



Human Space Exploration Update (July 10-28, 2017)

Executive Branch

- **Space Council:** [Space groups hail appointment of Scott Pace as National Space Council executive](#) Exploration advocates back the Trump Administration's choice of Scott Pace to lead the recently re-established White House National Space Council. The Coalition for Deep Space Exploration and Commercial Spaceflight Federation are among those applauding the choice. Pace, a former NASA official, leads the George Washington University Space Policy Institute. (See also: [White House not expected to rush development of new space policy](#))

NASA Budget

- **SAC Markup:** [Proposed budget gives KSC a boost toward Mars](#) The Senate Appropriations Committee has approved \$19.5 billion in spending for NASA in 2018, a measure that includes \$640 million in upgrades to launch facilities at the Kennedy Space Center involved in launches of the Space Launch System and Orion spacecraft with astronauts assigned to future missions of deep space exploration. The measure awaits consideration by the full Senate. (See also: [Senate appropriations subcommittee approves \\$19.5 billion for NASA](#))
- **HAC Markup:** [House Appropriators approve FY2018 CJS Bill--good news for NASA, mixed for NOAA satellites](#) NASA would get a 2018 spending boost under the provisions approved by the U.S. House Commerce-Justice-Science Appropriations Committee. The panel approved \$19.872 billion, or \$780 million more than proposed by the Trump Administration and \$218 million greater than the 2017 budget mark. Further deliberations in the House and Senate await. The House appropriations total includes \$4.55 billion for Space Launch System, Orion and associated ground systems development and \$4.676 billion for space operations, including International Space Station activities and work on a U.S. commercial launch capability for astronauts.

International Space Station

- **Tour ISS:** [Tour the International Space Station with Google Street View](#) Google Street View has expanded its visual services from Earth to the International Space Station. European Space Agency astronaut Thomas Pesquet captured Street View imagery to share what it looks like from the inside, and what it's like to look down on Earth from outer space during his recent six month stay aboard the Space Station.
- **Peggy Whitson on Space Experience:** [For record-breaking astronaut Peggy Whitson, space is never boring](#) Whitson has more career time in space than any American and the most of any woman, 629 days and counting. Whitson believes she's succeeded because of a positive attitude. "I think if you have the right attitude, you can stay in space for a long period of time, and it's actually very satisfying and enjoyable," she told the Guinness Book of World Records.
- **Applications of Space Research & Technology:** [NASA's work to head off battery blazes in space finds uses on Earth](#) Efforts by NASA and the agency's contractors to stem the threat of fire or explosion from rechargeable lithium ion batteries found aboard the International Space Station and in space suits will soon improve the safety of their use in household and personal electronics products. (See also: [Space-grown crystals could counteract toxic nerve poisons](#) and [ISS will carry artificial organs in hope of medical breakthrough](#))

Orion and Space Launch System

- **Orion Space Suit:** [Orion spacesuits put to a vacuum test at NASA](#) At NASA's Johnson Space Center, engineers test an advanced version of the agency's space shuttle space suit for use by astronauts assigned to flights aboard the Orion crew exploration capsule. Engineers shared photos as the suits were exposed to a vacuum. (See also: [Orion testers make one giant leap into Gulf of Mexico](#))
- **SLS Testing:** [RS-25 conducts another hot fire as SLS flight engines line up for EM-1](#) In a step forward for the inaugural launch of the Space Launch System, contractor Aerojet Rocketdyne and NASA's Stennis Space Center qualified the third of four first stage Honeywell rocket engine controllers.

Commercial Space Transportation

- **Commercial Crew Progress:** [NASA and companies express growing confidence in commercial crew schedules](#) The latest scheduling from NASA's Commercial Crew Program and its contract partners Boeing and SpaceX shows both companies conducting uncrewed and crewed test flights in 2018. If the planning holds, the U.S. would be launching astronauts into orbit for the first time since NASA's final space shuttle mission in 2011. Boeing's CST-100 and SpaceX's crewed Dragon are to transport four astronauts.
- **Dream Chaser:** [Sierra Nevada's Dream Chaser on the move in California](#) Sierra Nevada's future commercial cargo carrier to the International Space Station, the Dream Chaser, is undergoing runway evaluations at Edwards Air Force Base, Calif. The winged reusable re-supply vehicle is designed to launch from Florida on a United Launch Alliance Atlas V and land on a runway. A test flight in which Dream Chaser is released from an airborne helicopter for an automated approach and landing on the runway is anticipated later this year.

Space Policy, Missions, Benefits, International ...

- **US-Russian, Space and Sanctions:** [Russia sanctions bill clears Congress](#) NASA activities with Russia and space launches conducted for NASA are exempted from Senate legislation imposing sanctions against Russia. The measure matches legislation approved by the House. The legislation, if signed by the president, will impose sanctions against Russian individuals and entities due to Russia's interventions in Ukraine and for "undermining cybersecurity." Russia is the only International Space Station partner capable of transporting astronauts to and from the International Space Station. Imported Russian rocket engines power Atlas 5 and Antares launch vehicles that carry out NASA contracted missions.
- **Mars Exploration:** [Humans on Mars in 2033: A bipartisan vision](#) Support from both major political parties led to passage, as well as President Trump's signature, of the NASA Transition Authorization Act of 2017 in March. It's time to support the legislation's call for a human presence of Mars by 2033 with modest spending increases, write Explore Mars executives Chris Carberry and Rick Zucker in an op ed. "Now is not the time to be timid," according to the two men. "It is time for NASA and its industrial and international partners to truly enable humans to walk on the Martian surface within the next 16 years." (See also: [Mars rover concept vehicle tours this planet](#) and [To prepare for Mars settlement, simulated missions explore Utah's desert](#))
- **Deep Space Gateway:** [NASA is building a prototype for a habitat in deep space by recycling an old cargo container](#) Donatello, an aging one time cargo carrier designed for flight aboard NASA's space shuttle to deliver supplies to the International Space Station, will be converted into a ground based mockup of a deep space habitat for astronauts by Lockheed Martin. Working under a NASA contract, Lockheed will carry out the project at NASA's Kennedy Space Center over the next 18 months. The effort could advance plans by NASA to establish a Deep Space Gateway, or lunar orbital habitat, during the mid-2020s. (See also: [Shuttle-era cargo module to become deep space habitat prototype](#) and [Giving a push for in-space propulsion](#))
- **America Great Again in Space:** [Trump administration is making America a leader in space again](#) Early moves by the Trump White House, including budgets and a re-established National Space Council, offer encouragement for future human deep space exploration as well as a

growing presence in low Earth orbit, writes Doug Cooke, an aerospace consultant and Coalition for Deep Space Exploration board member. However, as program plans mature, budgets must increase to meet objectives. NASA must also strive for new organizational efficiencies while continuing to meet demanding technical requirements and maintaining basic safety, Cooke adds in an op-ed.

- **China and Space:** [In Beijing, China rolls out the red carpet and a comprehensive space plan](#)
Chinese presentations before the June meeting of the Global Space Exploration Conference in Beijing revealed a clear direction and high level backing for a range of space activities. They include a staffed Earth orbiting space station, with a core module launch planned for 2019, and a human lunar presence by 2030. Robotic missions to Mars include an independent robotic mission in 2020 and a planned sample return by 2030.

Citizens for Space Exploration – a pro-space, taxpayer, grassroots advocacy group (www.citizensforspace.org) