooperation may come up at that meeting, too.

SPACE.com

June 5, 2021

Report: NASA investigating UFO sightings, agency chief says

ByMike Wall

NASA is now on the perplexingUFOcase.

NASA chief Bill Nelson, who assumed his post just last month, has asked agency researchers to look into thespate of UFO sightingsthat U.S. Navy pilots have reported over the past two decades, CNN reported.

"Now that I'm here at NASA, I've turned to our scientists and I've said, "Would you, looking at it from a scientific standpoint, see if you can determine [what these objects are], so that we can have a better idea?"Nelson told CNN's Rachel Cranein an interview that the network posted online Friday (June 4).

"The bottom line is, we want to know," he added. "And that's what we're trying to do."

#### PLAY SOUND

News of the UFO encounters broke in late 2017, when The New York Times and Politicoreported that Navy pilots had repeatedly spotted strange objects performing maneuvers that were far more advanced than anything their own jets could do.

These stories also revealed that, in 2007, the U.S. Department of Defense created the Advanced Aerospace Threat Identification Program (AATIP) to investigate sightings of UFOs — or UAPs ("unidentified aerial phenomena"), as the military recently rebranded them. AATIP was officially phased out in 2012, but the Pentagon stood up asuccessor task force last summer.

And the drive to get to the bottom of the UFO mystery has continued to grow. In December 2020, Sen. Marco Rubio (R-Fla.) — at the time the chair of the Senate's intelligence committee — asked the Pentagon and the U.S. director of national intelligence to deliver an unclassified report about the UFO sightings to Congress within six months.

#### PLAY SOUND

"I want us to take it seriously and have a process to take it seriously," Rubio told reporter Bill Whitaker during an interview that aired last month on theCBS news program "60 Minutes,"stressing that any unknown object spotted in U.S. airspace could be a threat to national security.

"I want us to have a process to analyze the data every time it comes in — that there be a place where this is cataloged and constantly analyzed until we get some answers," Rubio added. "Maybe it has a very simple answer. Maybe it doesn't."

The six-month deadline is almost up. And we've already gotten a sneak peak at the investigation's findings, thanks to The New York Times, which talked to sources familiar with it. We shouldn't expect a blockbuster announcement, according to the Times story; its headline is "U.S. finds no evidence of alien technology in flying objects, but can't rule it out, either."

#### Fox News

June 5, 2021

NASA Chief Bill Nelson Optimistic About Space Exploration as Private Sector, Government Combine Efforts

#### By Julia Musto

With a storied career in service – both inpoliticsand in theU.S. Army– and experience as a payload specialist, newly appointedNASAAdministrator Bill Nelson is in a unique position to lead.

In his first month in the role, he is pushing what he says is one of the most ambitious and aggressivesciencebudgetsin agency history, making strides in exploration with missions both inspaceand onEarth.

TheWhite House's spending proposal to Congressincluded a request of more than \$24.8 billion for NASA in the 2022 fiscal year, with a9% funding increase to its science division.

In an interview with Fox News on Thursday, Nelson said that the introduction of "highly sophisticated instruments" like thethree-dimensional climate modelingEarth Observatory System would "go beyond justweather" for the betterment of

the planet.

In addition, the former Democratic U.S. senator fromFloridatouted advancements incommercial spaceflight, noting that the way NASA operates has "already changed" because of companies likeElon Musk'sSpaceX andJeff Bezos'Blue Origin.

"What we found is the commercial activity and low Earth orbit has been substantial and it has been very successful," he said. "The delivery of cargo and crew where NASA gives a fixed price contract – no cost overruns – to a commercial company to deliver, in this case, cargo and/or crew to theInternational Space Station, has been extremely successful and safe, I might add."

Now, the 78-year-old says, the question is regarding what the role is for commercial companies other than the relationship the organizations have "always had" with NASA: development,techand research under a NASA spearheaded program.

Nelson pointed out that the highly-anticipatedArtemis Program's human lunar lander demonstrationmarked an important step in the evolution of the relationship between NASA and commercial companies like SpaceX.

In April, SpaceX was awarded thecoveted \$2.89 billion contractfor the development of the first commercial human lander that will land the first woman and first person of color on the moon in 2024.

However, NASAlater suspended the contractafter commercial rivals Blue Origin and Dynetics – which were also in the running – filed protests over the award.

The Government Accountability Office (GAO) has opened an investigation into the issue that isslated to conclude by Aug. 4.

That said, the administrator noted that people have "been energized by what they see," spotlightingSpaceX launches to low Earth orbit.

"People have really been amazed at what the commercial sector has done and make it cheaper for NASA. Because, these are contracts that are negotiated and they are a fixed price," he said.

While progress has been made in the commercial sector by partnering with NASA, billionaire leaders like Musk and Bezos have their own ideas as well.

Recently, Musk has told reporters about his goal to make the human racea "multi-planetary species."

When asked if there was weight to Musk's idea, Nelson did not mention the Teslaco-founder by name. Instead, he made reference to the agency'supcoming telescope project: thought to be a successor to the beloved Hubble Space Telescope.

"At the end of October, we're going to put up the next space telescope called James Webb. And, it is going to peer back in time – now, you won't believe the number, but this is true – 13.35 billion years. And, it's going to capture the light shortly after the Big Bang. And, in cosmic terms, that's about 150 million years after the Big Bang," he said.

"In other words, it's hard for me to think that this cosmos is that big. There are so many worlds andsunsand solar systems and galaxies that we have never discovered. Is there a circumstance elsewhere in a cosmos that big that there's another sun and another Earth revolving around that sun?" asked the administrator. "The possibilities are limitless."

"And so, as we continue to expand out, not only with our telescopes, not only listening for any sign of intelligent message, not only with human exploration further out added to our robotic exploration, this is fulfilling our destiny as an American people. Our character, in our DNA, is that we are always pressing a frontier," said Nelson. "And, that's what makes it so exciting to be at this agency and I suspect that's why this agency is considered the most popular federal government agency or department that there is."

With the promise of fantastic and wonderful mysteries on the metaphorical horizon, the future of exploration lies at NASA and in Nelson's hands.

But, it's also very much a team effort.

In many ways, the International Space Station (ISS) has served as a reminder of that endeavor.

However, Earthbound political posturing has recently impacted the zero-gravity "Switzerland."

Russianofficials said the country wouldwithdraw from participation at the ISS in 2025, shortly after announcing Roscosmos would partner withCNSA (China National Space Administration) to construct alunarresearch facility.

CNSA has already sent up parts for its ownpermanent station- and its debris made a dangerous, uncontrolled reentry in May.

Addressing concerns about international competition, Nelson told Fox News that international cooperation had "fueled a lot of activity."

"We have over 18 countries that are participating with us on the International Space Station. Russia built the station with us. I want Russia to continue what has been an incredible cooperation in space between two countries that, on the ground, are often butting heads," he said, adding that he hopes space will "continue to be the venue" for international cooperation with "someone who otherwise is one of our competitors and whose government does not necessarily get along with our government."

In that same vein, the administrator asserted that his agency is "the opportunity for politically partisan warring factions" in the U.S. to "come together and cooperate."

"You have seen, when it comes to NASA, most [Republicans] and most [Democrats] love NASA. And, they understand it's not only a bipartisan agency but it really is nonpartisan," he said. "Why did my confirmation go through so quickly? Indeed, everybody loves NASA."

"And so, what I see is this little agency can be one of the beacons of how we can cooperate in order to get something done, which ought to be a pretty good example to the rest of government," he concluded. "You better start cooperating."

## Attachment

## 1. ATT00001.txt

Type:text/plainSize:145 bytes

Attachment #1 ATT00001.txt code-I mailing list code-I@lists.hq.nasa.gov https://lists.hq.nasa.gov/mailman/listinfo/code-I

## Daily Report for Tuesday, June 22

From:	Potter, Sean (HQ-NA020) <sean.potter@nasa.gov></sean.potter@nasa.gov>
Sent:	June 22, 2021 8:00:34 AM EDT
Received:	June 22, 2021 8:01:07 AM EDT
Attachments:	DAILY REPORT 06-22-2021.docx

Good morning.

Attached and below is today's Communications Daily Report.

Thank you,

Sean Potter

NASA Communications Daily Report

Tuesday, June 22

Activities

·12:30 to 1:30 pm - NBC interview on NASA's search for life with Planetary Sciences Division Director Lori Glaze

oNBC's Tom Costello will interview Lori Glaze on NASA's ongoing work and research in the search for life beyond our own planet.

·3pm – NASA Administrator Bill Nelson live interview with Newsmax on vision for NASA

Aviation Week interviews with Webb experts

o4:30 pm – Sandra Irish, Webb lead structures engineer; Begoña Vila, Webb instrument systems engineer; Bill Ochs, Webb project manager at Goddard; Scott Willoughby, Webb program manager at Northrop Grumman interview with Irene Klotz of Aviation Week at Northrop Grumman

o5 to 6 pm - Aviation Week interview of Webb team members Scott Willoughby and Bill Ochs

·7 to 8 pm - Virtual Tour: Space Environments Complex at Glenn

oVirtual tour followed by live Q&A with expert for registered guests. The SEC is home to the world's largest and most powerful Space Simulation Vacuum Chamber, which measures 100 ft. in diameter by 122 ft. high. It also boasts the Reverberant Acoustic Test Facility, which can simulate the noise of a spacecraft launch up to 163 decibels; and the Mechanical Vibration Facility, the world's most powerful spacecraft shaker system, which subjects test articles to the rigorous conditions of launch.

Deutsche Welle interview with Dr. Ravi Kumar Kopparapu of Goddard for story on the UFO/UAP report.

·External Proctor & Gamble media release on NASA Space Act Agreement

Webb Launch Readiness Exercise #4 concludes at the Space Telescope Science Institute in Baltimore

Astronaut Jessica Meir for Emory University and Children's Healthcare of Atlanta

oResults of SpaceX's 20th Resupply Mission Research "How Growing Cardiac Stem Cells in Space Can Benefit our Cardiac Kids" in Atlanta.

Astronaut Kate Rubins with Fox 40 Sacramento on her recent mission to the space station

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On Air

·No new programming scheduled

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Social Media ActivitY

Agency

-Live coverage of Administrator Nelson's testimony before the House Science Committee on NASA's FY2022 Budget will air beginning at 10 a.m. EDT. Programming will air on NASA TV, the NASA App, nasa.gov/live and will be promoted on flagship social media accounts.

•Women@NASA posts with flagship amplification to commemorate science fiction author Octavia E. Butler's birthday. In March, NASA named the landing site of the Perseverance rover "Octavia E. Butler Landing," after the author.

Solar System and Beyond

-Flagship social media accounts will amplify posts for the Ask an Astrobiologist live show featuring Goddard scientist Heather Graham. The program will stream live at 1 p.m. EDT to the NASA Astrobiology Facebook page.

Other

NASA Knowledge: The Golden Record in English / Johnson

HQ Products

Release

·[TENTATIVE] RFI Public Meeting Registration

oInformation on how to register for the June 29 Mission Equity RFI event

Media Advisory

·NASA to Air Third Spacewalk to Install New Station Solar Arrays

Northrop Grumman CRS-15 departure coverage advisory

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·[TENTATIVE] NASA Extends Cyclone Global Navigation Satellite System Mission Contract (notifications complete; held from Monday)

-4 pm - Contract Mechanical Integration Services and Technologies (MIST) II contract (held from Monday)

Center Products

Blog Post

·10 am - Artemis I LVSA Foaming and Integration / Kennedy

oBlog post on Artemis I Launch Vehicle Stage Adapter (LVSA) will be mated atop the core stage upon completion of thermal protection system (TPS) foaming.

·2 pm - Ingenuity Flight 8 Recap / JPL

oOperations lead Teddy Tzanetos recaps the flight from Sunday, June 20.

Image/Video

·UTM close-out image feature / Ames

oA multi-image feature marks the close-out of the Unmanned Aircraft Systems Traffic Management project, or UTM. One photo is featured from each year of testing for the four technical capability levels achieved.

Web Articles

·10 am - EPSCoR Feature / Kennedy

oFeature highlighting NASA's Established Program to Stimulate Competitive Research program with an overview of two of the recently funded projects.

-1:30 pm -- A Perseverance Scientist's Favorite Image from Jezero Crater / JPL

oAs part of an occasional series, a Perseverance scientist offers details on her favorite image of Jezero Crater. First up is an image of a feature called Delta Scarp.

## Attachment

## 1. DAILY REPORT 06-22-2021.docx

Type:application/vnd.openxmlformats-officedocument.wordprocessingml.documentSize:44 KB (45,747 bytes)
# Attachment #1 DAILY REPORT 06-22-2021.docx

# **Original view**

3 pages (displayed on pages 6 to 8)

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- Astronaut Kate Rubins with Fox 40 Sacramento on her recent mission to the space station

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# Daily Report for Tuesday, June 29

	From:	Potter, Sean (HQ-NA020) <sean.potter@nasa.gov></sean.potter@nasa.gov>	
	Sent:	June 29, 2021 7:53:23 AM EDT	
	Attachments:	DAILY REPORT 06-29-2021 docx	
	Good morning.		
	Attached and below is today's Communications Daily Report.		
	Thank you,		
	Sean Potter		
NASA Communications Daily Report			
Tuesday, June 29			
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·9 am to 1 pm – CBS Sunday Morning News Interview at JPL on Drought in West			
oThe interview will be with hydrologist JT Reager.			
·10:30 am – Sen. Nelson Interview with Bloomberg TV on commercialization			
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	·12:25 pm – Northrop Grumn TV begins at 12 pm.	nan CRS-15 Cygnus departure from International Space Station; live coverage on NASA	
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#### Webb presentations at the European Astronomical Society

Anniversary: Launch of first nuclear powered satellite (Transit 4A) (1961)

Social Media Activity

Agency

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-Flagship social media accounts will share communications products for the conclusion of the Purposeful Passengers – Name the Artemis Moonikin Challenge. Products include a news release and a Tumblr post.

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·Flagship will amplify Space Tech social media products surrounding the newest edition of NASA's Software catalog.

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HQ Products

Release

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oNASA's computational innovations are readily available for applications beyond space, including benefiting our home planet. The agency's latest software catalog has dozens of new codes available for free download.

·Public Names 'Moonikin' Flying Around Moon on NASA's Artemis I Mission

Web Article

·9 am - After 60 Years, Nuclear Power for Spaceflight is Still Tried and True

oSix decades after the launch of the first nuclear-powered space mission, Transit IV-A, NASA is embarking on a bold future of human exploration and scientific discovery. This future builds on a proud history of safely launching and operating nuclear-powered missions in space.

-11 am – Abnormally High Alcohol, Mystery Heat Source Detected on Comet Wirtanen

oA study using Keck Observatory data finds that Comet 46P/Wirtanen was releasing an unusual amount of alcohol as it made its historic flyby of Earth two and a half years ago.

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olngenuity chief pilot Havard Grip looks ahead at what could be an ambitious next flight.

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oScientists closer to settling the question: Why do some instruments detect methane on Mars while others don't?

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oEvergreen webpage about the Payload Accelerator for CubeSat Endeavors, or PACE, initiative's series of missions. The timing of the feature is tied to the launch of the first mission, PACE-1, on SpaceX's Transporter-2 rideshare mission.

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Type:application/vnd.openxmlformats-officedocument.wordprocessingml.documentSize:45 KB (46,405 bytes)

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# FW: FIRST UPDATE - UFO Report

From:	Etkind, Marc R. (HQ-NA000) <marc.r.etkind@nasa.gov></marc.r.etkind@nasa.gov>
To:	McGuinness, Jackie (HQ-NA000) <jackie.mcguinness@nasa.gov>, Brown, Alicia N. (HQ-VA000) <alicia.n.brown@nasa.gov>, Gulley, Bryan F. (HQ-NA000) <bryan.f.gulley@nasa.gov>, Quinn, Susie Perez (HQ-AH000) <susie.p.quinn@nasa.gov>, Lal, Bhavya (HQ-AA000) <bhavya.lal@nasa.gov>, Dalton, Bale (HQ-AH000) <bale.dalton@nasa.gov></bale.dalton@nasa.gov></bhavya.lal@nasa.gov></susie.p.quinn@nasa.gov></bryan.f.gulley@nasa.gov></alicia.n.brown@nasa.gov></jackie.mcguinness@nasa.gov>
Sent:	June 25, 2021 4:59:55 PM EDT
Received:	June 25, 2021 4:59:57 PM EDT

From: "Jacobs, Bob (HQ-NA000)" <bob.jacobs@nasa.gov>

Date: Friday, June 25, 2021 at 4:58 PM

To: "Etkind, Marc R. (HQ-NA000)" <marc.r.etkind@nasa.gov>, "Stephenson, Johnny F. (MSFC-NA000)" <johnny.f.stephenson@nasa.gov>, "Beutel, Allard (HQ-NA020)" <allard.beutel@nasa.gov>, "Thompson, Tabatha T. (HQ-NA020)" <tabatha.t.thompson@nasa.gov>, Brittany Brown <brittany.a.brown@nasa.gov> Subject: FIRST UPDATE - UFO Report

https://www.dni.gov/files/ODNI/documents/assessments/Prelimary-Assessment-UAP-20210625.pdf <https://gcc02.safelinks.protection.outlook.com/?url=https://www.dni.gov/files/ODNI/documents/assessments/Prelimar y-Assessment-UAP-

20210625.pdf&data=04|01|alicia.n.brown@nasa.gov|0c41a531b1154170ad7108d9381c2f5f|7005d45845be48ae8140 d43da96dd17b|0|0|637602515972503254|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJB Til6Ik1haWwiLCJXVCI6Mn0=|1000&sdata=k4uQeR/wnmo98KrzIggUCkuiwo7nYOD0FTzcPpzp4hQ=&reserved=0>

We can expect inquiries accordingly.

bj

# NASA INTERVIEW PREP DOCUMENT - as of 6-25-21 (internal distribution only)

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Sent:	June 25, 2021 11:43:30 PM EDT
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Attachments:	NASA INTERVIEW PREP DOCUMENT - as of 6-25-21.docx

Good evening, attached is the latest interview prep document.

The top item is new:

• Search for Life, Technosignatures, and UAP/UFOs

The updated items are:

- Hubble Space Telescope Issue
- Upcoming Events Public Dates section

-Allard

# Attachment

### 1. NASA INTERVIEW PREP DOCUMENT - as of 6-25-21.docx

Type:application/vnd.openxmlformats-officedocument.wordprocessingml.documentSize:56 KB (57,773 bytes)

# Attachment #1 NASA INTERVIEW PREP DOCUMENT - as of 6-25-21.docx

# **Original view**

12 pages (displayed on pages 4 to 15)



Opdated 6/25/21

#### NASA INTERVIEW PREP DOCUMENT

#### **RECENT HOT TOPICS**

#### Search for Life, Technosignatures, and UAP/UFOs

Public and media interest in the topic of UAP/UFO (Unidentified Aerial Phenomena /Unidentified Flying Objects) has seen an uptick in recent weeks following reports related to the Department of Defense's release of three unclassified U.S. Navy videos. An unclassified preliminary <u>report</u> from the Office of the Director of National Intelligence was released June 25, which is when we posted a NASA <u>article</u>

Upcoming Events Public Dates

Quick Reference

National Intelligence was released June 25, which is when we posted a NASA <u>article</u> on what the agency is doing to search for life beyond Earth. And below is our response to the public and media who call for NASA comment:

 One of NASA's key goals is the search for life in the universe. To date, NASA has yet to find any credible evidence of extraterrestrial life; however, NASA is exploring the solar system and beyond to help us answer fundamental questions, including whether we are alone in the universe. We lead the U.S. government's search for extraterrestrial life, be it close to home, on the planets or moons of our solar system, or deeper into space.

NASA does not actively search for UAPs and the lack of robust data is the central problem for scientific study of UAPs and to determine whether they are natural or human-made phenomena – there is no current data to support that UAPs or UFOs are evidence of alien technologies.

#### Hubble Space Telescope Issue

Starting on June 16, NASA has provided status <u>updates</u> that the Hubble Space Telescope operations team has been working since June 13 to resolve an issue with the observatory's payload computer.

• The Hubble operations team continues working to solve the payload computer issue onboard the Hubble Space Telescope. The team is working to collect all the data available to them to isolate the problem and determine the best path forward for bringing the computer back to operations. At this time, there is no definitive timeline for bringing the computer back online. However, the team has multiple options available to them and are working to find the best solution to return the telescope to science operations as soon as possible. Launched in 1990, Hubble has contributed greatly to our understanding of the universe over the past 30 years.

### Senate Confirms Pam Melroy as NASA's Deputy Administrator

On June 17, the U.S. Senate confirmed Pam Melroy to be NASA's next Deputy Administrator. The following <u>statements</u> were issued following confirmation:

 "It's an honor to be confirmed by the Senate to serve as NASA Deputy Administrator, and I am humbled by President Biden and Vice President Harris' confidence in me," Melroy said. "I look forward to returning to the NASA family and working with Administrator Nelson to ensure the United States continues to lead in space and beyond – exploring the wonders of the universe, expanding the Earth science research critical to combatting climate change, unlocking scientific discoveries that will change the world as we know it, and inspiring the next generation of discoverers and dreamers."



• "Pam is a pioneer and veteran of NASA, and will be an outstanding leader as we venture farther out to the stars," said NASA Administrator Bill Nelson. "We certainly are lucky to have her on board, and I look forward to leading NASA with her as a team."

#### **Mission Equity**

On June 15, NASA announced a new effort called <u>Mission Equity</u> that included issuing a Request for Information (RFI) seeking public input to broaden access to the agency.

- NASA is launching Mission Equity, a comprehensive effort to assess expansion and modification of agency programs, procurements, grants, and policies, and examine what potential barriers and challenges exist for communities that are historically underrepresented and underserved.
- NASA Administrator Bill Nelson said of Mission Equity:
  - "NASA is a 21st century agency with 22nd century goals. To be successful, it's critical that NASA takes a comprehensive approach to address the challenges to equity we see today. The agency's new Mission Equity is a bold and necessary challenge for NASA to ensure our programs are accessible to all Americans and, especially, those living in historically underserved communities across the country. Because when NASA opens doors to talent previously left untapped, the universe is the limit."
- NASA issued a <u>request for information</u> (RFI) on June 15, entitled Advancing Racial Equity and Support for Underserved Communities in NASA Programs, Contracts and Grants. To this RFI, the agency is seeking public feedback as it conducts a thorough review of its programs, practices, and policies to assess:
  - Potential barriers that underserved and underrepresented communities and individuals may face in agency procurement, contract, and grant opportunities.
  - Whether new policies, regulations, or guidance may be necessary to advance equity and opportunities in agency actions and programs.
  - How agency resources and tools can assist in enhancing equity, including advancing environmental justice.
- Areas in which the agency would like to receive comments include:
  - o Diversity and Equal Opportunity at NASA and in the STEM Community
  - Opportunities for NASA to Leverage its Data, Expertise, and Missions to Help Underserved Communities
  - o Barriers/Gaps to Accessing Current NASA Grants, Programs, and Procurements
  - Engagement and Outreach with Organizations and Individuals from Underserved and Underrepresented Communities
- Underserved and underrepresented communities include: Black, Latino, and Indigenous and Native American persons, Asian Americans and Pacific Islanders and other persons of color; members of religious minorities; lesbian, gay, bisexual, transgender, and queer (LGBTQ+) persons; persons with disabilities; persons who live in rural areas; and persons otherwise adversely affected by persistent poverty or inequality.
- Through the RFI process, NASA hopes to initiate vibrant, meaningful, and ongoing dialogues that will help the agency build and improve current agency policies, practices, and programs. The deadline for public comments to this RFI is Monday, July 12, but we encourage submission of comments as soon as possible to enable early analysis and follow-up discussions. NASA will host a virtual public meeting soon, during which NASA officials will discuss the RFI and corresponding agency goals.



### NASA Administrator Statement on US Innovation and Competitiveness Act

NASA Administrator Bill Nelson released the following statement June 8 after the Senate passed the U.S. Innovation and Competitiveness Act:

• "The U.S. Innovation and Competitiveness Act, which includes the NASA authorization bill, is an investment in scientific research and technological innovation that will help ensure the U.S. continues to lead in space and sets us on a path to execute many landings on the Moon in this decade. I applaud the Senate passage of the bill and look forward to working with the House to see it passed into law."

# NASA Selects Two Missions to Venus

On June 2, NASA announced it has selected two new missions to Venus.

- NASA's two new missions to Earth's nearest planetary neighbor aim to understand how Venus became an inferno-like world when it has so many other characteristics similar to ours – and may have been the first habitable world in the solar system, complete with an ocean and Earth-like climate.
- The selected missions are:
  - DAVINCI+ (Deep Atmosphere Venus Investigation of Noble gases, Chemistry, and Imaging)
    - DAVINCI+ will measure the composition of Venus's atmosphere to understand how it formed and evolved, as well as determine whether the planet ever had an ocean.
    - The mission consists of a descent sphere that will plunge through the thick atmosphere, making precise measurements of noble gases and other elements to understand why Venus's atmosphere is a runaway hothouse compared the Earth's.
    - DAVINCI+ also will return the first high resolution pictures of the unique geological features on Venus known as "tesserae," which may be comparable to Earth's continents, suggesting that Venus has plate tectonics.
    - This would be the first U.S.-led, missions to Venus's atmosphere since 1978, and the results from DAVINCI+ could reshape our understanding of terrestrial planet formation in our solar system and beyond.
  - VERITAS (Venus Emissivity, Radio Science, InSAR, Topography, and Spectroscopy)
    - VERITAS will map Venus' surface to determine the planet's geologic history and understand why it developed so differently than Earth.
    - Orbiting Venus with a synthetic aperture radar, VERITAS will chart surface elevations over nearly the entire planet to create 3D reconstructions of topography and confirm whether processes such as plate tectonics and volcanism are still active on Venus.
    - VERITAS also will map infrared emissions from Venus' surface to map its rock-type, which is largely unknown, and determine whether active volcanoes are releasing water vapor into the atmosphere.
- In addition to the two missions, NASA selected a pair of technology demonstrations to fly along with them.



- VERITAS will host the <u>Deep Space Atomic Clock-2</u>, built by NASA's Jet Propulsion Laboratory and funded by NASA's Space Technology Mission Directorate. The ultra-precise clock signal generated with this technology will ultimately help enable autonomous spacecraft maneuvers and enhance radio science observations.
- DAVINCI+ will host the Compact Ultraviolet to Visible Imaging Spectrometer (CUVIS) built by NASA's Goddard Space Flight Center. CUVIS will make high resolution measurements of ultraviolet light using a new instrument based on freeform optics. These observations will be used to determine the nature of the unknown ultraviolet absorber in Venus's atmosphere that absorbs up to half the incoming solar energy.
- DAVINCI+ and VERITAS are the final selections from <u>four mission concepts</u> NASA's Discovery Program picked in February 2020 as part of the agency's Discovery 2019 competition. Following a competitive, peer-review process, the two missions were chosen based on their potential scientific value and the feasibility of their development plans.
- NASA is awarding approximately \$500 million per mission for development. Each is
  expected to launch between 2028 2030. The project teams now will work to finalize
  their requirements, designs, and development plans.

### Webb Telescope Reported Possible Launch Delay

During a June 1 ESA (European Space Agency) news conference, media asked about reported possible launch delays to NASA's James Webb Space Telescope. Below is our response to calls for comment:

• NASA's James Webb Space Telescope, which will be the premier observatory of the next decade, remains on schedule for a launch readiness date no earlier than Oct. 31, 2021.

Webb will ship to the launch site in August with little to no schedule margin. Launch processing will take two months. The observatory has completed all the postenvironmental testing deployments, and it's in its final integration and folding stages. Final stow, closeout, and pack and ship are imminent. We are working closely with ESA and Arianespace on establishing the launch date. We'll launch approximately four months after the first launch of the Ariane 5 this year, which is scheduled for late July. Webb has no launch date constraints, so it can launch almost any day of the year.

Webb will study every phase in the history of our universe, including the first luminous glows after the creation of the cosmos, the formation of solar systems capable of supporting life on planets like Earth, and the evolution of our own solar system.

#### Fiscal Year 2022 NASA Full Budget Proposal

On May 28, the Biden-Harris Administration released the full budget proposal for Fiscal Year 2022.

 President's Fiscal Year 2022 budget requests \$24.8 billion for NASA, an increase of more than 6% over what the agency received the previous year.

**Overarching Points** 



- This funding request demonstrates the president's commitment to NASA and the people across the agency and its partners who have worked so hard this past year under the most difficult circumstances and achieved unprecedented success.
- The NASA workforce and the American people should be encouraged by what they see in this budget request. It is an investment in our future, and it shows confidence in what this agency has to offer. We owe it to the president and the American people to be good and responsible stewards of every tax dollar invested in NASA.
- This budget request includes the strongest NASA budget ever for science, which will help address the climate crisis at home and abroad, as well as advance robotic missions that will pave the way for astronauts to explore the Moon and Mars.
- This is also the strongest budget for exploration since the Apollo program.
- This budget request will restore America's global standing, promote racial and economic equity, and drive economic growth.

Supports Human Exploration of the Moon, Mars, and Beyond

- The president's funding request increases funding for Artemis by \$350 million and gives us the resources to advance America's bipartisan Moon to Mars space exploration plan, agreed to by the Administration and Congress.
- This request keeps us on the path toward a regular cadence of Artemis missions with crew to the Moon by the middle of the decade.
- NASA's human landing system contract award, with the goal of a human demonstration mission to the lunar surface by 2024, is under protest.
- NASA is currently reviewing the overall Artemis timeline based on appropriations and expected budget, and outcome of the human landing system protest. We hope to provide an updated Artemis timeline later this year following conclusion of the protest.
- The FY2022 budget request assumes an Artemis I launch no earlier than November 2021, an Artemis II launch no earlier than September 2023, followed by Artemis III targeted for late 2024 and Artemis IV for late 2025. Landing the first woman and first person of color on the lunar surface as part of the Artemis program will promote equity – signaling to every American they too can see themselves among the stars.
- With NASA's Space Launch System rocket and Orion spacecraft, as well as U.S. commercial partnerships with the human landing system and Gateway lunar outpost, we will send astronauts to the Moon to test technologies and exploration practices that will make future missions more productive than ever before.
- This budget funds an upgraded Space Launch System, known as Block1B, that can deliver larger cargos to lunar orbit.
- Gateway, built with our commercial and international partners, is important to sustainable lunar operations.
  - The foundation of our lunar outpost is targeted to launch no earlier than November 2024, with additional modules from our international partners launching later.
- We are working day and night to reduce risks and overcome the challenges of long-term human exploration of the Moon and Mars.
- The budget funds early design work and planning for additional surface architecture necessary including the lunar terrain vehicle and surface habitats to ensure our astronauts can explore more of the Moon than ever before and stay for increasingly longer periods of time in deep space.



• NASA's Lunar Surface Innovation Initiative is advancing technologies to support mission operations on the Moon. This budget includes funding for the preliminary design of a fission surface power system that could power operations on the Moon and Mars.

#### Furthers Robotic Exploration of the Solar System and the Universe

- This funding request also furthers robotic exploration of the solar system and the universe.
- The budget provides more than \$650 million for the Mars Sample Return mission, the highest priority large mission in planetary science.
- It includes strong support for planetary defense, including the near-Earth objects (NEO) Surveyor mission to detect asteroids and comets that could potentially impact Earth.

#### Enhances Research and Development at NASA

- This funding request supports continued progress developing cutting-edge space technologies, transformative capabilities, and renewable energy, all of which feed the economy and create good paying American jobs.
- Investing in new technologies enhances NASA's missions and fosters the growing space economy.
- NASA routinely demonstrates new technologies, reducing overall risk and encouraging industry adoption. The budget includes \$500 million for technology demonstrations.
- It fully funds the On-orbit Servicing, Assembly, and Manufacturing 1 (OSAM-1) mission. Robotically refueling a satellite and manufacturing and assembling spacecraft parts inorbit will foster a more sustainable space economy.
- Launching next month, our Laser Communications Relay Demonstration will demonstrate a technology that can provide 10-100 times better data rates than commonly used radio frequency communications systems. In the coming years, we'll further refine laser communications technology for use in deep space.
- More than \$280 million would be directed toward small business innovation research and technology transfer. The increase of \$60 million will provide more money to small companies to research new ideas and develop innovative solutions to challenging problems.
- An investment in NASA and space infrastructure reaffirms our nation is the world's premier partner in space collaboration, and we will be for decades to come.
- We are investing in aviation to make our skies safer, our fuels cleaner, and to get you to your destination faster than ever before. This also includes investing in next-generation aeronautics research that will safely integrate automated aircraft systems with piloted airplanes.
  - This budget enhances American competitiveness in the global aviation industry including the first two flights of new X-57 and X-59 aircraft.
  - NASA aeronautics is leading transformation of the way people and goods are moved through Advanced Air Mobility (air taxis, drone cargo deliveries, etc.), an emerging market expected to be worth \$115 billion a year by 2035.
    - It will help safely deliver revolutionary aviation capabilities to previously underserved local, regional, intraregional, and urban areas. NASA investments today will spur the advancements of tomorrow.
- The budget provides a \$30 million increase to accelerate transformative science at the frontiers of biological and physical sciences research in space.



#### Advances Climate Science

- Climate change has increasing economic and national security impacts, and this budget increases investments in climate research and science programs.
- This funding increases our ability to better understand Earth and how it works as an integrated system, from our oceans to our atmosphere and how it all impacts our daily lives.
- NASA is developing the next-generation Earth System Observatory. NASA's new Earth System Observatory will provide the world with an unprecedented understanding of our Earth's climate system, arming us with next-generation data critical to mitigating climate change, and protecting our communities in the face of natural hazards.
  - The Earth System Observatory will help improve our understanding of extreme weather events and our decision making on climate resilience, adaptation, and mitigation. It will also inform decisions that ensure communities have the resources they need to build resilience prior to these crises.
- Research on zero-emissions aviation
  - NASA Aeronautics is partnering with industry, academia and other agencies through the Sustainable Flight National Partnership to accomplish the aviation community's aggressive climate change agenda. Through advanced vehicle technologies, efficient airline operations and sustainable aviation fuels, collectively NASA and our federal government and industry partners aim to reduce carbon emissions from aviation by half by 2050, compared to 2005, and achieve net-zero emissions by 2060.
- NASA continues to lead the development of new small spacecraft capabilities. For example, small platforms can enable distributed observations for climate science.

Builds a Diverse Future STEM Workforce

- This budget invests in the Artemis Generation. It requests funding for NASA's STEM engagement efforts for the first time in five years to inspire the next generation of scientists, engineers, mathematicians, and explorers by supporting the agency's STEM efforts.
- With this budget, NASA will increase funding for Space Grant and MUREP and will work with university and consortia partners to implement initiatives focused on diversity, equity and inclusion.
- NASA taps into the skills of a diverse group of partners and reaches new groups through our small business programs, academic partnerships, and prizes, challenges, and crowdsourcing activities.
- The Space Technology Mission Directorate is collaborating with OSTEM's Minority University Research and Education Project to offer research planning grants and incentivize partnerships between minority-serving institutions and small businesses, setting them up to apply to NASA opportunities.

Continues Research on the International Space Station

• The space station is a convergence of science, technology, and human innovation that demonstrates new technologies and enables research not possible on Earth. The space station remains the springboard to NASA's next great leap in exploration, including future human missions to the Moon and eventually to Mars.



- With continued support for the International Space Station and the Artemis program, the president welcomes the international community to join us as we push human exploration deeper into space.
- This budget supports early design maturation of multiple commercially owned and operated low-Earth orbit (LEO) destinations (free flyers) from which NASA, along with other customers, can purchase services and stimulate the growth of commercial activities in LEO.
- In addition to maintaining continuous U.S. access to a space station in LEO, these new and more cost-effective platforms will democratize access to space by lowering the barriers to entry for the next generation of researchers, technologists, and tourists.

#### Hurricanes and NASA

June 1 is the official start of hurricane season for the Atlantic Ocean.

- After 2020 brought a record number of named storms in 2020, NASA is once again prepared to help understand and monitor these storms from its unique vantage point of space.
- NASA develops and launches satellites for NOAA, which is the lead federal agency for forecasting hurricanes. But the science of hurricanes doesn't start – or end – with forecasting.
- Global warming is increasing the heat in the ocean basins and already making it more likely that storms will intensify faster and be stronger, a phenomenon NASA scientists continue to study deeply.
- With the challenge posed by climate change, NASA has never been more committed to innovation in Earth science research.
  - Our next-generation Earth System Observatory, announced on May 24, missions will help us understand extreme weather events and other climate-fueled hazards to inform the solutions of the future.
- NASA researchers and data also support U.S. stakeholders before, during and after storms make landfall.
  - Stages of NASA Data:
    - Pre-storm assessment (feed weather prediction and forecasting models)
    - Near-real-time assessment (identify potential impacts ahead of landfall)
    - Post-storm assessment (help identify needs for support after landfall)
      Data access and visualization
- The <u>NASA Disasters Mapping Portal</u> takes disaster-related data and puts it into understandable, usable formats real-time use and application with the goal to bridge the gap between science products and the people who can use the data to assist in preparedness, response, mitigation, and recovery.
  - After a hurricane makes landfall, NASA satellites are in prime position to identify impacts such as damage, flood depth and extent, power outages, rainfall accumulation, landslide risk, and even soil moisture.
  - That information helps local governments, the Army Corps of Engineers, and FEMA monitor infrastructure failures and disruptions, isolate contaminated water supplies, and identify hotspots for urgent response needs.
- NASA also does plenty of its own deep research on hurricanes and tropical cyclone dynamics. A few examples among many:



- NASA's Global Modeling and Assimilation Office is pioneering the use of ultra-high-resolution global weather and micro-climate models.
- The CPEX-AW airborne campaign planned in the Caribbean this August and September will pilot new technology to use LiDAR to better understand atmospheric winds and convective clouds in tropical storms.
- NASA's Jet Propulsion Laboratory (JPL) is studying the use of artificial intelligence/machine learning to improve hurricane prediction capabilities using NASA satellite data.

#### Webb Name Webb Telescope Name Statement

On May 7, Slate.com posted an <u>article</u> with the headline and sub-headline "The James Webb Space Telescope Hasn't Launched Yet. In One Way, It's Already a Relic. It will collect important data, but what does its name say about who it's for?" Below is our response to the public and media who call for comment:

 NASA is aware of concerns that have arisen about James E. Webb, and we are working with historians to examine his role in government. NASA named its next generation observatory, the James Webb Space Telescope, after its second administrator, who helped establish the Apollo Program that landed humans on the Moon. The agency made the naming decision in recognition of Webb's role in retaining an active science program at NASA in the agency's early years. Webb's work as administrator laid the groundwork for today's accomplishments, and science remains a critical part of NASA's work: to understand the universe, advance exploration, and inspire the next generation.

### **UPCOMING EVENTS PUBLIC DATES**

Below are the publicly listed dates of some high-profile activities/events/milestones in 2021 and 2022. Internal planning, target, and pre-decisional dates are not listed below as they're not official and public yet. The public dates listed are as specific as they can be, at this time. This list will be regularly updated, as appropriate. Text in red is newly updated public information:

- TROPICS Pathfinder Launch No earlier than June 29: Launch of a test satellite or Pathfinder on a rideshare on SpaceX Transporter 2 from Cape Canaveral Space Force Station, ahead of a constellation of six small satellites (launching in 2022) that will work together to provide near hourly updates of hurricanes and tropical cyclones
- **Boeing Orbital Flight Test-2 July 30 –** Boeing's uncrewed CST-100 Starliner OFT-2 (Orbital Flight Test-2) launch from Florida to the International Space Station
- Northrop Grumman CRS-16 July 2021: Commercial <u>resupply services</u> mission to space station from Virginia
- Landsat 9 September: NASA and U.S. Geological Survey launch latest Earth observation satellite, Landsat 9, from California
- Lucy Oct 16: NASA's Lucy mission to study the Trojan asteroids of Jupiter will launch from Florida
- SpaceX Crew-3 No Earlier than Oct. 31: Crew-3 will launch to station from Florida
- SpaceX Crew-2 Return Early to mid-November: Crew-2 returns to Earth
- Webb Telescope (Launch Readiness Date) Oct. 31: NASA's <u>James Webb Space</u> <u>Telescope</u> to help answer questions about our cosmic origins launches from French Guiana
- X-57 (tentative Oct. 31) Flight test for NASA's first all-electric plane, X-57, at Armstrong Flight Research Center



- **DART Nov. 24:** Window opens to launch Double Asteroid Redirection Test from California, NASA's first flight demonstration for planetary defense
- Webb Telescope November/December: The <u>James Webb Space</u>
   <u>Telescope</u> completes mission deployments/arrives in its L2 (second Lagrange Point)
   orbit about 29 days after launch
- Artemis I November: NASA reviewing launch date for <u>first integrated flight test</u> of the uncrewed Space Launch System rocket and Orion spacecraft launches on a multi-week mission around the Moon
- **Orion splashdown Late 2021:** NASA's <u>Orion</u> spacecraft splashes down on Earth following a multi-week mission around the Moon
- Geostationary Operational Environmental Satellite-T December: NASA and NOAA's latest weather satellite, <u>GOES-T</u>, launches from Florida
- SpaceX CRS-23 Fall 2021: Commercial <u>resupply services</u> mission to space station from Florida
- CAPSTONE Fall 2021: NASA <u>CubeSat</u> to validate new navigation technologies and verify dynamics in Gateway's planned orbit will launch to space
- Imaging X-Ray Polarimetry Explorer Fall 2021: NASA's <u>IXPE</u> mission to discover the secrets of black holes, pulsars, and other high-energy objects in the universe launches from Florida
- Boeing's Crew Flight Test Late 2021, under review pending OFT-2: Boeing's CFT earliest possible launch to space station from Florida
- Boeing Starliner-1 Under review pending earlier flight tests: Launch date for first operational Boeing commercial crew launch to space station from Florida
- Astronaut Candidates Late 2021: NASA will announce selections for the next class of <u>astronaut candidates</u> to begin training
- Laser Comm Under Review: NASA's Laser Communications Relay Demonstration to test optical communications launches from Florida
- Intuitive Machines' CLPS Flight Early 2022: Suite of robotic NASA payloads sent lunar surface as part of a <u>Commercial Lunar Payload Services</u> delivery. Landing takes place in the following weeks
- Astrobotic's CLPS Flight 2022: Suite of robotic NASA payloads sent to the lunar surface as part of a <u>Commercial Lunar Payload Services</u> delivery. Landing takes place in the following weeks.
- Artemis II Crew Announcement Early 2022: NASA will announce the astronauts that will fly on the first crewed flight of Orion spacecraft and Space Launch System rocket for the <u>Artemis II mission</u>.
- Webb Telescope Spring 2022: First science images from the <u>James Webb Space</u> <u>Telescope</u>, about six months after launch
- **TROPICS Launch Spring 2022:** Time-Resolved Observations of Precipitation structure and storm Intensity with a Constellation of Smallsats (TROPICS), a constellation of six CubeSats, will launch from Kwajalein Atoll in the Marshall Islands. The satellites will work together to provide near hourly updates of hurricanes and tropical cyclones
- The next crew rotation mission to the International Space Station after NASA's SpaceX Crew-3 is targeted for no earlier than mid-April 2022: The specific commercial crew partner's spacecraft and rocket will be determined at a later date



- X-59 QueSST First Flight (tentative June 1, 2022): The first flight of the X-59 Quiet SuperSonic Technology (QueSST) aircraft will take place out of Lockheed flight facilities in Palmdale, California
- **Psyche August 2022:** Window opens to launch <u>Psyche</u> from Florida, NASA's mission to study the metal-rich asteroid 16 Psyche.
- Surface Water and Ocean Topography (SWOT) Launch November 2022: Launch of SWOT to observe details of the ocean's surface topography, and measure how water bodies change over time, jointly developed by NASA and the Centre National d'Études Spatiales (CNES), with contributions from the U.K. Space Agency (UKSA) and the Canadian Space Agency (CSA)
- NISAR Launch (NASA + Indian Space Research Organization + synthetic aperture radars) – Late 2022: Joint mission between NASA and the Indian Space Research Organization to track subtle changes in Earth's surface, spot warning signs of imminent volcanic eruptions, help to monitor groundwater supplies, track the melt rate of ice sheets tied to sea level rise, and observe shifts in the distribution of vegetation around the world
- **PACE Launch (Plankton, Aerosol, Cloud, ocean Ecosystem) 2022:** PACE will advance the assessment of ocean health by measuring the distribution of phytoplankton, tiny plants and algae that sustain the marine food web
- **TEMPO launch (Tropospheric Emissions Monitoring of Pollution) 2022:** NASA's first Earth Venture Instrument mission will measure pollution of North America, from Mexico City to the Canadian oil sands, and from the Atlantic to the Pacific hourly and at high spatial resolution. TEMPO will be the first space-based instrument to monitor air pollutants hourly across the North American continent during daytime

### AGENCY COMMUNICATION THEME PRIORITIES

For full key points and other products for all themes, visit: <u>https://communications.nasa.gov</u>. **Earth** 

NASA uses the vantage point of space to understand and explore our home planet, improve lives and safeguard our future.

#### Tagline: Your Home. Our Mission.

### <u>Flight</u>

NASA explores new technologies to make aircraft greener and quieter, get you gate-to-gate safely and on time, and transform aviation into a new economic engine at all altitudes. Tagline: NASA is With You When You Fly.

#### Humans in Space

NASA leads human space exploration in low-Earth orbit with commercial and international partners to enable missions to the Moon and Mars. International Space Station missions are a catalyst for economic development and the advancement of scientific knowledge and new technologies that improve our lives.

Tagline: Leading Discovery, Improving Life on Earth.

#### Moon to Mars

NASA is leading a sustainable return to the Moon with commercial and international partners to expand human presence in space and bring back new knowledge and opportunities. **Tagline: Moon Lights the Way.** 



#### Solar System & Beyond

NASA is exploring our Solar System and beyond, uncovering worlds, stars, and cosmic mysteries near and far with our powerful fleet of space and ground-based missions. Tagline: **Discovering the Secrets of the Universe.** 

#### Space Tech

NASA technologies advance capabilities for space exploration, promote America's global leadership in innovation and transform the world around us. Tagline: **Technology Drives Exploration.** 

-end-

# [code-I] 6/28, Articles of Interest

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5.NASA Will Dismantle Two Test Sites at Toxic Santa Susana Field Lab Area				
6.Rescuers Stay Hopeful Abo	out Finding More Survivors in Rubble			
7.Opinion:Americans should	worry more about China than Russia. The new space race shows why.			
CQ Budget				
Jun. 28, 2021				
Dividing the budget pie				
House Democrats this week will lay out their plans for divvying up fiscal 2022 spending between defense and nondefense programs, the first step in what seems likely to be a protracted partisan standoff over appropriations.				
The Democratic-controlled Appropriations Committee will consider its dozen subcommittee allocations, known as 302(b)s, for the upcoming fiscal year's spending bills in a Tuesday markup (See Budget Bulletin below).				

The House has already blessed an overall topline figure just over \$1.5 trillion for the budget year starting Oct. 1. President Joe Biden has proposed \$770 billion for domestic and foreign aid programs, amounting to a 16.5 percent increase over the current year's enacted level. But he would hold defense spending relatively flat at \$753 billion — a 1.6 percent increase.

Republicans have vowed to push for "parity" between defense and nondefense spending — a principle that prevailed over the course of several bipartisan budget deals in recent years. They say Biden's budget request amounts to a cut in defense spending after adjusting for inflation.

House Democrats are barreling ahead with bills that are almost sure to advance in party-line votes, both in the Appropriations Committee starting this week and on the House floor late next month. The committee plans to mark up six of its dozen bills this week alone. But the allocations dispute promises to complicate negotiations with the evenly divided Senate.

"Unfortunately, this bill is based on a funding framework developed without Republican support," said Texas Rep.Kay Granger, the Appropriations Committee's ranking Republican, at a markup last week of the Military Construction-VA Subcommittee(See item 4). "I'm afraid the differences could slow the appropriations process this year, and we must try to resolve those differences."

Also this week, the Congressional Budget Office plans to release an update of its 10-year budget outlook that accounts for a \$1.9 trillion pandemic relief law (PL 117-2) that was enacted in March(See Budget Bulletin). And behind the scenes, strategizing will continue over plans for a bipartisan infrastructure bill and a bigger Democratic-backed spending initiative that will rely on reconciliation(See item 2).

The bottom line: Look for a flurry of markups this week — but it's just the beginning of a lengthy process.

#### 2. Brush fire extinguished

Republican senators said Sunday they were back on board with a bipartisan infrastructure deal that had threatened to unravel.

GOP lawmakers expressed consternation late last week when Biden threatened not to sign a bipartisan bill if Congress doesn't also give him a bigger reconciliation package funding the rest of his domestic agenda. "No deal by extortion!" Sen.Lindsey Graham, R-S.C., tweeted Friday.

But Biden reacted Saturday, issuing a statement designed to repair the damage. While he still planned to work to get both bills passed "in tandem," he said, he would support the bipartisan plan "without reservation or hesitation."

And just as quickly, GOP senators who helped negotiate the deal fanned out across the Sunday network talk shows to say they accepted Biden's clarification.

"I was very glad to see the president clarify his remarks because it was inconsistent with everything that we we had been told all along the way," Sen.Rob Portman, R-Ohio, said on ABC's "This Week" program. "We were all blindsided by the comments the previous day, which were that somehow these two bills were connected."

But the flap only underscored the high-wire act Democrats must navigate to pass both the bipartisan plan and their own more sweeping reconciliation measure with a razor-thin majority in both chambers. "Democrats want to do a lot of other things and I think they're the ones that are having a hard time deciding how to proceed," said Sen.Mitt Romney, R-Utah, on CNN's "State of the Union."

And support for a multitrillion-dollar reconciliation package appeared in greater jeopardy Sunday, when Sen.Joe

Manchin III, D-W.Va., suggested he would not support much more than \$2 trillion in new spending — a far cry from the \$6 trillion floated by Senate Budget ChairmanBernie Sanders, I-Vt. And Manchin said the entire package would need to be offset, unlike Sanders, who's said roughly half of his plan, give or take, could be deficit-financed.

"If they think in reconciliation I'm going to throw caution to the wind and go to 5 [trillion dollars] or \$6 trillion, when we can only afford 1 or one and a half or maybe 2 [trillion dollars] and what we can pay for, then I can't be there," Manchin said on ABC's "This Week." Peter Cohn has more on the among moderate Democrats here.

#### 3. Two markups Monday

House appropriators unveiled two more of their fiscal 2022 bills Sunday night in preparation for subcommittee markups Monday.

Thedraft Interior-Environment billwould provide \$43.4 billion for the Interior Department, the EPA and related agencies. That amounts to an increase of \$7.3 billion, or 20.2 percent, over this year's enacted level, according to a committee summary.

The bill also includes \$2.45 billion that won't count against overall discretionary spending limits to help combat wildfires that have ravaged several Western states in recent summers.

The EPA, which the Trump administration had continuously tried to cut, would get an increase of \$2.11 billion over this year's level, bringing the agency's total to \$11.34 billion. That amount even exceeds Biden's request by \$110.8 million. Joseph Morton hasdetails on the Interior-Environment bill here.

And the draftState-Foreign Operations billwould provide \$62.24 billion for the State Department, U.S. Agency for International Development and related agencies. That's an increase of \$6.7 billion, or 12.1 percent, above this year's enacted level, according to a committee summary.

The bill includes the first direct appropriation for the Green Climate Fund, which is designed to assist millions of people around the world in combating climate change and transitioning to net-zero emissions of greenhouse gases. The fund would get \$1.6 billion, which is part of a \$3 billion allocation toward climate change measures. Rachel Oswald hasdetails on the State-Foreign Operations bill here.

#### 4. Spending bills approved

House appropriators advanced two more of their dozen fiscal 2022 bills through subcommittees Friday, bringing to four the number of measures ready for a full committee markup this week.

The Agriculture Appropriations Subcommittee quickly approved by voice vote a bill that would provide \$26.6 billion in discretionary funding for the Agriculture Department, Food and Drug Administration and Commodity Futures Trading Commission. The proposed spending level would be an increase of \$23.4 billion from this year's enacted level. The total combined funding in the bill for discretionary and mandatory spending is \$196.8 billion.

Subcommittee ChairmanSanford D. Bishop Jr., D-Ga., and ranking memberJeff Fortenberry, R-Neb., said they worked to address concerns about U.S. oversight of foreign drug manufacturers.

Thedraft billincludes \$8.5 million for the FDA to develop pilot programs to increase unannounced inspections of foreign drug facilities in China and India to ensure that they are complying with U.S. standards. Concerns about the facilities rose among appropriators as COVID-19 highlighted U.S. reliance on foreign suppliers of medical and pharmaceutical goods.

The bill also would provide \$347.4 million to address climate change, with the money shared among several USDA programs. Ellyn Ferguson has details on the Agriculture subcommittee markup here.

And the House Military Construction-VA Appropriations Subcommittee approved by voice vote its\$279.9 billion draft bill, which includes mandatory funding such as veterans' benefits.

Discretionary spending in the bill would total \$124.5 billion, an increase of \$11.4 billion over this year's enacted level for programs such as veterans' health care. Mark Satter has details on the Military Construction-VA subcommittee markup here.

Spacepolicy Online

June 27, 2021 2:35 pm ET

What's Happening in Space Policy June 27-July 3, 2021

By Marcia Smith

Here is SpacePolicyOnline.com's list of space policy events for the week of June 27-July 3, 2021 and any insight we can offer about them. The House is in session through Thursday before beginning its one-week July 4th recess. The Senate's two-week recess (except for pro forma sessions) is already underway.

#### During the Week

The Senate is taking two weeks off, returning for legislative business on July 12. The House meets Monday-Thursday and then heads out for a one-week recess. When it returns on July 12, it will be for a "committee work week" where committees meet virtually and the House meets only in pro forma sessions. House appropriators will be busy marking up bills that fund space activities that week, though, so enjoy this little break while you can.

Even the usual array of space-related committee meetings, webinars, and conferences is smaller that we've seen recently as summer vacations take hold, but there still are some very interesting events here and abroad.

Among the highlights here this week is a meeting of NASA's Astrophysics Advisory Committee (Tuesday-Wednesday) where hopefully we'll hear more about efforts to get the Hubble Space Telescope back online from Astrophysics Division Director Paul Hertz. He is on the agenda for 11:10 am ET on Tuesday. Updates on the James Webb and Roman space telescopes are scheduled for Wednesday.

CSIS has a very interesting webinar Tuesday morning about the Space Race in the 21st Century. No, it's not about China this time, but Russia, specifically its "evolving military space capabilities." It features three great speakers: Doug Loverro, former Deputy Assistant Secretary of Defense for Space Policy (and briefly head of NASA's human spaceflight program); Gen. Robert Kehler (Ret.), former Commander of U.S. Strategic Command; and Victoria Samson, Director of the Washington Office of the Secure World Foundation (SWF). Two CSIS experts are the moderators: Kaitlyn Johnson and Heather Conley.CSISandSWFissue complementary annual reports on counterspace capabilities, including Russia's, that are good preparation for this discussion.

June 30 (Wednesday) is International Asteroid Day as declared by the United Nations in 2016. A number of events are taking place including a NASA Science Live program at 1:00 pm ET according to the NASA TV schedule. We don't have other details, but it's sure to be interesting.

The Space Court Foundation will address the provocative question "Does Space Security Matter to Industry" also on Wednesday. Therese Jones from Satellite Industry Association, Toby Harris from Astroscale, Rada Popova from ISAR
Aerospace, and Daniel Porras from the Secure World Foundation will discuss industry's views on debris mitigation, security threats, and whether commercial actors should be part of the international dialogue to improve space security.

On Thursday, the Aerospace Corporation's Space Policy Show will look into what the U.S. Space Force might learn from how the U.S. Marine Corps is exploring, implementing and executing "force design" for using and leveraging technology. Aerospace says the Space Force plans to use force design to determine what it will do and how through the Space Warfighting Analysis Center.

Elsewhere in the world, on Tuesday, Russia will launch its next cargo spacecraft to the International Space Station (ISS), Progress MS-17, or Progress 78 in NASA parlance. It's taking the slow route, docking two days (July 1) later at the Poisk module. But that's temporary. Russia is getting ready to launch its long-awaited 20 metric ton Nauka (Science) module on July 15 and in October Progress MS-17 will make an automated undocking and redock with Nauka, where it will remain for another month. Nauka (once known as FGB-2) is more than a decade late. Anatoly Zak at RussianSpaceWeb.comtells the tale.

In the U.K., the British Interplanetary Society (BIS) is holding its annual Reinventing Space conference Monday-Wednesday in a hybrid format. The in-person event is at the Queen Elizabeth II Conference Center in London. Former ESA Director General Jan Woerner is one of the keynote speakers amidst the three days of keynotes, panel sessions, and technical sessions.

The U.K.'s University of Manchester Discoverer Project has a separate conference Monday-Tuesday that is entirely virtual. That one is focused on the utility of Very Low Earth Orbit (VLEO) missions & technologies especially for earth observation.

Those and other events we know about as of Sunday morning are shown below. Check back throughout the week for others we learn about later and add to ourCalendar.

Sunday-Wednesday, June 27-30

• Space Renaissance 2021: Civilian Space Development, virtual (continued from June 26)

Monday-Tuesday, June 28-29

• 1st International Symposium on Very Low Earth Orbit (VLEO) Missions & Technologies(Discoverer Project), virtual

Monday-Wednesday, June 28-30

• Reinventing Space(BIS), London and virtual

Tuesday, June 29

• Space Race in the 21st Century: Understanding Russia's Evolving Military Capabilities(CSIS), virtual, 9:00-10:00 am ET

• Launch of Progress MS-17 to the ISS, Baikonur, Kazakhstan, 7:27 pm ET (June 30, 4:27 am local time at the launch site), NASA TV begins 7:00 pm ET

Tuesday-Wednesday, June 29-30

NASA Astrophysics Advisory Committee, virtual

Wednesday, June 30

• Space Economy: Africa in Focus(UNOOSA), virtual, 10:30-16:00 Central European Summer Time (4:30-10:00 am ET)

• Does Space Security Matter to Industry? (Space Court Foundation), virtual, 9:00 am ET

• House Appropriations Defense Subcommittee FY2022 Markup, CLOSED

• Natl Acad Committee on Foundation for Assessing the Health and Vitality of NASA SMD's Research Communities, virtual, 11:00 am-6:00 pm ET (some sessions may be closed)

• Natl Acad Committee on Increasing Diversity and Inclusion in Leadership of Competed Space Missions, virtual, open sessions are 1:00-4:00 pm ET

• Space and Systems Change(Space Foundation), virtual, 1:00 pm ET

• International Asteroid Day (NASA Science Live), virtual, 1:00 pm ET (NASA TV)

Thursday, July 1

• Force Design: Lessons from the Marine Corps(Aerospace Corp), virtual, 1:00 pm ET

NY Times

June 25, 2021

U.S. Has No Explanation for Unidentified Objects and Stops Short of Ruling Out Aliens

ByJulian E. Barnes

WASHINGTON — The government still has no explanation for nearly all of the scores of unidentified aerial phenomena reported over almost two decades and investigated by a Pentagon task force, according to a report released on Friday, a result that is likely to fuel theories of otherworldly visitations.

A total of 143 reports gathered since 2004 remain unexplained, the document released by the Office of the Director of National Intelligence said. Of those, 21 reports of unknown phenomena, involving 18 episodes, possibly demonstrate technological capabilities that are unknown to the United States: objects moving without observable propulsion or with rapid acceleration that is believed to be beyond the capabilities of Russia, China or other terrestrial nations. But, the report said, more rigorous analysis of those episodes is needed.

There is no evidence that any of the episodes involve secret American weapons programs, unknown technology from Russia or China or extraterrestrial visitations. But the government report did not rule out those explanations.

The nine-page document essentially declines to draw conclusions, announcing that the available reporting is "largely inconclusive" and noting that limited and inconsistent data created a challenge in evaluating the phenomena.

The report said the number of sightings was too limited for a detailed pattern analysis. While they clustered around military training or testing grounds, the report found that that could be the result of collection bias or the presence of cutting-edge sensors in those areas.

Government officials outlined a plan to develop, if additional funding is available, a better program to observe and collect data on future unexplained phenomena.

The failure to reach a conclusion on the unexplained episodes raised questions about how seriously the government has taken them until now and whether it had assembled adequate scientific expertise to examine them.

Too little data exists to draw a conclusion about many of the episodes, officials said. But both scientific experts and enthusiastic amateurs have advanced explanations ranging from the mundane to the otherworldly and the report did little to substantiate or dismiss their theories.

Government officials on Friday were reluctant to acknowledge the potential that the phenomena could be extraterrestrial craft, a signal of how unlikely they view that explanation.

There wasno affirmative evidence that the unexplained phenomena are alienspacecraft in the report. But because the government has offered no explanation for so many of the episodes, the new report is sure to fuel the enthusiasm of those who believe they could be.

Among the unexplained incidents are three high-profile videos of aerial phenomena taken by the U.S. Navy andwitnessed by pilotsin recent years.

The report released on Friday is an interim report, which is how former officials involved in the Pentagon examination had predicted the government would initially handle the requirement by Congress to submit an unclassified report on what it knows about U.F.O.s.

The government intends to update Congress within 90 days on efforts to develop an improved collection strategy and what officials are calling a technical road map to develop technology to better observe the phenomena, senior government officials told reporters on Friday. Officials said they would provide lawmakers with periodical updates beyond that.

The Pentagon and intelligence agencies have eschewed the term U.F.O. and refer instead to U.A.P., or unidentified aerial phenomena. It has been a bit of rebranding, both to cut down on public enthusiasm and remove the stigma that U.F.O. can carry, in order to encourage pilots to report their observations and scientists to study them.

The new report laid out five categories of possible explanation for the phenomena: a secret technology developed by an adversarial power like Russia and China, classified cutting-edge American technology, a naturally occurring phenomenon, airborne clutter such as errant weather balloons and a catchall "other" category. That final group could include extraterrestrial technology.

But of the episodes examined by the task force, only one could be identified and categorized: "a large, deflating balloon" that was classified as airborne clutter.

Officials do not have any indications that the unexplained incidents show objects that are part of a foreign intelligence collection program or a major technological advancement by a potential adversary, a senior government official said. They are also unable to confirm that any of those incidents are part of a U.S. government or defense industry program, a senior official said.

Nevertheless, the report does not completely rule out a Russian or Chinese aircraft or an American classified program.

The report was made public because of a provision inserted by Senator Marco Rubio of Florida, the top Republican on the Senate Intelligence Committee, into a huge spending bill passed by Congress.

"The Defense Department and intelligence community have a lot of work to do before we can actually understand whether these aerial threats present a serious national security concern," Mr. Rubio said.

Of the incidents examined by the task force, there are "no clear indications that there is any nonterrestrial explanation" for them, said a senior official, adding that the government would "go wherever the data takes us" as the inquiry continued.

The report avoids any real discussion of the possibility that the unexplained phenomena are extraterrestrial in nature. It was not the purpose of the government's task force to search for extraterrestrial life, a responsibility that falls to NASA, said a senior governmental official.

Perhaps as a result, government officials said that going forward they would only focus on making observations of the phenomena and had no plans to try to communicate with the objects.

Most of the episodes investigated by the government were reported by the Navy. While the Air Force has in recent decades tried to distance itself from the collection of U.F.O. reports, uncomfortable with its own history, it began a renewed data collection program in 2020.

Government officials said that on further examination, the 21 reports that show unusual acceleration or movement could prove to have normal explanations. Government analysts have scrutinized the cameras and sensors that recorded the phenomena for potential flaws, a senior government official said.

The cameras sensors that recorded some of the episodes were not "generally suited for identifying" unknown phenomena, the report said.

There are plausible, but dry, explanations for each of the Navy recordings that are more likely than some sort of extraordinary technology, said Mick West, a science writer who focuses on debunking conspiracy theories.

In one video, a sharp movement of the object could be attributable to a shift in the camera's movement. In another, an object that appears to be moving fast is shown to be actually moving much more slowly when a relevant trigonometric calculation is applied. An image of a rapidly spinning object skimming over the clouds is caused by infrared glare, Mr. West said.

The report appeared to give Mr. West's explanations at least a partial vote of confidence by noting that the vantage point of the sensors capturing images or other data are important in determining whether an object "demonstrates breakthrough aerospace capabilities."

"They're not making any big claims; they're saying some of the things they see seem to show unusual behavior and more study is needed," Mr. West said. "Obviously, they're not saying it's aliens — they're not going anywhere near that."

Later on Friday, the Pentagon announced it would develop procedures to collect data and analyze reports of unidentified phenomena, adding staffing and other resources to examine the episodes.

The effort may require some outside expertise, but scientists, who have long avoided studying U.F.O.s, are likely going to need cajoling.

"Nobody wants to risk being flamed by the true believers or ostracized by their peers," said Chris Impey, an astronomy professor at the University of Arizona. "If the Pentagon or the government asks for scientific input and gives them some data and a little resources, people would participate."

#### Space News

June 27, 2021

NASA team to study new roles for the agency in addressing orbital debris

byJeff Foust-

WASHINGTON — NASA has established a working group to examine what new roles the agency can take to mitigate the growth of orbital debris and promote space sustainability.

In a talk at the Secure World Foundation's Summit for Space Sustainability June 23, Bhavya Lal, senior adviser to the NASA administrator for budget and finance, said she is leading a recently established team that will examine how the agency could take a larger role in efforts to mitigate and remediate orbital debris.

"We've assembled an orbital debris review team in-house to evaluate how NASA can be a more effective leader in the area of space sustainability," she said. "Our goal is to examine how NASA could be a better leader in space sustainability."

NASA's efforts in orbital debris research, she said, have focused primarily on protecting the agency's own missions, from the International Space Station to robotic spacecraft. "We are looking in this review team on things that NASA could be doing beyond what we do in protecting our own assets, being leaders in the broader community," she said.

Lal didn't elaborate on the team's work beyond that it is an internal NASA effort rather than an interagency one. "We hope to be sharing our thoughts with you in the coming months," she said.

She described tackling the orbital debris problem with a three-prong approach: reducing the creation of new debris, improving tracking of debris and developing ways to remove debris. That's similar, she argued, to ways of dealing with climate change, with ongoing efforts to reduce emissions, track progress and study ways to sequester greenhouse gases.

It's also the model outlined in aNational Orbital Debris Research and Development Plan, published in January by the White House Office of Science and Technology Policy in the final days of the Trump administration. It identified as three elements of the plan ways to limit the creation of debris, track and characterize debris, and remediate or repurpose debris.

That report recommended that agencies work together to address the research areas identified in the report but did not make any formal assignments. The report listed NASA as having a role in 13 of 14 research areas, the exception being work to improve processing of data for space object catalogs.

Lal endorsed that report. "It is important that we begin to implement this plan," she said.

One potential area of activity would be active debris removal. NASA is already developing technologies for satellite servicing that could also be used to remove debris. That includes the On-orbit Servicing, Assembly, and Manufacturing (OSAM) 1 mission, formerly known as Restore-L, currently in development.

That's attracted the attention of some in Congress. "You read in the paper quite a bit — and it seems like more and more — that space debris is becoming a problem," Sen. Shelley Moore Capito (R-W.V.) said at a June 15 hearing of a Senate appropriations subcommittee on NASA's budget proposal. "With OSAM-1, since you can repair in-space and elongate the life of a satellite, it could help address that issue."

Asked about NASA's interest in active debris removal technology, Lal said the agency was focused more on earlystage technology development efforts rather than operational systems. An example she mentioned was NASA funding of several studies through the NASA Innovative Advanced Concepts program for very early stage technologies.

NASA has not, unlike some other space agencies, funded demonstrations of debris removal technology. During another panel discussion at the conference June 22, one expert warned the United States was in danger of falling behind other nations in this field.

"I do think the U.S. is losing an opportunity" in active debris removal technologies, said Asha Balakrishnan, a research staff member at the Science and Technology Policy Institute. "In order to do it, we need direction, at least in the U.S., on which agency is going to take the lead on doing it and who is going to be funded to do it."

Removing orbital debris brings with it both technical and policy challenges, but Lal also mentioned the high costs of debris remediation. Pilot projects funded by the European Space Agency and Japan Aerospace Exploration Agency to remove objects have a cost of more than \$1 million per kilogram, she noted. Given current estimates of more than 8,000 metric tons — 8 million kilograms — of debris in orbit, "we're talking about trillions of dollars of debris removal," she said.

"This is a challenge, but, of course, it's also an opportunity," she said. "Space is a big, diverse and innovative sector, and together we can come up with amazing approaches that don't just involve technology but also regulatory, policy and other kinds of innovations."

Los Angeles Daily News

June 25, 2021 at 5:19 p.m.

NASA Will Dismantle Two Test Sites At Toxic Santa Susana Field Lab Area

#### **ByOLGA GRIGORYANTS**

NASA said it will move forward with plans to demolish the Bravo and Coca vertical test stands at the Santa Susana Field Lab, contaminated when the area was used to test rocket engines and other activities for decades.

Built in the 1950s, the Alpha, Bravo, Coca and Delta test stands were home to rocket testing for NASA's Space Shuttle program and for U.S. Air Force missiles. Later the sites would play a major role in buoying the Apollo program, which launched the first American astronauts to the moon.

Those activities, however, left the area contaminated with radioactive and chemical toxins, affecting nearby communities. For decades, activists have been calling for the cleanup of the sprawling area hidden in the hills between San Fernando and Simi valleys.

Pre-demolition work will begin this month as crews complete biological surveys to ensure demolition doesn't impact the health and safety of workers, the public and nearby cultural and biological resources, according to NASA.

The site is encircled by communities of Chatsworth, Thousands Oaks, Canoga Park, West Hills and Simi Valley where nearly 400,000 people reside. After years of negotiations and agreements, a full-scale cleanup of the area has still not been launched.

The demolition of the Bravo test stands and control house is expected to the completed by the end of 2022. After that, NASA will proceed with leveling the Coca Test Area and is set to finish that phase by 2023. A timetable for demolition of the remaining stand, Delta, has not yet been announced.

Peter Zorba, NASA SSFL project director said in a statement that "completing demolition will allow us to begin cleanup as soon as DTSC completes their regulatory process."

Supporters of the full cleanup of the site responded warily. Critics say that NASA already agreed under the terms of a binding deal with the state in 2010 to clean the soil on to the most stringent standard and tearing down the test stands is not aligned with the agreement.

West Hills resident and leading activist Melissa Bumstead wondered whether "NASA is testing the DTSC to see if they can quietly abandon their legal AOC cleanup agreements and apply their version of a suburban residential cleanup standard, even though it would leave 95% of the contamination at the Santa Susana Field Lab permanently."

Bumstead believes her 11-year-old daughter, a two-time cancer survivor, got sick because of the release of radiation from the site.

She added that if the California Department of Toxic Substances Control, which oversees the cleanup, doesn't stop this effort by NASA "we will continue to be in danger of exposure to carcinogenic chemicals every rainy or windy day."

The NASA facilities were not the only ones to contribute to the contamination at Santa Susana Field lab over the decades. The timetable for cleanup of other areas remains unclear.

The 2,850-acre area, which first appeared on the map in the 1940s, was once a cutting-edge collection of production plants, test sites and chemical labs. It was home to rocket-engine tests, the development of experimental liquid metals and nuclear energy research by private-sector and government scientists from such entities as Boeing, the U.S. Department of Energy and NASA.

The partial meltdown of a small experimental nuclear reactor in 1959, unrelated to the NASA sites being dismantled, left the area beset with radioactive and chemical pollution, experts say.

After decades of activism and negotiations, the government in 2010 agreed to clean up the site, but efforts since then have fallen short of promised goals and deadlines.

People ranging from environmental activists and nearby residents to Sen. Dianne Feinstein, Sen. Henry Stern, and members of Congress to reality TV celebrity Kim Kardashian West, who lives in nearby Hidden Hills, have urged action on the cleanups.

Over the years, experts have conducted studies on those who previously worked at the field lab along with research on rates of thyroid cancer among residents who live near the property.

In 2005, Boeing reached a settlement with more than 100 neighbors of the lab, who had said they developed cancer and other illnesses from the rocket-engine manufacturing plant. Boeing denies that there's a link between the contamination and illnesses among nearby residents. Some have alleged that the area contributed to illnesses in the area, but the Los Angeles County Department of Public Health has said evidence doesn't yet exist to support that assertion.

Over the years, about 1,500 claims were filed by employees who were diagnosed with cancer and worked at the site with the Department of Labor. More than \$58 million has been paid out.

Meanwhile, NASA officials said they have taken steps to move some of the wildlife living in the area away from the demolition efforts. Three boxes were set up to serve as new nesting spots for barn owls, which have set up homes in or around the Bravo stands.

Biologists hope the owls, known for their white, heart-shaped faces, will soon relocate to the new boxes.

The Washington Post

June 28, 2021 at 7:39 a.m. EDT

Rescuers stay hopeful about finding more survivors in rubble

By Terry Spencer and Russ Bynum|AP

SURFSIDE, Fla. — Rescue workers digging feverishly for a fifth day Monday stressed that they could still find survivors in the rubble of a collapsed Florida condo building, a hope family members clung to even though no one has been pulled out alive since the first day the structure fell.

The death toll rose by just four people Sunday, to a total of nine confirmed dead. But more than150 peopleare still missing in Surfside.

Families of the missingrode busesto a site nearby from which they could watch teams at work Sunday: firefighters, sniffer dogs and search experts employing radar and sonar devices.

U.S. Rep. Debbie Wasserman Schultz said at a Sunday evening news conference that she had met with some of the rescue workers and was able to "hear the hope that they have."

"We obviously have some realism that we're dealing with. But ... as long as the experts that we trust are telling me they have hope to find people who might have been able to survive, then we have to make sure that we hold on to that hope," she said.

Israeli Diaspora Affairs Minister Nachman Shai, head of a humanitarian delegation from Israel that includes several search-and-rescue experts, said the professionals have told him of cases where survivors were found after 100 hours or more.

"So don't lose hope, that's what I would say," he said.

Some families had hoped their visit to the site near the 12-story building would allow them to shout messages to loved ones possibly buried deep inside the pile. As they returned to a nearby hotel, several paused to embrace as they got off the bus. Others walked slowly with arms around each other back to the hotel entrance.

"We are just waiting for answers. That's what we want," said Dianne Ohayon, whose parents, Myriam and Arnie Notkin, were in the building. "It's hard to go through these long days and we haven't gotten any answers yet."

The building collapsed just days before a deadline for condo owners to start making steep payments toward more than \$9 million in repairs that had been recommended nearly three years earlier, in a report that warned of "major structural damage."

Authorities on Sunday identified the additional four people that had been recovered as Leon Oliwkowicz, 80; Christina Beatriz Elvira, 74; Ana Ortiz, 46; and Luis Bermudez, 26. The number of people left unaccounted for was 152, said Miami-Dade Mayor Daniella Levine Cava. The last live person rescued was on Thursday, just hours after the collapse.

Miami-Dade Assistant Fire Chief Raide Jadallah explained that conditions at the site — the building pancaked when it fell — have frustrated crews looking for survivors. Alan Cominsky, chief of the Miami-Dade Fire Rescue Department,

said his team is holding out hope of finding someone alive, but must continue to move slowly and methodically.

"The debris field is scattered throughout, and it's compact, extremely compact," he said, noting that teams must stabilize and shore up debris as they go.

"We can't just go in and move things erratically, because that's going to have the worst outcome possible," he said.

Among the tools rescuers used was a microwave radar device developed by NASA's Jet Propulsion Lab and the Department of Homeland Security that "sees" through up to 8 inches (20 centimeters) of solid concrete, according to Adrian Garulay, CEO of Spec Ops Group, which sells them. The suitcase-size device can detect human respiration and heartbeats and was being deployed Sunday by a seven-member search-and-rescue team from Mexico's Jewish community.

Levine Cava said six to eight teams are actively searching the pile at any given time, with hundreds of team members on standby ready to rotate in. She said teams have worked around the clock since Thursday, and there was no lack of personnel.

President Joe Biden said in a statement he spoke with FEMA Administrator Deanne Criswell about efforts on the ground after Criswell visited the site. Biden said his administration is prepared to provide assistance and support.

"This is an unimaginably difficult time for the families enduring this tragedy," Biden said. "My heart goes out to every single person suffering during this awful moment."

Crews spent Saturday night digging a trench that stretches 125 feet long, 20 feet across and 40 feet deep (38 meters long, 6 meters across and 12 meters deep), which, she said, allowed them to find more bodies and human remains.

Earl Tilton, who runs a search-and-rescue consulting firm in North Carolina, said rushing into the rubble without careful planning and execution would injure or kill rescuers and the people they are trying to save.

"Moving the wrong piece of debris at the wrong time could cause it to fall" on workers and crush them, he said.

But Tilton agreed families were not wrong to continue holding out hope. During past urban rescues, he said, rescuers have found survivors as long as a week past the initial catastrophe.

The Washington Post

June 23, 2021 at 6:30 p.m. EDT

Opinion: Americans should worry more about China than Russia. The new space race shows why.

The salute was carried live to 1 billion people but went unnoticed by most of the world.

Three astronauts aboard China's newrivalto the International Space Station gave military salutes to President Xi Jinping during a videoconference broadcast Wednesday on state television. "We in Beijing await your triumphant return," Xitoldthe three officers of the People's Liberation Army standing in front of Communist Party flags as they orbited 242 miles above Earth.

Last week's launch from a base in the Gobi Desert was followed obsessively inside China but largely overlooked in the United States — overshadowed by President Biden's summit with Russian leader Vladimir Putin. Although both adversaries threaten U.S. interests, Americans need to worry more about a rising and militarizing China than a revanchist Russia. Thenew space racehelps illustrate why.

The Chinese didn't put an astronaut into space until 2003, 42 years after the Soviets, but Beijing has been making cosmic strides that, unlike the Kremlin's advances during the Cold War, have yet to rouse Washington out of its relative complacency.

Last month, China landed a rover on Mars — becoming the only nation besides ours to do so. Last September, the Chinese launched and recovered a spaceplane that spent two days in low-Earth orbit. In 2019, China became the first country to land a craft on the far side of the moon.

The same day Biden met with Putin, Russian and Chinese officialsunveiledaroadmapin St. Petersburg tojointlybuild a lunar base that could accommodate humans by 2036. The Chinese have also conducted tests that indicateadvanced capabilitiestoknock outU.S. satellites. Last June, they launched the last in a constellation of 35 satellites to create a rival network to our GPS system.

In April, the U.S. intelligence community'sannual threat assessmentwarned that "Beijing is working to match or exceed US capabilities in space to gain the military, economic, and prestige benefits that Washington has accrued from space leadership."

This threat isn't limited to the vacuum of space. China's efforts must be viewed in the context of its ongoing genocide in Xinjiang, smothering of Hong Kong, saber-rattling against Taiwan and obstruction of independent investigations into the origins of thecoronavirus.

Fortunately, most leaders in both U.S. political parties recognize the need tocounter Chinaand support our space program. In 2019, the Trump administration moved up by four years, to 2024, the timetable for returning astronauts to the moon. The Biden team embraces this aggressive, if underfunded, goal.

NASA AdministratorBill Nelsonheld up a photographof China's Mars rover during a recent House hearing as he requested more funding for the Human Landing System. "That should tell us something about our need to get off our duff," he testified. NASA wants\$11 billionin the infrastructure package, in addition to its annual budget request of \$24.7 billion, a 6 percentincreasefrom the current fiscal year.

If we are to maintain U.S. supremacy in space, we should also try to learn from our early setbacks. Jeff Shesol's "Mercury Rising," published this month, tells the fascinating backstory of how John Glenn became the first American to orbit Earth in 1962. Even though John F. Kennedy campaigned on closing the space gap, his initial commitment seemed more rhetorical than real. Kennedy's budget director resisted spending on manned spaceflight.

When Kennedy told a joint session of Congress that America should try to land a man on the moon by the end of the decade, he and his top aides were struck by the lack of applause in the chamber. The Democratic chairman of the House Appropriations Committee called Kennedy's budget request "wholly unrealistic and fantastic beyond measure."

Gallup polling in 1961 found that almost 6 in 10 Americansopposed spendingthe \$40 billion they were told it would cost to put men on the moon. When respondents ranked the issues for which they'd be willing to pay more taxes, space came in fifth. Early media coverage focused on the expense, not excitement, of a mission whose prospects were considered remote.

The success of Glenn'sFriendship 7mission created momentum and built support for additional spending. "Everything in retrospect has an air of inevitability, but it wasn't," Shesol said in an interview.

Even after Glenn's achievement, many Americans remained skeptical about exploring the final frontier. Shesol said that's why Kennedy delivered what became his famous"we choose to go to the moon" addressat Rice University. "This generation does not intend to founder in the backwash of the coming age of space," Kennedy declared. "The

exploration of space will go ahead, whether we join in it or not. ... No nation which expects to be the leader of other nations can expect to stay behind in the race for space."

Half a century later, in the face of a different communist threat, another new age is dawning. Yes, Russia remains a threat. The global pandemic is still with us. And red ink is spilling for decades to come. But for all the competing budget and political concerns, the martyred president's words feel freshly urgent.

# Attachment

#### 1. ATT00001.txt

Type:text/plainSize:145 bytes

Attachment #1 ATT00001.txt code-I mailing list code-I@lists.hq.nasa.gov https://lists.hq.nasa.gov/mailman/listinfo/code-I National Aeronautics and Space Administration

Headquarters Office of Communications Washington, DC 20546-0001



December 8, 2021

Reply to Attn of: MS5L9, FOIA Public Liaison

Via Email

REF: FOIA Case No. 21-HQ-F-00561

This is our Final Determination of your Freedom of Information Act (FOIA) request, dated and received by the National Aeronautics and Space Administration ((NASA) Headquarters (HQ) FOIA Office on June 25, 2021. Your request was assigned FOIA Case Number 21-HQ-F-00561 and sought:

"A copy of each email in the email accounts of individuals in the NASA Office of Legislative and Intergovernmental Affairs that contains the word UAP, based on an electronic search. I limit this request to the time period May 1, 2021 through the present."

On July 12, 2021, you narrowed your request to the emails of Associate Administrator for Legislative and Intergovernmental Affairs Alicia Brown.

In response to your request, a search of Ms. Alicia Brown's email inbox was conducted by NASA's Information Technology Department (IT). That search identified records responsive to your request for the search terms UAP and Unidentified Aerial Phenomena within the timeframe provided above. The search located 67 emails<sup>1</sup> totaling 392 pages. On August 4, 2021, we provided an interim release of 184 pages. We have concluded our review of the remaining 209 pages. Please be advised we deleted duplicate records, and the final page count has reduced to 63 pages.

Pursuant to NASA's review of these responsive records under the FOIA, we are providing the following:

- **<u>23</u>** page(s) are released in full (RIF);<sup>2</sup>
- **35** page(s) are released in part (RIP);

<sup>&</sup>lt;sup>1</sup> For ease of review and to help consolidate responsive records, we only processed complete email chains containing the full message history. Any earlier instances of messages already captured within that complete chain were considered to be duplicates and were not re-processed.

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

- **<u>02</u>** page(s) are withheld in full (WIF);
- **<u>03</u>** page(s) are 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." 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 "predecisional" and "deliberative." Documents are pre-decisional when they precede an agency decision and are prepared in order to assist an agency in arriving at its decision. Documents are deliberative when they comprise part of the process by which government decisions are made. The types of records/information NASA withheld under this exemption consists of draft documents, portions of emails containing analyses, recommendations, opinions and/or personal views expressed by employees. NASA considered the foreseeable harm that would result from the release of this information and determined that its release would hinder the decision-making process, create a chilling effect on internal deliberations, lead to uninformed decision-making, and public confusion.

#### 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 work cell phone numbers, personal and third parties mentioned or referenced in these records and any information that could reasonably be expected to identify such individuals.

#### Referral

One document, totaling three pages, falls under the purview of the Secretary of Defense (OSD). We are referring this document to the Office of the Secretary of Defense/Joint Staff (OSD/JS) FOIA Office for direct contact to you. They will process the document under the FOIA and respond to you directly. Contact information for the OSD FOIA is available at:

#### **OSD/JS FOIA Requester Service Center**

Freedom of Information Division

1155 Defense Pentagon Washington, DC 20301-1155 Phone: 571-372-0498 Email: whs.mc-alex.esd.mbx.osd-js-foia-requester-service-center@mail.mil

This referral was made in accordance with NASA regulations, which require NASA to determine whether another entity is better able to determine whether records are exempt from disclosure under the FOIA, and if so, then the record must be referred to the other entity. 14 C.F.R. § 1206.308. In general, the entity that created a record is presumed best able to determine whether it may be disclosed under the FOIA.

#### **Appeal Rights**

You have the right to appeal my action on your FOIA request. Your appeal must be received within 90 calendar days of the date of this letter. Your appeal must be in writing and addressed to:

Administrator ATTN: FOIA Appeals NASA Headquarters Executive Secretariat MS 9R17 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 copies of your initial request, this correspondence, 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 also contain a brief statement of the reasons you believe this initial determination should be reversed.

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

For further assistance and to discuss any aspect of your request, you may contact NASA's Chief FOIA Public Liaison, Stephanie Fox, via telephone at 202-358-1553 or via e-mail at <u>Stephanie.K.Fox@NASA.gov</u>. You may also send correspondence to Ms. Fox at the following address:

National Aeronautics and Space Administration (NASA) Freedom of Information Act Unit NASA Headquarters Attn: Stephanie Fox Chief FOIA Public Liaison300 E Street, S.W., 5P32 Washington D.C. 20546 (Fax) 202- 358-4332 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 Email: ogis@nara.gov Telephone: (202) 741-5770 Toll free: 1-877-684-6448 Fax: (202) 741-5769

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

If I can be of further assistance, please contact me at 202-358-0680 or <u>Mireya.P.Nyirenda@nasa.gov.</u>

Sincerely,

C Digitally signed by Mia Nyirenda Date: 2021.12.08 12:31:37 -05'00'

MIREYA P. NYIRENDA FOIA Public Liaison Officer

### RE: Talking points for the Administrator: Unidentified Aerial Phenomena

From:	Flaherty, Christopher J. (HQ-VA030) <christopher.j.flaherty@nasa.gov></christopher.j.flaherty@nasa.gov>
To:	Rowe, Andrew (HQ-VA030) <andrew.rowe@nasa.gov></andrew.rowe@nasa.gov>
Cc:	Keshian, Jaclyn R. (HQ-VA010) <jaclyn.r.keshian@nasa.gov>, Brown, Alicia N. (HQ-VA000) <alicia.n.brown@nasa.gov>, Irving, Richard R. (HQ-VA030) <richard.r.irving@nasa.gov></richard.r.irving@nasa.gov></alicia.n.brown@nasa.gov></jaclyn.r.keshian@nasa.gov>
Sent:	May 27, 2021 12:46:06 PM EDT
Received:	May 27, 2021 12:46:07 PM EDT

I've go nuthin on this one. Check with OIIR.

I would guess this would have been assigned to the Office of the Chief Scientist, but would most likely have come in through OIIR.

Most likely result is that NASA has not been asked.

From: Rowe, Andrew (HQ-VA030) <andrew.rowe@nasa.gov> Sent: Thursday, May 27, 2021 12:27 PM To: Brown, Alicia N. (HQ-VA000) <alicia.n.brown@nasa.gov>; Irving, Richard R. (HQ-VA030) <richard.r.irving@nasa.gov>; Flaherty, Christopher J. (HQ-VA030) <christopher.j.flaherty@nasa.gov> Cc: Keshian, Jaclyn R. (HQ-VA010) <jaclyn.r.keshian@nasa.gov> Subject: RE: Talking points for the Administrator: Unidentified Aerial Phenomena

Not surprised if an IC interagency report doesn't come to us, really.

From: Brown, Alicia N. (HQ-VA000) <alicia.n.brown@nasa.gov> Sent: Thursday, May 27, 2021 12:26 PM To: Rowe, Andrew (HQ-VA030) <andrew.rowe@nasa.gov>; Irving, Richard R. (HQ-VA030) <richard.r.irving@nasa.gov>; Flaherty, Christopher J. (HQ-VA030) <christopher.j.flaherty@nasa.gov> Cc: Keshian, Jaclyn R. (HQ-VA010) <jaclyn.r.keshian@nasa.gov> Subject: RE: Talking points for the Administrator: Unidentified Aerial Phenomena

All I know is that we have been trying to figure out the answer to that question...but I don't know the answer.

From: Rowe, Andrew (HQ-VA030) <andrew.rowe@nasa.gov> Sent: Thursday, May 27, 2021 12:24 PM To: Irving, Richard R. (HQ-VA030) <richard.r.irving@nasa.gov>; Flaherty, Christopher J. (HQ-VA030) <christopher.j.flaherty@nasa.gov>; Brown, Alicia N. (HQ-VA000) <alicia.n.brown@nasa.gov> Cc: Keshian, Jaclyn R. (HQ-VA010) <jaclyn.r.keshian@nasa.gov> Subject: RE: Talking points for the Administrator: Unidentified Aerial Phenomena

Best subject line ever. This is re: who might have participated in 21 Intel Act-required study on unidentified aerial phenomena from NASA end, per a statutory requirement.

• You all have any relevant information? Already answered this from another direction?

• If not, I'm going to suggest verification with OIIR.

From: Johnson, Alana R. (HQ-DG000)[ASRC FEDERAL SYSTEM SOLUTIONS] <alana.r.johnson@nasa.gov> Sent: Thursday, May 27, 2021 12:17 PM To: Keshian, Jaclyn R. (HQ-VA010) <jaclyn.r.keshian@nasa.gov>; Fox, Karen C. (GSFC-1300) <karen.c.fox@nasa.gov>; Landau, Elizabeth R (HQ-1864)[ASRC FEDERAL SYSTEM SOLUTIONS] <elizabeth.r.landau@nasa.gov>; Handal, Joshua A. (HQ-DG000)[ASRC FEDERAL SYSTEM SOLUTIONS] <joshua.a.handal@nasa.gov>; Thompson, Tabatha T. (HQ-NA020) <tabatha.t.thompson@nasa.gov>; Rowe, Andrew (HQ-VA030) <andrew.rowe@nasa.gov> Subject: FW: Talking points for the Administrator: Unidentified Aerial Phenomena Importance: High

-

Hello, Jackie and Andy!

I think Marc Etkind may have reached out to you yesterday about this. Below are the messages we have right now, and I am working on a more in-depth TP/ RTQ package.

I am wondering if you are aware of anything NASA may have contributed to this:

The 2021 Intelligence Authorization Act, signed this past December, stipulated that the government had a hundred and eighty days to gather and analyze data from disparate agencies. The report is expected to be released in early June.

Anything you have, or insight you can bring would be appreciated.

Thanks!

Alana

Are you a journalist covering the Ingenuity Mars Helicopter or the Perseverance Mars rover, please fill out our media request form at https://bit.ly/mars-landing-media

<https://gcc02.safelinks.protection.outlook.com/?url=https://bit.ly/mars-landing-

media&data=04|01|alicia.n.brown@nasa.gov|10a7a2b919424dd22dc708d9212eeca1|7005d45845be48ae8140d43da 96dd17b|0|0|637577307679134585|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiV2luMzliLCJBTil6lk1 haWwiLCJXVCI6Mn0=|1000&sdata=+dWbFYQmAmbvzLXst8RtnbETpvwCbMr0DRSQvd+Y+JU=&reserved=0>.

Alana R. Johnson

Senior Communications Specialist, PAAC V Contract

Planetary Science Division

alana.r.johnson@nasa.gov o: (202) 358-1501 | c: (b) (6)

NASA Headquarters, 300 E. St SW, Washington, DC. 20546

#### asrcfederal.com

<https://gcc02.safelinks.protection.outlook.com/?url=https://www.asrcfederal.com/&data=04|01|alicia.n.brown@nasa.g ov|10a7a2b919424dd22dc708d9212eeca1|7005d45845be48ae8140d43da96dd17b|0|0|637577307679134585|Unkno wn|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQljoiV2luMzliLCJBTil6lk1haWwiLCJXVCl6Mn0=|1000&sdata=rGVzd Nskm/epbY6da+oZlnpg8OxA+fjN4Xl49TiuPhg=&reserved=0>|Purpose Driven. Enduring Commitment.

From: "Fox, Karen C. (GSFC-1300)" <karen.c.fox@nasa.gov>

#### Date: Thursday, May 27, 2021 at 8:30 AM

To: "Etkind, Marc R. (HQ-NA000)" <marc.r.etkind@nasa.gov>, "Stephenson, Johnny F. (MSFC-NA000)" <johnny.f.stephenson@nasa.gov>, "Thompson, Tabatha T. (HQ-NA020)" <tabatha.t.thompson@nasa.gov>, "Beutel, Allard (HQ-NA020)" <allard.beutel@nasa.gov>, "McGuinness, Jackie (HQ-NA000)" <jackie.mcguinness@nasa.gov> Cc: "Johnson, Alana R. (HQ-DG000)[ASRC FEDERAL SYSTEM SOLUTIONS]" <alana.r.johnson@nasa.gov>, "Handal, Joshua A. (HQ-DG000)[ASRC FEDERAL SYSTEM SOLUTIONS]" <joshua.a.handal@nasa.gov> Subject: Re: Talking points for the Administrator: Unidentified Aerial Phenomena

Sounds good – we're planning on a more traditional and longer talking points/RTQs document for the comms office/everyone's use and we'll get that extra detail in there.

OK to take a couple days to pull it together? Or do you need that extra info ASAP?

--

Karen C. Fox

Senior Science Communications Officer

Office of Communications

From: "Etkind, Marc R. (HQ-NA000)" <marc.r.etkind@nasa.gov>

Date: Thursday, May 27, 2021 at 8:27 AM

To: "Fox, Karen C. (GSFC-1300)" <karen.c.fox@nasa.gov>, "Stephenson, Johnny F. (MSFC-NA000)" <johnny.f.stephenson@nasa.gov>, "Thompson, Tabatha T. (HQ-NA020)" <tabatha.t.thompson@nasa.gov>, "Beutel, Allard (HQ-NA020)" <allard.beutel@nasa.gov>, "McGuinness, Jackie (HQ-NA000)" <jackie.mcguinness@nasa.gov> Cc: "Johnson, Alana R. (HQ-DG000)[ASRC FEDERAL SYSTEM SOLUTIONS]" <alana.r.johnson@nasa.gov>, "Handal, Joshua A. (HQ-DG000)[ASRC FEDERAL SYSTEM SOLUTIONS]" <joshua.a.handal@nasa.gov> Subject: Re: Talking points for the Administrator: Unidentified Aerial Phenomena

Thanks all for pulling this together and interestingly didn't see much buzz around the op ed. Anyone else see anything? I'd like to have some more (b) (5)

(b) (5)	
(b) (5)	Thx

From: "Fox, Karen C. (GSFC-1300)" <karen.c.fox@nasa.gov> Date: Wednesday, May 26, 2021 at 5:19 PM

To: "Etkind, Marc R. (HQ-NA000)" <marc.r.etkind@nasa.gov>, "Stephenson, Johnny F. (MSFC-NA000)" <johnny.f.stephenson@nasa.gov>, "Thompson, Tabatha T. (HQ-NA020)" <tabatha.t.thompson@nasa.gov>, "Beutel, Allard (HQ-NA020)" <allard.beutel@nasa.gov>, "McGuinness, Jackie (HQ-NA000)" <jackie.mcguinness@nasa.gov> Cc: "Johnson, Alana R. (HQ-DG000)[ASRC FEDERAL SYSTEM SOLUTIONS]" <alana.r.johnson@nasa.gov>, "Handal, Joshua A. (HQ-DG000)[ASRC FEDERAL SYSTEM SOLUTIONS]" <joshua.a.handal@nasa.gov> Subject: Talking points for the Administrator: Unidentified Aerial Phenomena

Cheers, all -

After talking to Marc this afternoon – and with an added request from Jackie to make sure UFO's were addressed – please find attached, and cut and pasted below, bullet points on Unidentified Aerial Phenomena. Which may be of use to Sen. Nelson.

These have been reviewed by members of SMD. We'll also put together a more formal RTQ document for the comms

team within the next day or two with extra detail.

Thanks,

Karen

Talking Points: Unidentified Aerial Phenomena



---

Karen C. Fox

Senior Science Communications Officer

Office of Communications

NASA Headquarters

Karen.fox@nasa.gov

### **RE: Talking points for UAP report**

From:	Lal, Bhavya (HQ-AA000) <bhavya.lal@nasa.gov></bhavya.lal@nasa.gov>
To:	Quinn, Susie Perez (HQ-AH000) <susie.p.quinn@nasa.gov>, Brown, Alicia N. (HQ-VA000) <alicia.n.brown@nasa.gov>, Dalton, Bale (HQ-AH000)   <bale.dalton@nasa.gov>, Etkind, Marc R. (HQ-NA000) <marc.r.etkind@nasa.gov>, McGuinness, Jackie (HQ-NA000) <jackie.mcguinness@nasa.gov></jackie.mcguinness@nasa.gov></marc.r.etkind@nasa.gov></bale.dalton@nasa.gov></alicia.n.brown@nasa.gov></susie.p.quinn@nasa.gov>
Sent:	June 9, 2021 3:11:55 PM EDT
Received:	June 9, 2021 3:11:55 PM EDT

Ya'll need to watch the movie Europa Report (2018 I think) this weekend. It's free on the interwebs:

https://www.youtube.com/watch?v=MLBxd2xxnZ4

<https://gcc02.safelinks.protection.outlook.com/?url=https://www.youtube.com/watch?v=MLBxd2xxnZ4&data=04|01|ali cia.n.brown@nasa.gov|8163c30b3417449b463e08d92b7a725b|7005d45845be48ae8140d43da96dd17b|0|0|6375886 27159949528|Unknown|TWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6Ik1haWwiLCJXVCI6Mn0 =|1000&sdata=GjFl2Hcq7aaj/EUp67d78Gj3fbrOf6T40X1+Kcxvxhk=&reserved=0>

From: Quinn, Susie Perez (HQ-AH000) <susie.p.quinn@nasa.gov>

Sent: Wednesday, June 9, 2021 1:51 PM

To: Lal, Bhavya (HQ-AA000) <bhavya.lal@nasa.gov>; Brown, Alicia N. (HQ-VA000) <alicia.n.brown@nasa.gov>; Dalton, Bale (HQ-AH000) <br/>bale.dalton@nasa.gov>; Etkind, Marc R. (HQ-NA000) <marc.r.etkind@nasa.gov>; McGuinness, Jackie (HQ-NA000) <jackie.mcguinness@nasa.gov><br/>Subject: RE: Talking points for UAP report

#### WOW

From: Lal, Bhavya (HQ-AA000) <bhavya.lal@nasa.gov> Sent: Wednesday, June 9, 2021 1:09 PM To: Brown, Alicia N. (HQ-VA000) <alicia.n.brown@nasa.gov>; Dalton, Bale (HQ-AH000) <bale.dalton@nasa.gov>; Etkind, Marc R. (HQ-NA000) <marc.r.etkind@nasa.gov>; Quinn, Susie Perez (HQ-AH000) <susie.p.quinn@nasa.gov>; McGuinness, Jackie (HQ-NA000) <jackie.mcguinness@nasa.gov> Subject: RE: Talking points for UAP report

Mark my words. This is what Europa's oceans would look like when we get there with our submarine:

From: Brown, Alicia N. (HQ-VA000) <alicia.n.brown@nasa.gov> Sent: Wednesday, June 9, 2021 12:01 PM To: Lal, Bhavya (HQ-AA000) <bhavya.lal@nasa.gov>; Dalton, Bale (HQ-AH000) <bale.dalton@nasa.gov>; Etkind, Marc R. (HQ-NA000) <marc.r.etkind@nasa.gov>; Quinn, Susie Perez (HQ-AH000) <susie.p.quinn@nasa.gov>; McGuinness, Jackie (HQ-NA000) <jackie.mcguinness@nasa.gov> Subject: RE: Talking points for UAP report

And the search for life was added to NASA's charter in the 2017 auth bill, that Nelson helped author.

From: Lal, Bhavya (HQ-AA000) <bhavya.lal@nasa.gov>

Sent: Wednesday, June 9, 2021 11:55 AM

To: Dalton, Bale (HQ-AH000) <bale.dalton@nasa.gov>; Etkind, Marc R. (HQ-NA000) <marc.r.etkind@nasa.gov>; Brown, Alicia N. (HQ-VA000) <alicia.n.brown@nasa.gov>; Quinn, Susie Perez (HQ-AH000) <susie.p.quinn@nasa.gov>; McGuinness, Jackie (HQ-NA000) <jackie.mcguinness@nasa.gov> Subject: RE: Talking points for UAP report

Agree 100%. We don't have to repeat what they are saying (b) (5) NASA's

charter is to discover life in the universe, and we are working hard to do that.

(b) (5)

(b) (5)

#### В

From: Dalton, Bale (HQ-AH000) <bale.dalton@nasa.gov> Sent: Wednesday, June 9, 2021 11:52 AM To: Lal, Bhavya (HQ-AA000) <bhavya.lal@nasa.gov>; Etkind, Marc R. (HQ-NA000) <marc.r.etkind@nasa.gov>; Brown, Alicia N. (HQ-VA000) <alicia.n.brown@nasa.gov>; Quinn, Susie Perez (HQ-AH000) <susie.p.quinn@nasa.gov>; McGuinness, Jackie (HQ-NA000) <jackie.mcguinness@nasa.gov> Subject: RE: Talking points for UAP report

Marc, Team,

On initial read I find the guidance Bhavya was able to retrieve to be (b) (5) (b) (5) that I think (b) (5)

(b) (5) "we are a scientific discovery agency and we will continue to fulfill all parts of our charter. Bottom line, we want to know!"

My two cents.

Thanks,

RBD

From: Lal, Bhavya (HQ-AA000) <bhavya.lal@nasa.gov>

Sent: Tuesday, June 8, 2021 5:09 PM

```
To: Etkind, Marc R. (HQ-NA000) <marc.r.etkind@nasa.gov>; Brown, Alicia N. (HQ-VA000) 
<alicia.n.brown@nasa.gov>; Quinn, Susie Perez (HQ-AH000) <susie.p.quinn@nasa.gov>; Dalton, Bale (HQ-AH000) 
<bale.dalton@nasa.gov>; McGuinness, Jackie (HQ-NA000) <jackie.mcguinness@nasa.gov> 
Subject: Talking points for UAP report
```

See attached.

Marc - you know Patrick. Right? Feel free to follow up.

I'll read the final clearance draft first thing tomorrow.

Bhavya Lal, Ph.D.

(b) (6)

Begin Forwarded Message:

From: "Evans, Patrick L. EOP/NSC" <	(b) (6)	>
Subject: RE: [EXTERNAL] RE: Talking poin	ts for UAP report	
Date: 08 June 2021 17:02		
To: "Schaffer, Audrey M. EOP/NSC"	(b) (6)	>, "Lal, Bhavya (HQ-AA000)"
<bhavya.lal@nasa.gov></bhavya.lal@nasa.gov>		

Cc: "Forrest, Christopher D. EOP/NSC" < (b) (6)
Good afternoon Bhavya –
Attached are two docs:
1)NSC Press Guidance for UAPs
2)OSD Briefing Card for UAPs
Also Here is the email address for ODNI public affairs (b) (6) . Monica/ODNI has the press and can speak to ODNI's talking points and the eventual rollout.
Sue Gough - (b) (6) – is the lead at OSD Press Operations.
Please let me know if this is what you need. Thanks!
Patrick
Very Respectfully,
Patrick Evans, APR
Director for Strategic Communications and Assistant Press Secretary
National Security Council
E (b) (6)
Office: (b) (6) Mobile:
From: Schaffer, Audrey M. EOP/NSC < (b) (6)
Sent: Luesday, June 8, 2021 4:37 PM
Cc: Forrest, Christopher D. EOP/NSC < (b) (6) Evans, Patrick L. EOP/NSC
< (b) (6)
Subject: RE: [EXTERNAL] RE: Talking points for UAP report
Bhavya,

I'm looping in Patrick Evans from NSC Press. In talking with Chris Forrest, it sounds like Patrick can both send you the current EOP press guidance on UAPs and connect you with PA folks from DOD and DNI PA who would have more detailed guidance that you can pull from.

Audrey

On: 08 June 2021 14:16, "Schaffer, Audrey M. EOP/NSC" < (b) (6) wrote:

Bhavya

Thanks for the follow-up - great to see you as well!

I'm looping in my colleague Chris Forrest. He is our lead for the UAP report and should be able to share what we have and/or point you to PA colleagues in DOD and DNI to work directly with.

Audrey

From: Lal, Bhavya (HQ-AA000) <br/>bhavya.lal@nasa.gov><br/>Sent: Tuesday, June 8, 2021 2:07 PM<br/>To: Schaffer, Audrey M. EOP/NSC < (b) (6)<br/>Subject: Talking points for UAP report

Hi Audrey. Great seeing you today. Wanted to coordinate NASA talking points on the UAP report with those of NSC to the extent possible. Any thoughts on that front would be most welcome! Best and come visit us at NASA! Bhavya

Bhavya Lal, Ph.D.

(b) (6)

### Re: Talking points for UAP report

From:	Etkind, Marc R. (HQ-NA000) <marc.r.etkind@nasa.gov></marc.r.etkind@nasa.gov>
To:	Brown, Alicia N. (HQ-VA000) <alicia.n.brown@nasa.gov>, Lal, Bhavya (HQ-AA000) <bhavya.lal@nasa.gov>, Dalton, Bale (HQ-AH000) <bale.dalton@nasa.gov>, Quinn, Susie Perez (HQ-AH000) <susie.p.quinn@nasa.gov>, McGuinness, Jackie (HQ- NA000) <jackie.mcguinness@nasa.gov></jackie.mcguinness@nasa.gov></susie.p.quinn@nasa.gov></bale.dalton@nasa.gov></bhavya.lal@nasa.gov></alicia.n.brown@nasa.gov>
Sent:	June 9, 2021 1:07:40 PM EDT
Received:	June 9, 2021 1:07:42 PM EDT

All good guidance and appreciated!

On: 09 June 2021 12:00, "Brown, Alicia N. (HQ-VA000)" <alicia.n.brown@nasa.gov> wrote:

# DUPLICATE-ALREADY PROCESSED

From: Lal, Bhavya (HQ-AA000) <bhavya.lal@nasa.gov>

Sent: Wednesday, June 9, 2021 11:55 AM



JPLICATE-ALREADY PROCESSED

From: Dalton, Bale (HQ-AH000) <bale.dalton@nasa.gov>

Sent: Wednesday, June 9, 2021 11:52 AM



## Attachment

#### 1. 2021 0517 BC UAP Report to Congress v3.docx

Туре:	application/vnd.openxmlformats-officedocument.wordprocessingml.document
Size:	45 KB (46,857 bytes)

#### 2. 2021 0603 Unidentified Aerial Phenomena.docx

Type:application/vnd.openxmlformats-officedocument.wordprocessingml.documentSize:19 KB (20,360 bytes)

# Attachment #1 2021 0517 BC UAP Report to Congress v3.docx

## **Original view**

3 pages (displayed on pages 6 to 8)

# REFERRED TO OSD

# REFERRED TO OSD

# REFERRED TO OSD

# Attachment #2 2021 0603 Unidentified Aerial Phenomena.docx

## **Original view**

2 pages (displayed on pages 10 to 11)







###
### FW: Q for SMD on Technosignatures in Auth Bill (no attachments)

From:	Irving, Richard R. (HQ-VA030) <richard.r.irving@nasa.gov></richard.r.irving@nasa.gov>
То:	Brown, Alicia N. (HQ-VA000) <alicia.n.brown@nasa.gov>, Flaherty, Christopher J. (HQ-VA030) <christopher.j.flaherty@nasa.gov></christopher.j.flaherty@nasa.gov></alicia.n.brown@nasa.gov>
Cc:	Muncy, Maureen (HQ-VA020) <maureen.muncy-1@nasa.gov></maureen.muncy-1@nasa.gov>
Sent:	June 30, 2021 5:59:13 PM EDT
Received:	June 30, 2021 5:59:14 PM EDT

Looks like we're good on technosignatures; please see below.

Personally, I will be delighted if JWST starts picking up Dyson Spheres; supposedly, they'd show up in the deep infrared.

Regards,

--Rick

Richard R. Irving

Office of Legislative and Intergovernmental Affairs

National Aeronautics and Space Administration

(202) 358-0084

richard.r.irving@nasa.gov

From: Rowe, Andrew (HQ-VA030) <andrew.rowe@nasa.gov> Sent: Wednesday, June 30, 2021 5:55 PM To: Irving, Richard R. (HQ-VA030) <richard.r.irving@nasa.gov> Subject: RE: Q for SMD on Technosignatures in Auth Bill (no attachments)

Short answer is yes. Key word in (4) –	(b) (5)	Key word in 5	(b) (5)	if the word
(k	))	(5	)	
See the below re: RTQ on this related to UA (b) (5)	P item recent	ly. This language is key:	(b) (5)	

The Exobiology Program removed the language prohibiting technosignatures research but continued to prohibit proposals for ground-based, radio-telescope searches for technosignatures. The latter restriction stems from NASA's policy of supporting astrophysical research using space-based assets.

The 2021 Intelligence Authorization Act, signed in December 2020, stipulated that the government had 180 days to gather and analyze data about UAPs from disparate agencies. The report is expected to be released in early June.

Has NASA been asked to contribute to this report?

NASA anticipates seeing this report through the normal interagency coordination process.

What are technosignatures?

Technosignatures represent any sign of technology that we can use to infer the existence of intelligent life elsewhere in the universe, including familiar objects or searches for extraterrestrial intelligence such as narrow-band radio signals or pulsed lasers. The term SETI (Search for Extraterrestrial Intelligence) often is used synonymously with the search for technosignatures. Technosignatures are comparable to biosignatures in that they are a detectable sign of extant or extinct life.

NASA funding for radio SETI searches was stopped by Congress in 1992. Excluding the recent NASA grant to Adam Frank et al., were there any other NASA-funded efforts on SETI/technosignatures in the intervening years?

Yes, there were instrument development awards made to develop equipment for larger and faster searches for radio technosignatures. We also funded a Topical Workshops, Symposia, and Conference (TWSC) to develop a research agenda to prioritize and guide future theoretical and observational studies of non-radio technosignatures, and to draft a publishable report that can serve as the basis for building a library of technosignatures.

Was there explicit language in funding calls, especially in astrobiology and astrophysics, that excluded SETI/technosignatures proposals, prior to 2018?

Technosignatures research — then termed SETI research — was excluded from the Exobiology solicitation as a programmatic decision of NASA's Astrobiology Program. At the time, the majority of technosignature searches were radio searches and, with the creation of SETI's Paul Allen (Radio-) Telescope Array and Breakthrough Listen. As a steward of taxpayer funds, the Astrobiology Program determined that sufficient private funding was available for radio searches for extraterrestrial signals and Astrobiology Program funding was reallocated to other research, such as understanding how advanced life would modify physical and chemical characteristics of a planet and what a "technosignature" might look like.

What prompted the very-rapidly-organized NASA Technosignatures Workshop in Houston in 2018?

It was thought that our understanding of biosignatures and exoplanets had grown enough so that a discussion of technosignatures could be held on a firmer scientific foundation than before.

Was the language in funding calls changed after the workshop to allow or even encourage proposals related to SETI and technosignatures?

Yes. The Exobiology Program removed the language prohibiting technosignatures research but continued to prohibit proposals for ground-based, radio-telescope searches for technosignatures. The latter restriction stems from NASA's policy of supporting astrophysical research using space-based assets.

Are radio SETI searches still excluded from funding calls?

If NASA data is used in addition to ground-based radio-telescope data, such proposals may be submitted to the Astrophysics Data Analysis Program.

From: Irving, Richard R. (HQ-VA030) <richard.r.irving@nasa.gov> Sent: Wednesday, June 30, 2021 5:28 PM To: Rowe, Andrew (HQ-VA030) <andrew.rowe@nasa.gov> Subject: Q for SMD on Technosignatures in Auth Bill (no attachments)

Andy,

Alicia and Chris are working to consolidate our comments for OMB on the subject bill, but are trying to delete items with which we have no problems. Could you please let me know if Section 2633, below, is consistent with SMD's current plans (esp. the "technosignatures" portion)?

Thanks,

--Rick



Richard R. Irving

Office of Legislative and Intergovernmental Affairs

National Aeronautics and Space Administration

(202) 358-0084

richard.r.irving@nasa.gov

### **RE: Hearing Questions and Toplines**

From:	Brown, Alicia N. (HQ-VA000) ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=71E42AF1E7894AE3828A6CACAF5A3 153-BROWN, ALIC>
To:	Quinn, Susie Perez (HQ-AH000) <susie.p.quinn@nasa.gov>, Kerwin, Mary D. (HQ- IA000) <mary.d.kerwin@nasa.gov>, Belson, DaMara (HQ-IA000) <damara.m.belson@nasa.gov>, McGuinness, Jackie (HQ-NA000) <jackie.mcguinness@nasa.gov>, Etkind, Marc R. (HQ-NA000) <marc.r.etkind@nasa.gov></marc.r.etkind@nasa.gov></jackie.mcguinness@nasa.gov></damara.m.belson@nasa.gov></mary.d.kerwin@nasa.gov></susie.p.quinn@nasa.gov>
Sent:	June 10, 2021 2:33:05 PM EDT
Received:	June 10, 2021 2:33:00 PM EDT

My thoughts on key issues he needs to be prepared for:



From: Quinn, Susie Perez (HQ-AH000) <susie.p.quinn@nasa.gov>

Sent: Thursday, June 10, 2021 2:06 PM

To: Kerwin, Mary D. (HQ-IA000) <mary.d.kerwin@nasa.gov>; Belson, DaMara (HQ-IA000) <damara.m.belson@nasa.gov>; McGuinness, Jackie (HQ-NA000) <jackie.mcguinness@nasa.gov>; Brown, Alicia N. (HQ-VA000) <alicia.n.brown@nasa.gov>; Etkind, Marc R. (HQ-NA000) <marc.r.etkind@nasa.gov> Subject: FW: Hearing Questions and Toplines

From: Quinn, Susie Perez (HQ-AH000) Sent: Wednesday, May 19, 2021 7:06 AM To: Nelson, Bill (HQ-AA000) <bill.nelson@nasa.gov> Cc: Brown, Alicia N. (HQ-VA000) <alicia.n.brown@nasa.gov>; Kerwin, Mary D. (HQ-IA000) <mary.d.kerwin@nasa.gov>; Miller, Helen G. (HQ-AA000) <helen.g.miller@nasa.gov>; Massey, Natalie (HQ-AB000) <natalie.massey@nasa.gov>; McGuinness, Jackie (HQ-NA000) <jackie.mcguinness@nasa.gov> Subject: Hearing Questions and Toplines

Good morning,

Please find attached a topline sheet and revised hearing questions based on yesterday's briefing.

Susie Perez Quinn

Chief of Staff

Susie.p.quinn@nasa.gov

Office of the Administrator | NASA Headquarters

300 E Street SW, Washington DC

### **Re: National Academy review of UAP report**

From:	Etkind, Marc R. (HQ-NA000) <marc.r.etkind@nasa.gov></marc.r.etkind@nasa.gov>
То:	Lal, Bhavya (HQ-AA000) <bhavya.lal@nasa.gov></bhavya.lal@nasa.gov>
Sent:	June 20, 2021 6:36:41 PM EDT
Received:	June 20, 2021 6:36:41 PM EDT

Sure. My two cents... I like where he's headed—seems like a scientific approach, and the rigor that Spergel suggests, can add much to the discussion.

From: Bhavya Lal <bhavya.lal@nasa.gov> Date: Sunday, June 20, 2021 at 6:31 PM To: "Etkind, Marc R. (HQ-NA000)" <marc.r.etkind@nasa.gov> Subject: Re: National Academy review of UAP report

Thomas has asked to take point. Should we hand off to him? We have plenty on our plates. Thoughts?

Bhavya Lal, Ph.D.

(b) (6)

On: 20 June 2021 18:29, "Etkind, Marc R. (HQ-NA000)" <marc.r.etkind@nasa.gov> wrote:

Just getting caught up and thanks for sharing... what's the next step?

From: Bhavya Lal <br/>
bhavya.lal@nasa.gov><br/>
Date: Tuesday, June 15, 2021 at 5:52 AM<br/>
To: "Etkind, Marc R. (HQ-NA000)" <marc.r.etkind@nasa.gov>, "Brown, Alicia N. (HQ-VA000)"<br/>
<alicia.n.brown@nasa.gov>, "Quinn, Susie Perez (HQ-AH000)" <susie.p.quinn@nasa.gov>, "Dalton, Bale (HQ-AH000)" <br/>
bale.dalton@nasa.gov><br/>
Subject: Fwd: National Academy review of UAP report

See below. Let's discuss! I think we should also talk to the authors of the report to understand how much of the data can be declassified.

Bhavya Lal, Ph.D.

#### (b) (6)

Begin Forwarded Message:

From: "Zurbuchen, Thomas H. (HQ-DA000)" <thomas.h.zurbuchen@nasa.gov> Subject: RE: National Academy review of UAP report Date: 14 June 2021 23:27 To: "Lal, Bhavya (HQ-AA000)" <bhavya.lal@nasa.gov>

Bhavya - we need to decide what we want to do. The Academy has struggled, over time, to be forward leaning and I

worry that asking too early for an Academy study would actually miss the point. It is not quite clear what we would want them to do- this is not a data-rich field. About data: here is my worry about the UAP work by the Intel community:

	(b) (5)	
(b) (5)	I do not know whether <mark>h5</mark>	
Instead I would like to focus on	F	I would like to pull
		: I weak like to pair
together a group of experts within	NASA and describe a	
discussed in the UAP report. It m	ight also make sense to do an <mark>b5</mark>	to see whether
there is anything interesting there	e. My hope would be to turn this into a data-rich f	ield. I would not be opposed to take
that plan and let it be reviewed by	/ the Academy and perhaps even <b>65</b>	<sup>33</sup> .

For reference, I am attaching two white papers that I had leading scholars write indepdently. One of them is perhaps the most influential Astrophysicist in the US, Dave Spergel, and the other one is perhaps the most forward leaning in the field, Avi Loeb. Google both if you want to know more. You see how much they overlap! Again – let's make this data-rich!

You could ask, finally: why do anything? I would answer in three ways

1. Why miss a chance to demonstrate the power of science and the power of data to address a tough problem?

2. I DO want NASA to be a place where we focus on high-risk/high-impact science. We do not just walk away when something is sounding controversial

3. The administrator sounds like he would like us to do something

Best,

Thomas

From: Lal, Bhavya (HQ-AA000) <bhavya.lal@nasa.gov> Sent: Monday, June 14, 2021 10:36 AM To: Zurbuchen, Thomas H. (HQ-DA000) <thomas.h.zurbuchen@nasa.gov> Subject: RE: National Academy review of UAP report

Thoughts on an Academies study on this topic?

From: Turner, Ron (HQ-UA000)[MIPSS SME] <ron.turner@nasa.gov> Sent: Thursday, June 10, 2021 11:54 AM To: Lal, Bhavya (HQ-AA000) <bhavya.lal@nasa.gov> Cc: Turner, Ron

Bhavya, I enjoyed our discussion this morning. Here are some thoughts about a NASA-sponsored, National Academyled study following the release of the UAP report.

The public is going to be very interested in following up on the findings of the UAP report after it is released to Congress. A general concern with the classified nature of the report may be a sense that the government is still "hiding something". I think there will be a natural expectation that NASA would respond in some fashion.

One possible response would be for NASA to direct the National Academies to do an independent review of the findings of the UAP report. NASA, working with the Academies, is uniquely positioned as a source of trust, imparting a

healthy dose of skepticism while open to hearing from the more eager advocates. It would be a way to establish confidence in the findings and to see if there is anything in the observations that warrant further examination or could improve future observations. It would be staffed by objective academic and industry experts who could bring a critical eye to the data and the limits of the available observations.

The task statement will evolve, as the report is released and in negotiation with Congress. But some specific objectives could be:



I would be happy to continue to work with you to formulate a work statement. Let me know if I can help.

Hope to see you some time!

Ron T.

### **RE: National Academy review of UAP report**

From:	Quinn, Susie Perez (HQ-AH000) <susie.p.quinn@nasa.gov></susie.p.quinn@nasa.gov>
To:	Lal, Bhavya (HQ-AA000) <bhavya.lal@nasa.gov>, Etkind, Marc R. (HQ-NA000) <marc.r.etkind@nasa.gov>, Brown, Alicia N. (HQ-VA000) <alicia.n.brown@nasa.gov>, Dalton, Bale (HQ-AH000) <bale.dalton@nasa.gov></bale.dalton@nasa.gov></alicia.n.brown@nasa.gov></marc.r.etkind@nasa.gov></bhavya.lal@nasa.gov>
Sent:	June 15, 2021 6:37:12 AM EDT
Received:	June 15, 2021 6:37:13 AM EDT

Two cents. Like his approach. Am curious why this hasn't been done before and how to also ensure we are not encroaching on current DOD or other agency activities. Also if there is room to coordinate w a civilian agency tho not sure who that would be.

From: Lal, Bhavya (HQ-AA000) <bhavya.lal@nasa.gov> Sent: Tuesday, June 15, 2021 5:51 AM To: Etkind, Marc R. (HQ-NA000) <marc.r.etkind@nasa.gov>; Brown, Alicia N. (HQ-VA000) <alicia.n.brown@nasa.gov>; Quinn, Susie Perez (HQ-AH000) <susie.p.quinn@nasa.gov>; Dalton, Bale (HQ-AH000) <bale.dalton@nasa.gov> Subject: Fwd: National Academy review of UAP report

See below. Let's discuss! I think we should also talk to the authors of the report to understand how much of the data can be declassified.

Bhavya Lal, Ph.D.

(b) (6)

Begin Forwarded Message:

From: "Zurbuchen, Thomas H. (HQ-DA000)" <thomas.h.zurbuchen@nasa.gov> Subject: RE: National Academy review of UAP report Date: 14 June 2021 23:27 To: "Lal, Bhavya (HQ-AA000)" <bhavya.lal@nasa.gov>

### Duplicate email already processed

### Attachment

### 1. Microsoft Word - Extraterrestrial or Terrestrial origin.docx.pdf

Туре:	application/pdf
Size:	867 KB (887,863 bytes)

### 2. Thomas\_Zurbuchen\_AL.pdf

Туре:	application/pdf
Size:	229 KB (234,621 bytes)

# Attachment #1 Microsoft Word - Extraterrestrial or Terrestrial origin.docx.pdf

### **Original view**

3 pages (displayed on pages 6 to 8)

### **Thoughts on UFOs**

David Spergel

The recent publication of observations of unidentified flying objects (UFOs) has stimulated a revived interest in the possibility of extraterrestrial visitors. This note describes possible hypotheses about the nature of UFOs, outlines key observables, and then suggests possible observing programs with an emphasis on approaches that will lead to interesting science even if UFOs have terrestrial origin.

### What are they?

The most conservative hypothesis is that these UFOs are built by humans: experimental vehicles under development by the US military or by foreign militaries. In the past, famous UFO sites (e.g., Area 51) have turned out to be test sites for advanced technologies. Some of the "triangular shaped" objects that are capable of rapid accelerations and high speeds do seem remarkably similar to descriptions of hypersonic vehicles that are currently under development by the Army, <u>Navy</u>, <u>Air Force</u>, <u>DARPA</u> and the <u>NSA</u> The <u>Indian</u>, <u>Chinese</u> and <u>Russian</u> military are all developing their own hypersonic vehicles. DARPA's HTV-2 had test flights over a decade ago so that the recent appearance of flying triangular shaped objects that can reach high speeds seems consistent with this hypothesis. There is also extensive work on developing <u>drone</u> <u>swarms</u> by many nations (including even Armenia) whose properties match some UFO reports.



Image of the Indian HGV-2, one of many hypersonic vehicles that are being tested and deployed.

Another possible explanation for some of the events are natural phenomena such as <u>Ball</u> <u>lightning</u> or St. Elmo Fire. Plasma physicists and atmospheric physicists are still struggling to fully understand these phenomena. Recent work associates these events with lightning induced quasi-stable plasma effects (see e.g., <u>Skyrmion origin of ball lightning</u>). Some of the events could be optical illusions due to multiple reflections in airplane windows or atmospheric effects.

The most exciting hypothesis is that some of the UFOs are extraterrestrials visiting the Earth and studying the planet and its life forms. Aliens capable of interstellar space travel are not likely to be using technologies that are familiar to us (e.g., solar sails or hypersonic airbreathing vehicles). They would only be detectable if they wished to be seen. For example, they would likely want to miniaturize their probes and not likely to have familiar-looking vehicles. Given astronomical timescales, alien life is likely either a billion years less advanced than human life or a billion years more advanced technologically. As <u>Clarke's third law</u> states, "any sufficiently advanced technology is indistinguishable from magic".

### Observables

What are the observables that can distinguish between these hypotheses? We would like to characterize the UFO events: What is their duration? What is the amplitude of the observed accelerations and velocities? How frequent are these events? Are they associated with weather phenomena? Where do the events occur? What are the properties of the objects? Do they have a surface of are they a plasma? Observations that can answer these questions can help identify the UFOs.

### Potential observational program

An observational program that monitors the sky for rapidly moving objects and for timevariability would likely be able to help address the origin of these UFOs. Ideally, these telescopes would be monitoring much of the sky continuously so that they could simultaneously observe the events reported by pilots.

There are several existing observing programs that could be used to extrapolate to an all-sky monitoring program. In the optical, the <u>ASAS</u> telescope and the <u>HATPI</u> project monitor a significant fraction of the sky. ASAS operates a network of telescopes in South Africa, Texas, Hawaii, and Chile. HAPTI uses a series of small cameras to monitor most of the sky visible from Chile. Currently, HATPI cover ¾ of the visible sky and detects 1% variations in 13<sup>th</sup> magnitude stars within 30 seconds. The approximate cost of HATPI was ~\$5 million, so that a program of making multiple copies of HATPI would not be overwhelmingly costly. This network would complement the Vera Rubin Observatory by enabling constant monitoring of transients, would detect transiting planets, and would be able to observe UFOs in clear weather. The telescopes are currently designed to operate at night and there would need to be significant modifications in the software for day-time operations. The biggest cost for these telescopes would be developing the software optimized for detecting fast moving objects and the ability to sort

through enormous databases and not be dominated by planes, birds, and human-made satellites.

#### Model of HATPI telescope



Microwave observations would be able to detect the thermal emission from objects in orbit or in the upper atmosphere. For example, consider a 0.5m telescope operating at 2mm with modern detectors. A one-meter diameter object at 20 km moving at 10 km/s subtends 10" and moves 2' in a millisecond. With a temperature of 300K, the UFO would appear as a 0.1K source. <u>Modern detectors</u> have noise variances of ~1 (mK)<sup>2</sup> s, so sources are > 10 sigma in a single detector in 1 millisecond. It would potentially be possible to build a set of small microwave telescopes that could monitor the sky and detect any moving satellite or plane. If these were also equipped with polarizers, they could be used for CMB polarization measurements. In the past year, CMB experiments have been repurposed to look for <u>astrophysical transients</u> and <u>planet IX</u>. They have not been used to look for rapidly moving objects.

Another possibility would be to monitor the sky at radio wavelengths using observatories based on the design of <u>CHIME</u> or <u>HIRAX</u>. These radio telescopes are already monitoring much of the sky (from Canada and eventually from South Africa) searching for <u>fast radio bursts</u>.

Downward-looking satellites could also monitor the earth's atmosphere for fast moving events. One potential approach would be to design "hitchhiker" instruments for satellites that could be downward looking. There are likely national reconnaissance organization capabilities that can already monitor the Earth for fast moving planes and rockets and existing earth science observations likely contain data that could be used to look for anomalous fast-moving objects.

For all these observational approaches, one of the challenges would be to balance the desire to protect national security with the desire to reassure the public that all the relevant information on UFOs was being revealed. Any observing program that could detecting UFO would also detect other flying objects including many classified satellites.

## Attachment #2

### Thomas\_Zurbuchen\_AL.pdf

### **Original view**

2 pages (displayed on pages 10 to 11)

# Scientific Study of UAPs and Techno-Signatures

By Avi Loeb on June 5, 2021

**A** report on Unidentified Aerial Phenomena (UAP) is expected to be delivered by the Pentagon and various intelligence agencies to Congress this month. The reality of UAPS is beyond doubt but their nature requires further scientific study. It is therefore an opportune time for NASA and the scientific community to take a closer look at UAP by collecting and analyzing new data with state-of-the-art instrumentation and computers.

The new data can be collected by cameras, telescopes and audio sensors, with capabilities far exceeding the equipment that provided the existing UAP data. This program provides a unique opportunity for demonstrating the power of science in resolving a question that is of great interest to society, namely: *"is the nature of UAP natural, human-made or extraterrestrial?"* Finding a clear answer on the basis of open data will establish confidence from the general public in evidence-based knowledge, as well as in the transparency and integrity of NASA and the federal government. The societal appreciation of science will double up on the successful development of a messenger-RNA vaccine that triggered the desired immune response to COVID-19 using a synthetic chemical.

Currently, the UAP mystery surrounding the inconclusive findings of the Pentagon report fuels unsubstantiated speculations. A decisive scientific experiment that would clarify the nature of UAPs will demonstrate the power of scientific research in clarifying the fog on a subject of huge importance to society.

The required instrumentation will likely include state-of-the-art cameras installed on widefield telescopes that scan the sky. The data stream will be processed by an advanced computer system that will store only the essential variable features. The focus on near-field aerial phenomenon is different from astronomical surveys of distant sources, such as the upcoming Legacy Survey of Space and Time (LSST) on the Vera C. Rubin Observatory.

The intriguing nature of UAP implies that irrespective of whether their origin is terrestrial or extraterrestrial, we will learn something new and exciting. Therefore, this research program is a win-win proposition.

The recommended instrumentation and observing plan will be defined by a scientific advisory committee, operating within a budgetary envelope defined by NASA.

The proposed initial members of the "UAP Task Force" are as follows:

Avi Loeb (Task Force Chair)

Pieter van Dokkum (Yale, optical/IR observer with expertise in wide field cameras) Wendy Freedman (U. Chicago; former director of the Carnegie Observatories) Andrea Ghez (UCLA; Optical/IR observer, adaptive optics expert; Nobel Laureate) Andrew Howard (Caltech, optical/IR observer with interest in SETI) Zeljko Ivezic (U. Washnigton, science director at LSST/VRO) Vicky Kaspi (McGill; radio observer; Shaw Prize Laureate) Ed Turner (Princeton, general purpose observer with interest in SETI) Tony Tyson (LSST/VRO Chief Scientist) Ravi Vikram (Caltech, radio observations with interest in SETI) Shelley A. Wright (UCSD, optical/IR observer with interest in SETI)

In parallel to the effort to understand the nature of UAPs, a funding program should be established to explore technological signature of extraterrestrial civilizations. Novel research directions that can be explored in this program include:

- Flyby photography of unusual interstellar objects like `Oumuamua
- Artificial lights on nightside of planets
- Unusual reflectance on the dayside of planets
- Search for artificial megastructures around other stars
- Search for industrial pollution in planetary atmospheres

An extensive overview of the scientific background underlying these studies is provided in a new (1,061 pages long) textbook, titled: "*Life In the Cosmos*", by Manasvi Lingam and Avi Loeb, to be published on June 29, 2021, by Harvard University Press.

### **ABOUT THE AUTHOR**



Avi Loeb

Avi Loeb is the founding director of Harvard University's Black Hole Initiative, director of the Institute for Theory and Computation at the Harvard-Smithsonian Center for Astrophysics, and the former longest-serving chair of the astronomy department at Harvard University (2011-2020). He chairs the advisory board for the Breakthrough Starshot project, and is a former member of the President's Council of Advisors on Science and Technology and a former chair of the Board on Physics and Astronomy of the National Academies. He is the bestselling author of "*Extraterrestrial: The First Sign of Intelligent Life Beyond Earth*".

### **Re: National Academy review of UAP report**

From:	Lal, Bhavya (HQ-AA000) <bhavya.lal@nasa.gov></bhavya.lal@nasa.gov>
To:	Etkind, Marc R. (HQ-NA000) <marc.r.etkind@nasa.gov></marc.r.etkind@nasa.gov>
Sent:	June 12, 2021 12:08:02 PM EDT
Received:	June 12, 2021 12:08:03 PM EDT
Received:	June 12, 2021 12:08:03 PM EDT

You can tell Bill it's a good idea :-). Reading now though

Bhavya Lal, Ph.D.

(b) (6)

On: 12 June 2021 11:55, "Etkind, Marc R. (HQ-NA000)" <marc.r.etkind@nasa.gov> wrote:

Love this idea of study. LMK how I can help support. Btw, thought this was a good read...

https://www.cnet.com/news/that-ufo-report-has-us-thinking-all-wrong-about-the-military

<https://gcc02.safelinks.protection.outlook.com/?url=https://www.cnet.com/news/that-ufo-report-has-us-thinking-all-wrong-about-the-

military&data=04|01|marc.r.etkind@nasa.gov|bbc56243c1e64a7d616608d92dbc4177|7005d45845be48ae8140d43da 96dd17b|0|0|637591108838333222|Unknown|TWFpbGZsb3d8eyJWljoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTil6Ik1 haWwiLCJXVCI6Mn0=|1000&sdata=ayEYXvAsby4v2pbcV+JL41hLNDXD8YBy7MX5IZxEeYo=&reserved=0>

From: "Quinn, Susie Perez (HQ-AH000)" <susie.p.quinn@nasa.gov>

Date: Thursday, June 10, 2021 at 2:14 PM To: Bhavya Lal <bhavya.lal@nasa.gov>, "Brown, Alicia N. (HQ-VA000)" <alicia.n.brown@nasa.gov>, "Dalton, Bale (HQ-AH000)" <bale.dalton@nasa.gov>, "Etkind, Marc R. (HQ-NA000)" <marc.r.etkind@nasa.gov>, "McGuinness, Jackie (HQ-NA000)" <jackie.mcguinness@nasa.gov> Subject: RE: National Academy review of UAP report

Bill will ask for input from Thomas Z- do you want to ask him for views?

From: Lal, Bhavya (HQ-AA000) <bhavya.lal@nasa.gov> Sent: Thursday, June 10, 2021 1:14 PM To: Quinn, Susie Perez (HQ-AH000) <susie.p.quinn@nasa.gov>; Brown, Alicia N. (HQ-VA000) <alicia.n.brown@nasa.gov>; Dalton, Bale (HQ-AH000) <bale.dalton@nasa.gov>; Etkind, Marc R. (HQ-NA000) <marc.r.etkind@nasa.gov>; McGuinness, Jackie (HQ-NA000) <jackie.mcguinness@nasa.gov> Subject: FW: National Academy review of UAP report

As I had mentioned this am, see below. Would BN be interested in such a study? Brings NASA in more centrally, and also the scientific community.

From: Turner, Ron (HQ-UA000)[MIPSS SME] <ron.turner@nasa.gov> Sent: Thursday, June 10, 2021 11:54 AM To: Lal, Bhavya (HQ-AA000) <bhavya.lal@nasa.gov> Cc: Turner, Ron <Ron.Turner@anser.org> Subject: National Academy review of UAP report my weekend.

### **RE: National Academy review of UAP report**

From:	Lal, Bhavya (HQ-AA000) <bhavya.lal@nasa.gov></bhavya.lal@nasa.gov>
To:	Quinn, Susie Perez (HQ-AH000) <susie.p.quinn@nasa.gov>, Brown, Alicia N. (HQ-VA000) <alicia.n.brown@nasa.gov>, Dalton, Bale (HQ-AH000) <bale.dalton@nasa.gov>, Etkind, Marc R. (HQ-NA000) <marc.r.etkind@nasa.gov>, McGuinness, Jackie (HQ-NA000) <jackie.mcguinness@nasa.gov></jackie.mcguinness@nasa.gov></marc.r.etkind@nasa.gov></bale.dalton@nasa.gov></alicia.n.brown@nasa.gov></susie.p.quinn@nasa.gov>
Sent:	June 10, 2021 2:18:41 PM EDT
Received:	June 10, 2021 2:18:43 PM EDT

I'll text him...

From: Quinn, Susie Perez (HQ-AH000) <susie.p.quinn@nasa.gov> Sent: Thursday, June 10, 2021 2:15 PM To: Lal, Bhavya (HQ-AA000) <bhavya.lal@nasa.gov>; Brown, Alicia N. (HQ-VA000) <alicia.n.brown@nasa.gov>; Dalton, Bale (HQ-AH000) <bale.dalton@nasa.gov>; Etkind, Marc R. (HQ-NA000) <marc.r.etkind@nasa.gov>; McGuinness, Jackie (HQ-NA000) <jackie.mcguinness@nasa.gov> Subject: RE: National Academy review of UAP report

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From: Lal, Bhavya (HQ-AA000) <bhavya.lal@nasa.gov> Sent: Thursday, June 10, 2021 1:14 PM To: Quinn, Susie Perez (HQ-AH000) <susie.p.quinn@nasa.gov>; Brown, Alicia N. (HQ-VA000) <alicia.n.brown@nasa.gov>; Dalton, Bale (HQ-AH000) <bale.dalton@nasa.gov>; Etkind, Marc R. (HQ-NA000) <marc.r.etkind@nasa.gov>; McGuinness, Jackie (HQ-NA000) <jackie.mcguinness@nasa.gov> Subject: FW: National Academy review of UAP report

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From: Turner, Ron (HQ-UA000)[MIPSS SME] <ron.turner@nasa.gov> Sent: Thursday, June 10, 2021 11:54 AM To: Lal, Bhavya (HQ-AA000) <bhavya.lal@nasa.gov> Cc: Turner, Ron

# DUPLICATE-ALREADY PROCESSED

### FW: For Awareness: Search for Life Web Feature for Publishing 6/25

From:	Rowe, Andrew (HQ-VA030) <andrew.rowe@nasa.gov></andrew.rowe@nasa.gov>
To:	Brown, Alicia N. (HQ-VA000) <alicia.n.brown@nasa.gov>, Flaherty, Christopher J. (HQ-VA030) <christopher.j.flaherty@nasa.gov>, Irving, Richard R. (HQ-VA030) <richard.r.irving@nasa.gov></richard.r.irving@nasa.gov></christopher.j.flaherty@nasa.gov></alicia.n.brown@nasa.gov>
Sent:	June 25, 2021 4:35:48 PM EDT
Received:	June 25, 2021 4:35:48 PM EDT

Not our report...

From: Fox, Karen C. (HQ-1300) <karen.c.fox@nasa.gov>

Sent: Friday, June 25, 2021 4:18 PM

To: Rowe, Andrew (HQ-VA030) <andrew.rowe@nasa.gov>; O'Connor, Courtney M (HQ-1862)[MORI ASSOCIATES INC] <courtney.m.oconnor@nasa.gov>; Belson, DaMara (HQ-IA000) <damara.m.belson@nasa.gov>; Kerwin, Mary D. (HQ-IA000) <mary.d.kerwin@nasa.gov>; Petree, Kirsten (HQ-DA000)[BOOZ ALLEN HAMILTON] <kirsten.petree@nasa.gov>; Bentley, Elaine M. (GSFC-619.0)[ADNET SYSTEMS INC] <elaine.m.bentley@nasa.gov>; Keshian, Jaclyn R. (HQ-VA010) <jaclyn.r.keshian@nasa.gov> Cc: Beutel, Allard (HQ-NA020) <allard.beutel@nasa.gov>; Thompson, Tabatha T. (HQ-NA020) <tabatha.t.thompson@nasa.gov>; Furfaro, Emily M. (HQ-DG000)[ASRC FEDERAL SYSTEM SOLUTIONS] <joshua.a.handal@nasa.gov>; Furfaro, Emily M. (HQ-D0000) <emily.furfaro@nasa.gov> Subject: Re: For Awareness: Search for Life Web Feature for Publishing 6/25

Oh. . . to be clear - WE are not releasing a report.

This is referencing the interagency Unidentified Aerial Phenomena report led by the Naval Intelligence Office. As the media has been particularly interested in UFOs and UAPs in advance of this report, and because the Administrator is interested in discussing them, we have been carefully working with SMD to figure out how best to talk about NASA's search for life – something we actually ARE involved with.

This feature is on that subject, and does not reference the Congressional report - but	(b) (5)



As far as we know the report has not yet been shared with Congress, but last we heard it was still planned for later today.

Thanks,

Karen

--

Karen C. Fox

Senior Science Communications Officer

Office of Communications

From: "Rowe, Andrew (HQ-VA030)" <andrew.rowe@nasa.gov> Date: Friday, June 25, 2021 at 4:11 PM To: "O'Connor, Courtney M (HQ-1862)[MORI ASSOCIATES INC]" <courtney.m.oconnor@nasa.gov>, "Belson, DaMara (HQ-IA000)" <damara.m.belson@nasa.gov>, "Kerwin, Mary D. (HQ-IA000)" <mary.d.kerwin@nasa.gov>, "Petree, Kirsten (HQ-DA000)[BOOZ ALLEN HAMILTON]" <kirsten.petree@nasa.gov>, "Bentley, Elaine M. (GSFC-619.0)[ADNET SYSTEMS INC]" <elaine.m.bentley@nasa.gov>, "Keshian, Jaclyn R. (HQ-VA010)" <jaclyn.r.keshian@nasa.gov>

Cc: "Beutel, Allard (HQ-NA020)" <allard.beutel@nasa.gov>, "Thompson, Tabatha T. (HQ-NA020)" <tabatha.t.thompson@nasa.gov>, "Fox, Karen C. (HQ-1300)" <karen.c.fox@nasa.gov>, "Handal, Joshua A. (HQ-DG000)[ASRC FEDERAL SYSTEM SOLUTIONS]" <joshua.a.handal@nasa.gov>, "Furfaro, Emily M. (HQ-DO000)" <emily.furfaro@nasa.gov>

Subject: Re: For Awareness: Search for Life Web Feature for Publishing 6/25

Hey so re: we are releasing a report . . . what report is this, whose report is this, and can we share the report with Congressional staff before/contemporaneously with release?

Thank you!

From: O'Connor, Courtney M (HQ-1862)[MORI ASSOCIATES INC] <courtney.m.oconnor@nasa.gov>

Sent: Friday, June 25, 2021 11:42 AM

To: Keshian, Jaclyn R. (HQ-VA000); Rowe, Andrew (HQ-VA030); Belson, DaMara (HQ-IA000); Kerwin, Mary D. (HQ-IA000); Petree, Kirsten (HQ-DA000)[BOOZ ALLEN HAMILTON]; Bentley, Elaine M. (GSFC-619.0)[ADNET SYSTEMS INC]

Cc: Beutel, Allard (HQ-NA020); Thompson, Tabatha T. (HQ-NA020); Fox, Karen C. (HQ-1300); Handal, Joshua A. (HQ-DG000)[ASRC FEDERAL SYSTEM SOLUTIONS]; Furfaro, Emily M. (HQ-DO000) Subject: For Awareness: Search for Life Web Feature for Publishing 6/25

Hi everyone,

Attached for awareness is a web feature about NASA's search for life and astrobiology-related missions that we are looking to publish today, 6/25. This will be timed with the UFO / UAP report that we are expecting to publish this afternoon.

Please let me know if there are any questions.

Thank you!

Courtney

Courtney O'Connor

NASA Headquarters

**Digital Media Strategist** 

Courtney.M.OConnor@nasa.gov

### Re: For Awareness: Search for Life Web Feature for Publishing 6/25

From:	Rowe, Andrew (HQ-VA030) <andrew.rowe@nasa.gov></andrew.rowe@nasa.gov>
То:	Flaherty, Christopher J. (HQ-VA030) <christopher.j.flaherty@nasa.gov></christopher.j.flaherty@nasa.gov>
Cc:	Brown, Alicia N. (HQ-VA000) <alicia.n.brown@nasa.gov>, Irving, Richard R. (HQ-VA030) <richard.r.irving@nasa.gov></richard.r.irving@nasa.gov></alicia.n.brown@nasa.gov>
Sent:	June 25, 2021 4:09:37 PM EDT
Received:	June 25, 2021 4:09:38 PM EDT

Yeah, the truth is out there

Andrew J. Rowe

Office of Legislative and Intergovernmental Affairs

NASA

(202)358-4269 o



From: Flaherty, Christopher J. (HQ-VA030) <christopher.j.flaherty@nasa.gov>

Sent: Friday, June 25, 2021 4:07:44 PM

To: Rowe, Andrew (HQ-VA030) <andrew.rowe@nasa.gov>

Cc: Brown, Alicia N. (HQ-VA000) <alicia.n.brown@nasa.gov>; Irving, Richard R. (HQ-VA030)

<richard.r.irving@nasa.gov>

Subject: RE: For Awareness: Search for Life Web Feature for Publishing 6/25

Would you investigate further. What UFO report are we publishing this afternoon, and can/should we get a heads up to staff?

From: Rowe, Andrew (HQ-VA030) <andrew.rowe@nasa.gov> Sent: Friday, June 25, 2021 4:00 PM To: Flaherty, Christopher J. (HQ-VA030) <christopher.j.flaherty@nasa.gov> Cc: Brown, Alicia N. (HQ-VA000) <alicia.n.brown@nasa.gov>; Irving, Richard R. (HQ-VA030) <richard.r.irving@nasa.gov> Subject: RE: For Awareness: Search for Life Web Feature for Publishing 6/25

To be clear, I learned that fact from this message, hence, I am sending it to you all.

From: Flaherty, Christopher J. (HQ-VA030) <christopher.j.flaherty@nasa.gov> Sent: Friday, June 25, 2021 3:58 PM To: Rowe, Andrew (HQ-VA030) <andrew.rowe@nasa.gov> Cc: Brown, Alicia N. (HQ-VA000) <alicia.n.brown@nasa.gov>; Irving, Richard R. (HQ-VA030) <richard.r.irving@nasa.gov> Subject: RE: For Awareness: Search for Life Web Feature for Publishing 6/25

Wait. What?

We are expecting to publish a UFO UAP report this afternoon? Is this right?

From: Irving, Richard R. (HQ-VA030) <richard.r.irving@nasa.gov> Sent: Friday, June 25, 2021 12:59 PM To: Rowe, Andrew (HQ-VA030) <andrew.rowe@nasa.gov>; Brown, Alicia N. (HQ-VA000) <alicia.n.brown@nasa.gov>; Flaherty, Christopher J. (HQ-VA030) <christopher.j.flaherty@nasa.gov> Subject: RE: For Awareness: Search for Life Web Feature for Publishing 6/25

I might watch "Close Encounters of the Third Kind" this weekend - that was a great film!

Maybe follow it up with "Earth vs. the Flying Saucers" (featuring Ray Harryhausen special effects!).

Regards,

--R

Richard R. Irving

Office of Legislative and Intergovernmental Affairs

National Aeronautics and Space Administration

(202) 358-0084

richard.r.irving@nasa.gov

From: Rowe, Andrew (HQ-VA030) <andrew.rowe@nasa.gov> Sent: Friday, June 25, 2021 12:44 PM To: Brown, Alicia N. (HQ-VA000) <alicia.n.brown@nasa.gov>; Flaherty, Christopher J. (HQ-VA030) <christopher.j.flaherty@nasa.gov>; Irving, Richard R. (HQ-VA030) <richard.r.irving@nasa.gov> Subject: Fwd: For Awareness: Search for Life Web Feature for Publishing 6/25

So 'search for life' feature to accompany UAP REPORT!!!!!!! See timing below.

From: O'Connor, Courtney M (HQ-1862)[MORI ASSOCIATES INC] <courtney.m.oconnor@nasa.gov> Sent: Friday, June 25, 2021 11:42 AM

DUPLICATE-ALREADY PROCESSED

### RE: For Awareness: Search for Life Web Feature for Publishing 6/25

From:	Rowe, Andrew (HQ-VA030) <andrew.rowe@nasa.gov></andrew.rowe@nasa.gov>
To:	Flaherty, Christopher J. (HQ-VA030) <christopher.j.flaherty@nasa.gov></christopher.j.flaherty@nasa.gov>
Cc:	Brown, Alicia N. (HQ-VA000) <alicia.n.brown@nasa.gov>, Irving, Richard R. (HQ-VA030) <richard.r.irving@nasa.gov></richard.r.irving@nasa.gov></alicia.n.brown@nasa.gov>
Sent:	June 25, 2021 3:59:25 PM EDT
Received:	June 25, 2021 3:59:26 PM EDT

It's coming out . . . I don't think the NASA version of the royal we is publishing it.

From: Flaherty, Christopher J. (HQ-VA030) <christopher.j.flaherty@nasa.gov>

Sent: Friday, June 25, 2021 3:58 PM
DUPLICATE-ALREADY PROCESSED

From: Irving, Richard R. (HQ-VA030) <richard.r.irving@nasa.gov>



Sent: Friday, June 25, 2021 12:44 PM

DUPLICATE-ALREADY PROCESSED

### Attachment

### 1. Searching for Life feature\_final.docx

Type:application/vnd.openxmlformats-officedocument.wordprocessingml.documentSize:23 KB (23,677 bytes)

# Attachment #1 Searching for Life feature\_final.docx Original view

6 pages (displayed on pages 4 to 9)

### NASA's Search for Life: Astrobiology in the Solar System and Beyond

Are we alone in the universe? So far, the only life we know of is right here on Earth. But here at NASA, we're looking.

NASA is exploring the solar system and beyond to help us answer fundamental questions about life beyond our home planet. From studying the habitability of Mars, probing promising "oceans worlds," such as Titan and Europa, to identifying Earth-size planets around distant stars, our science missions are working together with a goal to find unmistakable signs of life beyond Earth (a field of science called <u>astrobiology</u>).

Through the study of astrobiology, NASA invests in understanding the origins, evolution, and limits of life on Earth. This work has been important in shaping ideas about where to focus search for life efforts. As NASA explores the solar system, our understanding of life on Earth and the potential for life on other worlds has changed alongside the many discoveries. The study of organisms in extreme environments on Earth, from the polar plateau of Antarctica to the depths of the ocean, have highlighted that life as we know it is highly adaptable, but not always easy to find. The search for life requires great care, and is based in the knowledge we gain by studying life on Earth through the lens of astrobiology. If there's something out there, we may not yet know how to recognize it.

Dive into the past, present, and future of NASA's search for life in the universe.

### **Past Missions**

### Viking 1 and 2

Over 45 years ago, the <u>Viking Project</u> found a place in history when it became the first U.S. mission to land a spacecraft safely on the surface of Mars.

Viking 1 and 2, each consisting of an orbiter and a lander, were NASA's first attempt to search for life on another planet and thus the first mission dedicated to astrobiology. The mission's biology experiments revealed unexpected chemical activity in the Martian soil, but provided no clear evidence for the presence of living microorganisms near the landing sites.

### Galileo

NASA's <u>Galileo</u> mission orbited Jupiter for almost eight years, and made close passes by all its major moons. Galileo returned data that continues to shape astrobiology science — particularly the discovery that Jupiter's icy moon Europa has evidence of a subsurface ocean with more water than the total amount of liquid water found on Earth. These findings also expanded the search for habitable environments outside of the traditional "habitable zone" of a system, the distance from a star at which liquid water can persist on the surface of a planet.

### Cassini

For more than a decade, the <u>Cassini</u> spacecraft shared the wonders of Saturn and its family of icy moons — taking us to astonishing worlds and expanding our understanding of the kinds of worlds where life might exist.

For the first time, astrobiologists were able to see through the thick atmosphere of Titan and study the moon's surface, where they found lakes and seas filled with liquid hydrocarbons. Astrobiologists are studying what these liquid hydrocarbons could mean for life's potential on Titan. Cassini also witnessed icy plumes erupting from Saturn's small moon Enceladus. When flying through the plumes, the spacecraft found evidence of saltwater and organic chemicals. This raised questions about whether habitable environments could exist beneath the surface of Enceladus.

#### **Spirit and Opportunity Mars Exploration Rovers**

NASA's twin <u>Mars Exploration Rovers</u>, Spirit and Opportunity, launched towards Mars in 2003 in search of answers about the history of water on Mars. Originally a three-month prime mission, both robotic explorers far outlasted their original missions and spent years collecting data at the surface of Mars.

Spirit and Opportunity were the first mission to prove liquid water, a key ingredient for life, had once flowed across the surface of Mars. Their findings shaped our understanding of Mars' geology and past environments, and importantly suggested Mars' ancient environments may once have been suitable for life.

#### Kepler and K2

NASA's first planet-hunting mission, the <u>Kepler Space Telescope</u>, paved the way for our search for life in the solar system and beyond. An important part of Kepler's work was the identification of Earth-size planets around distant stars.

After nine years in deep space, collecting data that indicate our sky to be filled with billions of hidden planets – more planets even than stars – the space telescope retired in 2018. Kepler left a legacy of more than 2,600 exoplanet discoveries, many of which could be promising places for life.

#### Spitzer

Over its sixteen years in space, the <u>Spitzer Space Telescope</u> evolved into a premier tool for studying exoplanets, using its infrared view of the universe. Spitzer marked a new age in planetary science as one of the first telescopes to directly detect light from the atmospheres of planets outside the solar system, or exoplanets. This enabled scientists to study the composition of those atmospheres and even learn about the weather on these distant worlds.

Spitzer's infrared instruments allowed scientists to peer into cosmic regions that are hidden from optical telescopes, including dusty stellar nurseries, the centers of galaxies, and newly forming planetary systems. Spitzer's infrared eyes also enabled astronomers to see cooler

objects in space, like failed stars (brown dwarfs), extrasolar planets, giant molecular clouds, and organic molecules that may hold the secret to life on other planets.

#### **Current Missions**

#### Hubble

Since it launched in 1990, the <u>Hubble Space Telescope</u> has made immense contributions to astrobiology. Astronomers used Hubble to make the first measurements of the atmospheric composition of extrasolar planets, and Hubble is now vigorously characterizing exoplanet atmospheres with constituents such as sodium, hydrogen, and water vapor. Hubble observations are also providing clues about how planets form, through studies of dust and debris disks around young stars.

Not all of Hubble's contributions involve distant targets. Hubble has also been used to study bodies within the solar system, including asteroids, comets, planets, and moons, such as the intriguing ocean-bearing icy moons Europa and Ganymede. Hubble has provided invaluable insight into life's potential in the solar system and beyond.

#### MAVEN

NASA's atmosphere-sniffing <u>Mars Atmosphere and Volatile Evolution</u> (MAVEN) mission launched in November 2013 and began orbiting Mars roughly a year later. Since that time, the mission has made fundamental contributions to understanding the history of the Martian atmosphere and climate.

Astrobiologists are working with this atmospheric data to better understand how and when Mars lost its water and identifying periods in Mars' history when habitable environments were most likely to exist at the planet's surface.

### **Mars Odyssey**

For two decades, <u>NASA's Mars Odyssey</u> – the longest-lived spacecraft at the Red Planet – has helped locate ice, assess landing sites, and study the planet's mysterious moons.

Odyssey has provided global maps of chemical elements and minerals that make up the surface of Mars. These detailed maps are used by astrobiologists to determine the evolution of the Martian environment and its potential for life.

### **Mars Reconnaissance Orbiter**

NASA's <u>Mars Reconnaissance Orbiter</u> (MRO) is on a search for evidence that water persisted on the surface of Mars for a long period of time. While other Mars missions have shown that water flowed across the surface in Mars' history, it remains a mystery whether water was ever around long enough to provide a habitat for life.

Data from MRO is essential to astrobiologists studying the potential for habitable environments on past and present Mars. Additionally, these studies are important in building climate models

for Mars, and for use in comparative planetology studies for the potential habitability of exoplanets that orbit distant stars.

#### **Curiosity Mars Rover**

The <u>Curiosity Mars rover</u> is studying whether Mars ever had environments capable of supporting microbial life. In other words, its mission is to determine whether the planet had all of the ingredients life needs – such as water, carbon, and a source of energy – by studying its climate and geology.

It's been nearly nine years since Curiosity touched down on Mars in 2012, and the robot geologist keeps making new discoveries. Curiosity provided evidence that freshwater lakes filled Gale Grater billions of years ago. Lakes and groundwater persisted for millions of years and contained all the key elements necessary for life, demonstrating Mars was once habitable.

#### **TESS Mission**

The <u>Transiting Exoplanet Survey Satellite</u> (TESS) is the next step in the search for planets outside of our solar system, including those that could support life. Launched in 2018, TESS is on a mission to survey the entire sky and is expected to discover and catalogue thousands of exoplanets around nearby bright stars.

To date, TESS has discovered more than 120 confirmed exoplanets and more than 2,600 planet candidates. The planet-hunter will continue to find exoplanets targets that NASA's upcoming <u>James Webb Space Telescope</u> will study in further detail.

#### **Perseverance Mars Rover**

NASA's newest robot astrobiologist, the <u>Perseverance Mars rover</u>, touched down safely on Mars on February 18, 2021, and is kicking off a new era of exploration on the Red Planet. Perseverance will search for signs of ancient microbial life, which will advance the agency's quest to explore the past habitability of Mars.

What really sets this mission apart is that the rover has a drill to collect core samples of Martian rock and soil, and will store them in sealed tubes for pickup by a future <u>Mars Sample</u> <u>Return</u> mission that would ferry them back to Earth for detailed analysis.

### **Upcoming Missions**

### James Webb Space Telescope

The <u>James Webb Space Telescope</u> (Webb), slated to launch in 2021, will be the premier spacebased observatory of the next decade. Webb is a large infrared telescope with a 6.5-meter primary mirror.

Webb observations will be used to study every phase in the history of the universe, including planets and moons in our solar system, and the formation of distant solar systems potentially capable of supporting life on Earth-like exoplanets. The Webb telescope will also be capable of

making detailed observations of the atmospheres of planets orbiting other stars, to search for the building blocks of life on Earth-like planets beyond our solar system.

#### **Europa Clipper Mission**

Jupiter's moon Europa may have the potential to harbor life. The <u>Europa Clipper</u> mission will conduct detailed reconnaissance of Europa and investigate whether the icy moon could harbor conditions suitable for life. Targeting a 2024 launch, the mission will place a spacecraft in orbit around Jupiter in order to perform a detailed investigation of Europa — a world that shows strong evidence for an ocean of liquid water beneath its icy crust.

Europa Clipper is not a life-detection mission, though it will investigate whether the icy moon, with its subsurface ocean, has the capability to support life. Understanding Europa's habitability will help scientists better understand how life developed on Earth and the potential for finding life beyond our planet.

#### **Dragonfly Mission to Titan**

The <u>Dragonfly</u> mission will deliver a rotorcraft to visit Saturn's largest and richly organic moon, Titan. Slated for launch in 2026 and arrival in 2034, Dragonfly will sample and examine dozens of promising sites around Saturn's icy moon and advance our search for the building blocks of life.

This revolutionary mission will explore diverse locations to look for prebiotic chemical processes common on both Titan and Earth. Titan is an analog to the very early Earth, and can provide clues to how prebiotic chemistry under these conditions may have progressed.

### Nancy Grace Roman Telescope

Slated to launch in the mid-2020s, the <u>Roman Space Telescope</u> will have a field of view that is 200 times greater than the Hubble infrared instrument, capturing more of the sky with less observing time. In addition to ground-breaking astrophysics and cosmology, the primary instrument on Roman, the Wide Field Instrument, has a rich menu of exoplanet science. It will perform a microlensing survey of the inner Milky Way that will reveal thousands of worlds orbiting within the habitable zone of their star and farther out, while providing an additional bounty of more than <u>100,000 transiting exoplanets</u>.

The mission will also be fitted with "starglasses," a coronagraph instrument that can block out the glare from a star and allow astronomers to directly image giant planets in orbit around it. The coronagraph will provide the first in-space demonstration of technologies needed for future missions to image and characterize smaller, rocky planets in the habitable zones of nearby stars. Roman coronagraph will make observations that could contribute to the discovery of new worlds beyond our solar system and advance the study of extrasolar planets that could be suitable for life.

Learn more about the NASA Astrobiology Program:

https://astrobiology.nasa.gov/
From: To:	Irving, Richard R. (HQ-VA030) <richard.r.irving@nasa.gov> Flaherty, Christopher J. (HQ-VA030) <christopher.j.flaherty@nasa.gov>, Brown, Alicia N. (HQ-VA000) <alicia.n.brown@nasa.gov></alicia.n.brown@nasa.gov></christopher.j.flaherty@nasa.gov></richard.r.irving@nasa.gov>
Sent:	July 2, 2021 12:06:43 PM EDT
Received:	July 2, 2021 12:06:43 PM EDT
Copy all, Chris – thanks!	
Regards,	
R	
Richard R. Irving	
Office of Legislative and I	ntergovernmental Affairs
National Aeronautics and	Space Administration
(202) 358-0084	
richard.r.irving@nasa.gov	/
From: Flaherty, Christoph Sent: Friday, July 02, 202	er J. (HQ-VA030) <christopher.j.flaherty@nasa.gov> 11 12:05 PM</christopher.j.flaherty@nasa.gov>
To: Irving, Richard R. (HC	2-VA030) <richard.r.irving@nasa.gov>; Brown, Alicia N. (HQ-VA000)</richard.r.irving@nasa.gov>
<alicia.n.brown@nasa.go< td=""><td></td></alicia.n.brown@nasa.go<>	
Subject: RE: [EXTERNAL	.j Fwd: Congressional UAP Update
We should	(b) (5) .
Jesse should just reach o	ut to Ms. Kohn and ask for her assistance in scheduling a briefing like the one in 2019. We
can defer to Ms. Kohn on	who the right people are to conduct the briefing.
The bottom line is:	(b) (5)

(b) (5) From: Irving, Richard R. (HQ-VA030) <richard.r.irving@nasa.gov> Sent: Friday, July 2, 2021 11:56 AM To: Brown, Alicia N. (HQ-VA000) <alicia.n.brown@nasa.gov>; Flaherty, Christopher J. (HQ-VA030) <christopher.j.flaherty@nasa.gov> Subject: RE: [EXTERNAL] Fwd: Congressional UAP Update

Alicia,

I'm looking at the chain, trying to cut it down and summarize the request for Jesse, especially as I think (b) (5)



#### (b) (5)

In terms of POCs, it looks like Tom wants a Navy/DoD/IC briefing, and the POCs we appear to have (along with the vintage of the info) are:
• Abigail (Abby) Kohn (b) (6) [RI – 2021 - I'm inferring she is from the IC, given Margaret's reference to ODNI]
• DOD POC: LCDR Brad Rainwater, (b) (6) [RI – 2021]
• USN POC: CDR Joseph M. Kasperski, USN, Office: (b) (6) [RI – 2019]
Jesse could start with (b) (6), but please let me know your preferred approach RE: NASA involvement; thanks!
Regards,
Rick
Richard R. Irving
Office of Legislative and Intergovernmental Affairs
National Aeronautics and Space Administration
(202) 358-0084
richard.r.irving@nasa.gov
From: Brown, Alicia N. (HQ-VA000) <alicia.n.brown@nasa.gov> Sent: Friday, July 02, 2021 11:09 AM To: Irving, Richard R. (HQ-VA030) <richard.r.irving@nasa.gov>; Flaherty, Christopher J. (HQ-VA030) <christopher.j.flaherty@nasa.gov> Subject: RE: [EXTERNAL] Fwd: Congressional UAP Update</christopher.j.flaherty@nasa.gov></richard.r.irving@nasa.gov></alicia.n.brown@nasa.gov>
Lets go ahead and see if Jesse can help arrange.
From: Irving, Richard R. (HQ-VA030) <richard.r.irving@nasa.gov> Sent: Friday, June 25, 2021 4:28 PM To: Flaherty, Christopher J. (HQ-VA030) <christopher.j.flaherty@nasa.gov></christopher.j.flaherty@nasa.gov></richard.r.irving@nasa.gov>

Cc: Brown, Alicia N. (HQ-VA000) <alicia.n.brown@nasa.gov> Subject: RE: [EXTERNAL] Fwd: Congressional UAP Update

Chris,

I don't really want to drop this on her right after a vacation, but I think given the OIIR/military flavor of this, if I'm not going to call Ms. Kohn, it should probably be Jesse.

Regards,

--Rick

Richard R. Irving

Office of Legislative and Intergovernmental Affairs

National Aeronautics and Space Administration

(202) 358-0084

richard.r.irving@nasa.gov

From: Flaherty, Christopher J. (HQ-VA030) <christopher.j.flaherty@nasa.gov> Sent: Thursday, June 24, 2021 9:28 PM To: Irving, Richard R. (HQ-VA030) <richard.r.irving@nasa.gov> Cc: Brown, Alicia N. (HQ-VA000) <alicia.n.brown@nasa.gov> Subject: FW: [EXTERNAL] Fwd: Congressional UAP Update

Who do we assign this to? I don't think it should be you or me.

From: Meidinger, Jolene A. (HQ-TH000) <jolene.meidinger@nasa.gov> Sent: Monday, June 21, 2021 3:33 PM To: Kieffer, Margaret (HQ-TH000) <margaret.kieffer@nasa.gov>; Brown, Alicia N. (HQ-VA000) <alicia.n.brown@nasa.gov>; Irving, Richard R. (HQ-VA030) <richard.r.irving@nasa.gov>; Flaherty, Christopher J. (HQ-VA030) <christopher.j.flaherty@nasa.gov>; Drew, Benjamin A. (HQ-TH000) <b.a.drew@nasa.gov> Cc: Grove, Jennifer (HQ-VA030) <jennifer.grove@nasa.gov> Subject: RE: [EXTERNAL] Fwd: Congressional UAP Update

Good afternoon – I would recommend reaching out to Abigail (Abby) Kohn (b) (6) I spoke to her this afternoon and she is happy to assist.

Best/Jolene

Jolene A. Meidinger

Interagency Liaison

Office of International and Interagency Relations

NASA Headquarters (5Y41)

Office: 202-358-3880

Cell: (b) (6)

jolene.meidinger@nasa.gov

SIPR: (b) (6), (b) (7)(A)

JWICS: (b) (6), (b) (7)(A)

From: Kieffer, Margaret (HQ-TH000) <margaret.kieffer@nasa.gov> Sent: Monday, June 21, 2021 10:10 AM To: Brown, Alicia N. (HQ-VA000) <alicia.n.brown@nasa.gov>; Irving, Richard R. (HQ-VA030) <ri><richard.r.irving@nasa.gov>; Flaherty, Christopher J. (HQ-VA030) <christopher.j.flaherty@nasa.gov>; Drew, Benjamin A. (HQ-TH000) <b.a.drew@nasa.gov> Cc: Grove, Jennifer (HQ-VA030) <jennifer.grove@nasa.gov>; Meidinger, Jolene A. (HQ-TH000) <jolene.meidinger@nasa.gov> Subject: RE: [EXTERNAL] Fwd: Congressional UAP Update

Ah, copy. Added Jolene in the event she has a better POC given ODNI ran the pre-OMB report vetting.

From: Brown, Alicia N. (HQ-VA000) <alicia.n.brown@nasa.gov> Sent: Monday, June 21, 2021 10:06 AM To: Kieffer, Margaret (HQ-TH000) <margaret.kieffer@nasa.gov>; Irving, Richard R. (HQ-VA030) <richard.r.irving@nasa.gov>; Flaherty, Christopher J. (HQ-VA030) <christopher.j.flaherty@nasa.gov>; Drew, Benjamin A. (HQ-TH000) <b.a.drew@nasa.gov> Cc: Grove, Jennifer (HQ-VA030) <jennifer.grove@nasa.gov>; Meidinger, Jolene A. (HQ-TH000) <jolene.meidinger@nasa.gov> Subject: RE: [EXTERNAL] Fwd: Congressional UAP Update

House science understands we didn't have a role. They just want us to get them a briefing bc (b) (5) Thanks for the POC!

From: Kieffer, Margaret (HQ-TH000) <margaret.kieffer@nasa.gov>

Sent: Monday, June 21, 2021 10:05 AM

To: Irving, Richard R. (HQ-VA030) <richard.r.irving@nasa.gov>; Flaherty, Christopher J. (HQ-VA030) <christopher.j.flaherty@nasa.gov>; Drew, Benjamin A. (HQ-TH000) <b.a.drew@nasa.gov> Cc: Brown, Alicia N. (HQ-VA000) <alicia.n.brown@nasa.gov>; Grove, Jennifer (HQ-VA030) <jennifer.grove@nasa.gov>; Meidinger, Jolene A. (HQ-TH000) <jolene.meidinger@nasa.gov> Subject: RE: [EXTERNAL] Fwd: Congressional UAP Update

Goodness, our role in this assessment was almost non-existent. Suggest we defer/refer to Mr. Jay Stratton from ONI, if possible. Separate from the POCs at the bottom of the trail, below is the POC who arranged last year's (NASA requested) brief by Jay Stratton on UAP report process.

DOD POC: LCDR Brad Rainwater, (b) (6)

D

Μ

From: Irving, Richard R. (HQ-VA030) <richard.r.irving@nasa.gov> Sent: Monday, June 21, 2021 9:20 AM To: Flaherty, Christopher J. (HQ-VA030) <christopher.j.flaherty@nasa.gov>; Drew, Benjamin A. (HQ-TH000) <b.a.drew@nasa.gov> Cc: Brown, Alicia N. (HQ-VA000) <alicia.n.brown@nasa.gov>; Kieffer, Margaret (HQ-TH000) <margaret.kieffer@nasa.gov>; Grove, Jennifer (HQ-VA030) <jennifer.grove@nasa.gov> Subject: RE: [EXTERNAL] Fwd: Congressional UAP Update

I do not.

Regards,

--R

Richard R. Irving

Office of Legislative and Intergovernmental Affairs

National Aeronautics and Space Administration

(202) 358-0084

richard.r.irving@nasa.gov

From: Flaherty, Christopher J. (HQ-VA030) <christopher.j.flaherty@nasa.gov> Sent: Monday, June 21, 2021 9:12 AM To: Drew, Benjamin A. (HQ-TH000) <b.a.drew@nasa.gov>; Irving, Richard R. (HQ-VA030) <richard.r.irving@nasa.gov> Cc: Brown, Alicia N. (HQ-VA000) <alicia.n.brown@nasa.gov>; Kieffer, Margaret (HQ-TH000) <margaret.kieffer@nasa.gov>; Grove, Jennifer (HQ-VA030) <jennifer.grove@nasa.gov> Subject: FW: [EXTERNAL] Fwd: Congressional UAP Update

Alvin and Rick

So, it looks like back in 2019 NASA facilitated a briefing for House Science on Unexplained Aerial Phenomena.

Do you know of a POC at DOD that we can reach out to on this?

From: Hammond, Tom (b) (6) Sent: Sunday, June 6, 2021 8:59 PM To: Brown, Alicia N. (HQ-VA000) <alicia.n.brown@nasa.gov> Subject: [EXTERNAL] Fwd: Congressional UAP Update

Its that time again. Can you arrange for a classified briefing by NASA and Navy/DoD/IC on this topic?

We got the last one, but given the recent report release and this article referencing NASA, we'd like everyone in one room for a classified Member brief.

Happy to work together on an agreeable time that works for everyone, but given the release if the report, sooner is better than later.

Hope all is well.

Thanks.

Tom

Begin forwarded message:

From: "Hammond, Tom" <	(b) (6)		
Date: July 19, 2019 at 6:53	:31 PM EDT		
To: "Kasperski, Joseph M (	CDR USN DCNO N2N6 (USA)" <	(b) (6)	
Cc: "Cirenza, Gabrielle"	(b) (6)	, "Mensie, Alyssa"	(b) (6)
"Patel, Twinkle" <	(b) (6)		
Subject:Re: Congressional	UAP Update		

HSST has a hearing at 2pm on Thursday. If we can work around that, it would be appreciated. Thanks.

On Jul 19, 2019, at 4:46 PM, Kasperski, Joseph M CDR USN DCNO N2N6 (USA) <	(b) (6)
wrote:	

(b) (6)

A 1545 - 1645 time will be better as we have a HASC briefing from 1430-1530 on the same topic.

Is that possible and will it work for everyone (Steube, McEachin and Lucas)?

Thanks for working the schedule with me. I am just trying to minimize the time for the briefing team. They have many Legislative and Executive Branch meetings they are fielding and your Members will be briefed that the ONI team is not that large.

V/r

(b) (6)

CDR Joseph M. Kasperski, USN

Legislative Liaison, LA-52 (Intelligence & ISR) Office of Legislative Affairs (OLA) Pentagon 4C549

Office: (b) (6)		
Mobile: (b) (6)		
(b) (6) navy.(sm	il).mil	
(b) (6)		
(b) (6)		
From: Cirenza, Gabrielle	(b) (6)	
Sent: Friday, July 19, 2019 4:00	6 PM	
To: Kasperski, Joseph M CDR	USN DCNO N2N6 (USA) <	(b) (6)
Cc: Patel, Twinkle	(b) (6)	
Subject: [Non-DoD Source] RE	: Congressional UAP Update	

Hi Joe-

(b) (6) passed your email along to me. Congressman Steube is unavailable at the time below due to committee hearings. He is however, available from 330-430 PM. Please let me know if that will work with the team's schedule. Thank you!

All the best,

(b) (6)

#### (b) (6)

Scheduler

Congressman Greg Steube (FL-17)

521 Cannon House Office Building

Washington, DC 20515

Office: 202.225.5792

https://steube.house.gov/

<https://gcc02.safelinks.protection.outlook.com/?url=https://steube.house.gov/&data=04|01|alicia.n.brown@nasa.gov|8 45af7ef898d4004dd7a08d93d736283|7005d45845be48ae8140d43da96dd17b|0|0|637608388038557615|Unknown|T WFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6lk1haWwiLCJXVCI6Mn0=|1000&sdata=VXfx/6LqsI JhsU9X5UZsbc8oxYzAnSWAutJNmpZxXq4=&reserved=0>

From: Kasperski, Joseph	M CDR USN DCNO	N2N6 (USA) < (k	o) (6)	
Sent: Friday, July 19, 201	9 2:37 PM			
To: Patel, Twinkle	(b) (6)	Mensie, Alyssa	(b) (6)	Solow, Corey
(b) (6)	>			
Cc: Snowden, Macon S II	II CDR USN OSD OU	ISD INTEL (USA) <	(b) (6)	1
Subject: Congressional U	IAP Update			

Twinkle, Alyssa,

Good afternoon. We would like to begin anew the scheduling process to provide Rep McEachin and Rep Steube with an update on the unexplained aerial phenomena (UAP). The OSD and Navy briefing team is available next week. Specifically we are recommending a time on Thursday, 25 July, with a start time between 1200-1300. I expect the update to last about 1 hour at the TS/SI level.

We also have interest from Rep Lucas to receive a brief on the same topic. Would it still be ok for this to be a joint briefing between the three Members?

Also, below is a USN approved, unclassified overview, I want to ensure you and your offices have.

Unidentified Aerial Phenomena:

There have been a number of reports of unauthorized and/or unidentified aircraft entering various military-controlled training ranges and designated air space in recent years. The Navy and the USAF take these reports very seriously and investigate each and every report. Any incursion into our training ranges by any aircraft, identified or not identified, is problematic from both a safety and security concern. Safety of our aircrews is paramount. Unauthorized and unidentified aircraft pose a risk to flight safety. Additionally, it is vital we maintain security on our operations. Our aviators train as they fight. Any intrusions that may compromise the security of our operations, tactics or procedures is of great concern. As part of this effort, the Navy has updated and is formalizing the process by which reports of any such suspected incursions can be made to the cognizant authorities. Initial revised reporting guidance has been provided to the fleet that details the steps for reporting each incident. More formal guidance is in staffing and will be promulgated fleetwide when completed. In response to requests for information from Congressional members and staff, Navy officials have provided and will continue to provide briefings by senior Naval Intelligence officials as well as aviators who reported hazards to aviation safety.

From:	Irving, Richard R. (HQ-VA030) <richard.r.irving@nasa.gov></richard.r.irving@nasa.gov>
To:	Brown, Alicia N. (HQ-VA000) <alicia.n.brown@nasa.gov>, Flaherty, Christopher J. (HQ-VA030) <christopher.j.flaherty@nasa.gov></christopher.j.flaherty@nasa.gov></alicia.n.brown@nasa.gov>
Sent:	July 2, 2021 11:24:29 AM EDT
Received:	July 2, 2021 11:24:29 AM EDT

Copy - will do!

Regards,

--R

Richard R. Irving

Office of Legislative and Intergovernmental Affairs

National Aeronautics and Space Administration

(202) 358-0084

richard.r.irving@nasa.gov

From: Brown, Alicia N. (HQ-VA000) <alicia.n.brown@nasa.gov> Sent: Friday, July 02, 2021 11:09 AM To: Irving, Richard R. (HQ-VA030) <richard.r.irving@nasa.gov>; Flaherty, Christopher J. (HQ-VA030) <christopher.j.flaherty@nasa.gov> Subject: RE: [EXTERNAL] Fwd: Congressional UAP Update

#### DUPLICATE-ALREADY PROCESSED

From: Irving, Richard R. (HQ-VA030) <richard.r.irving@nasa.gov> Sent: Friday, June 25, 2021 4:28 PM To: Flaherty, Christopher J. (HQ-VA030) <christopher.j.flaherty@nasa.gov> Cc: Brown, Alicia N. (HQ-VA000) <alicia.n.brown@nasa.gov> Subject: RE: [EXTERNAL] Fwd: Congressional UAP Update

From:	Irving, Richard R. (HQ-VA030) <richard.r.irving@nasa.gov></richard.r.irving@nasa.gov>
To:	Flaherty, Christopher J. (HQ-VA030) <christopher.j.flaherty@nasa.gov></christopher.j.flaherty@nasa.gov>
Cc:	Brown, Alicia N. (HQ-VA000) <alicia.n.brown@nasa.gov></alicia.n.brown@nasa.gov>
Sent:	June 24, 2021 10:03:53 PM EDT
Received:	June 24, 2021 10:03:53 PM EDT

I'll take a look at it.

Regards,

—R

On: 24 June 2021 21:28, "Flaherty, Christopher J. (HQ-VA030)" <christopher.j.flaherty@nasa.gov> wrote:

DUPLICATE-ALREADY PROCESSED

From: Meidinger, Jolene A. (HQ-TH000) <jolene.meidinger@nasa.gov>

Sent: Monday, June 21, 2021 3:33 PM

To: Kieffer, Margaret (HQ-TH000) <margaret.kieffer@nasa.gov>; Brown, Alicia N. (HQ-VA000)

<alicia.n.brown@nasa.gov>; Irving, Richard R. (HQ-VA030) <richard.r.irving@nasa.gov>; Flaherty, Christopher J.

(HQ-VA030) <christopher.j.flaherty@nasa.gov>; Drew, Benjamin A. (HQ-TH000) <b.a.drew@nasa.gov>

Cc: Grove, Jennifer (HQ-VA030) <jennifer.grove@nasa.gov>

Subject: RE: [EXTERNAL] Fwd: Congressional UAP Update

From:	Flaherty, Christopher J. (HQ-VA030) <christopher.j.flaherty@nasa.gov></christopher.j.flaherty@nasa.gov>
То:	Drew, Benjamin A. (HQ-TH000) <b.a.drew@nasa.gov>, Irving, Richard R. (HQ-VA030) <richard.r.irving@nasa.gov></richard.r.irving@nasa.gov></b.a.drew@nasa.gov>
Cc:	Brown, Alicia N. (HQ-VA000) <alicia.n.brown@nasa.gov>, Kieffer, Margaret (HQ- TH000) <margaret.kieffer@nasa.gov>, Grove, Jennifer (HQ-VA030) <jennifer.grove@nasa.gov></jennifer.grove@nasa.gov></margaret.kieffer@nasa.gov></alicia.n.brown@nasa.gov>
Sent:	June 21, 2021 9:12:18 AM EDT
Received:	June 21, 2021 9:12:19 AM EDT

Alvin and Rick

So, it looks like back in 2019 NASA facilitated a briefing for House Science on Unexplained Aerial Phenomena.

Do you know of a POC at DOD that we can reach out to on this?

From: Hammond, Tom < (b) (6) Sent: Sunday, June 6, 2021 8:59 PM To: Brown, Alicia N. (HQ-VA000) <alicia.n.brown@nasa.gov> Subject: [EXTERNAL] Fwd: Congressional UAP Update

## DUPLICATE-ALREADY PROCESSED

Begin forwarded message:

From: "Hammond, Tom" <	(b) (6)			
Date: July 19, 2019 at 6:53:31 P	MEDT			
To: "Kasperski, Joseph M CDR l	JSN DCNO N2N6 (US	A)" < (b) (6)		
Cc: "Cirenza, Gabrielle"	(b) (6)	, "Mensie, Alyssa" <	(b) (6)	
"Patel, Twinkle" < (b	) (6)			
Subject:Re: Congressional UAP	Update			

From:	Brown, Alicia N. (HQ-VA000) ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=71E42AF1E7894AE3828A6CACAF5A3 153-BROWN, ALIC>
To:	Flaherty, Christopher J. (HQ-VA030) <christopher.j.flaherty@nasa.gov></christopher.j.flaherty@nasa.gov>
Cc:	Irving, Richard R. (HQ-VA030) <richard.r.irving@nasa.gov></richard.r.irving@nasa.gov>
Sent:	June 18, 2021 3:21:30 PM EDT
Received:	June 18, 2021 3:21:00 PM EDT

Now I am just getting back to it!

I talked to Tom. He said Rebecca Lee helped them get the briefing from DoD even though NASA wasn't a briefer. Otherwise they are treated like a rank and file. So...do we know a DoD liaison we can ask to get this briefing for Lucas et al?

From: Flaherty, Christopher J. (HQ-VA030) <christopher.j.flaherty@nasa.gov> Sent: Tuesday, June 8, 2021 10:39 AM To: Brown, Alicia N. (HQ-VA000) <alicia.n.brown@nasa.gov> Cc: Irving, Richard R. (HQ-VA030) <richard.r.irving@nasa.gov> Subject: RE: [EXTERNAL] Fwd: Congressional UAP Update

Just getting back to this.

Do you know who our NASA POC would be?

As far as I know, NASA was not involved in the referenced 2019 briefing.

From: Brown, Alicia N. (HQ-VA000) <alicia.n.brown@nasa.gov> Sent: Monday, June 7, 2021 2:14 PM To: Hammond, Tom < (b) (6) Cc: Flaherty, Christopher J. (HQ-VA030) <christopher.j.flaherty@nasa.gov>; Irving, Richard R. (HQ-VA030) <richard.r.irving@nasa.gov> Subject: RE: [EXTERNAL] Fwd: Congressional UAP Update

Adding Chris and Rick.

From: Hammond, Tom < (b) (6) Sent: Sunday, June 6, 2021 8:59 PM To: Brown, Alicia N. (HQ-VA000) <alicia.n.brown@nasa.gov> Subject: [EXTERNAL] Fwd: Congressional UAP Update

From:	Flaherty, Christopher J. (HQ-VA030) <christopher.j.flaherty@nasa.gov></christopher.j.flaherty@nasa.gov>
To:	Brown, Alicia N. (HQ-VA000) <alicia.n.brown@nasa.gov></alicia.n.brown@nasa.gov>
Cc:	Irving, Richard R. (HQ-VA030) <richard.r.irving@nasa.gov></richard.r.irving@nasa.gov>
Sent:	June 8, 2021 10:39:10 AM EDT
Received:	June 8, 2021 10:39:13 AM EDT

Just getting back to this.

Do you know who our NASA POC would be?

As far as I know, NASA was not involved in the referenced 2019 briefing.

From: Brown, Alicia N. (HQ-VA000) <alicia.n.brown@nasa.gov> Sent: Monday, June 7, 2021 2:14 PM To: Hammond, Tom < (b) (6) Cc: Flaherty, Christopher J. (HQ-VA030) <christopher.j.flaherty@nasa.gov>; Irving, Richard R. (HQ-VA030) <richard.r.irving@nasa.gov> Subject: RE: [EXTERNAL] Fwd: Congressional UAP Update

Adding Chris and Rick.

From: Hammond, Tom < (b) (6)

Sent: Sunday, June 6, 2021 8:59 PM

To: Brown, Alicia N. (HQ-VA000) <alicia.n.brown@nasa.gov>

Subject: [EXTERNAL] Fwd: Congressional UAP Update

## DUPLICATE-ALREADY PROCESSED

Begin forwarded message:

From: "Hammond, Tom" <	(b) (6)				
Date: July 19, 2019 at 6:53:31 PM EDT					
To: "Kasperski, Joseph M CDR USN	(b) (6)				
Cc: "Cirenza, Gabrielle"	(b) (6)	"Mensie, Alyssa" <	(b) (6)		
"Patel, Twinkle" < (b) (6)					
Subject:Re: Congressional UAP Update					

From:	Brown, Alicia N. (HQ-VA000) ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=71E42AF1E7894AE3828A6CACAF5A3 153-BROWN, ALIC>
To:	Hammond, Tom < (b) (6)
Cc:	Christopher J. Flaherty (HQ-VA030) (christopher.j.flaherty@nasa.gov) <christopher.j.flaherty@nasa.gov>, Irving, Richard R. (HQ-VA030) <richard.r.irving@nasa.gov></richard.r.irving@nasa.gov></christopher.j.flaherty@nasa.gov>
Sent:	June 7, 2021 2:14:14 PM EDT
Received:	June 7, 2021 2:14:00 PM EDT

Adding Chris and Rick.

From: Hammond, Tom < (b) (6) Sent: Sunday, June 6, 2021 8:59 PM To: Brown, Alicia N. (HQ-VA000) <alicia.n.brown@nasa.gov> Subject: [EXTERNAL] Fwd: Congressional UAP Update

### DUPLICATE-ALREADY PROCESSED

Begin forwarded message:

From: "Hammond, Tom" <	(b) (6)		
Date: July 19, 2019 at 6:53:31	PM EDT		
To: "Kasperski, Joseph M CD	R USN DCNO N2N6 (US	6A)" < (b) (6)	
Cc: "Cirenza, Gabrielle" <	(b) (6)	>, "Mensie, Alyssa" <	(b) (6)
"Patel, Twinkle" <	(b) (6)		
Subject:Re: Congressional U/	AP Update		

#### FW: OIIR Weekly Update

From:	Brown, Alicia N. (HQ-VA000) ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=71E42AF1E7894AE3828A6CACAF5A3 153-BROWN, ALIC>
To:	Deihl, Jessica A. (HQ-VA000) <jessica.a.deihl@nasa.gov></jessica.a.deihl@nasa.gov>
Sent:	July 19, 2021 1:32:20 PM EDT
Received:	July 19, 2021 1:32:00 PM EDT

From: Feldstein, Karen C. (HQ-TA000) <karen.c.feldstein@nasa.gov>

Sent: Sunday, July 18, 2021 5:45 PM

To: Cabana, Robert D. {HQ-Associate Administrator} (KSC-Al000) <robert.d.cabana@nasa.gov> Cc: Melroy, Pamela A. (HQ-AB000) <pamela.a.melroy@nasa.gov>; Saunders, Melanie (HQ-AA000) <melanie.saunders-1@nasa.gov>; Quinn, Susie Perez (HQ-AH000) <susie.p.quinn@nasa.gov>; Dalton, Bale (HQ-AH000) <bale.dalton@nasa.gov>; Lal, Bhavya (HQ-AA000) <bhavya.lal@nasa.gov>; Cremins, Tom (HQ-AJ000) <tom.cremins-1@nasa.gov>; Etkind, Marc R. (HQ-NA000) <marc.r.etkind@nasa.gov>; Stephenson, Johnny F. (MSFC-NA000) <johnny.f.stephenson@nasa.gov>; Jacobs, Bob (HQ-NA000) <bob.jacobs@nasa.gov>; Kerwin, Mary D. (HQ-IA000) <mary.d.kerwin@nasa.gov>; Brown, Alicia N. (HQ-VA000) <alicia.n.brown@nasa.gov>; Flaherty, Christopher J. (HQ-VA030) <christopher.j.flaherty@nasa.gov>; Zurbuchen, Thomas H. (HQ-DA000) <thomas.h.zurbuchen@nasa.gov>; Lueders, Kathryn L. (KSC-CA000) <kathryn.l.lueders@nasa.gov>; McKay, Meredith (HQ-TA000) <meredith.mckay@nasa.gov>; Swails, Casey L. (HQ-LE030) <casey.l.swails@nasa.gov> Subject: OIIR Weekly Update

Bob,

Below isa list of top-level, OIIR-supported activities of interest this week and some upcoming activities:

Public Meeting on NASA's Proposal to Withdrawal Land from Railroad Valley (RRV), Nevada: On July 19, NASA will participate in a virtual public meeting with an official from the Department of Interior's Bureau of Land Management to provide an overview of, and hear public comments regarding, NASA's request to withdrawal nearly 23,000 acres of land from public use in RRV. NASA initiated the withdrawal application to preserve this land for satellite calibration activities. RRV is the best vicarious calibration site in the U.S. and one of the best in the world for Earth observing satellites because it has ideal and stable land characteristics, is well-instrumented, and can be relatively easily accessed by scientists. Representatives from SMD, OComm, and OIIR will attend.

ISS Multilateral Coordination Board (MCB): On July 19, HEOMD AA Lueders will chair the ISS MCB, the highest-level governing board of the program, with her counterparts from the Canadian Space Agency (CSA), Roscosmos, the European Space Agency (ESA), and Japan's Ministry of Education, Culture, Sports, Science and Technology (MEXT).

Norms of Behavior for National Security Space Activities: On July 20, the National Security Council (NSC) will kick off a series of biweekly Sub-Interagency Policy Committee (Sub-IPC) meetings to develop norms of behavior for national security space activities. The principal participants are DOD, the State Department, and the Intelligence Community. Civil departments and agencies are being included for awareness. OIIR will support.

NASA Annual Export Control Program Review: On July 20, the Deputy Administrator will provide welcoming remarks at this OIIR-sponsored agencywide event for 75 NASA civil servants and contractors responsible for assuring agency compliance with U.S. export control regulations. The Deputy Administrator's participation will reinforce the critical importance of protecting the nation's sensitive technologies.

NSC Restricted IPC meeting: On July 21, the NSC will hold the 2nd in a series of weekly in-person restricted IPC

meetings to continue the development of strategic messaging and a diplomatic plan for Department of Defense space activities. OIIR will support.

Climate presentation at Japan event: On July 21, NASA Senior Climate Advisor (acting) Dr. Gavin Schmidt will provide a presentation on "NASA's Cooperation in Addressing the Climate Challenge" to Japan Aerospace Exploration Agency (JAXA)-hosted virtual event.

Launch of Russia's Nauka Multipurpose Laboratory Module (MLM) to ISS: On July 21, Roscosmos is scheduled to launch the Nauka MLM to ISS from Baikonur, Kazakhstan, on a Proton-M rocket. The Nauka MLM includes a robotic arm provided by the European Space Agency. NASA's Director of Human Space Flight Programs in Russia, Tricia Mack, traveled from Moscow to Baikonur for launch.

Potential Visit by Spain Prime Minister to JPL: On July 22, the mayor of Los Angeles, Eric Garcetti, is scheduled to host the Prime Minister of Spain, Pedro Sanchez, for a meeting and brief tour at JPL. The visit isn't yet confirmed.

Chief Scientist Lecture at Oxford: On July 23, NASA Chief Scientist Dr. Jim Green will give a virtual lecture at the University of Oxford's St. Cross College Center for the History and Philosophy of Physics on "The Future of Space Activities and Preservation on Mars."

Upcoming Activities

July 2021

July 27-Aug 1

Zurbuchen travel to Kourou, French Guiana for Ariane 5 launch

July TBD

Administrator meeting with SBA Administrator

August 2021

Aug 4-5

ISS Advisory Committee joint meeting with Roscosmos Advisory Expert Council (virtual)

Aug 4-5 (proposed)

Administrator meeting with President, Japan Aerospace Exploration Agency (JAXA) President

#### Aug 5

Administrator Nelson meeting with Director, National Reconnaissance Office (NRO)

August 17

Briefing on Task Force Report on Unidentified Aerial Phenomena

Aug 18

Administrator Nelson meeting with NOAA Administrator

Aug 22-26

36th Space Symposium, Colorado Springs

Aug 25-Sep 3

UN Committee on the Peaceful Uses of Outer Space (COPUOS)

Aug 29-Sep 4

SMD AA Zurbuchen travel to Europe for meetings with CNES and ESA and remarks at the Swiss Economic Forum

Please let me know if you have any questions or would like additional information.

Regards,

Karen

Karen C. Feldstein

Associate Administrator for

International and Interagency Relations

NASA Headquarters

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Mobile: (b) (6)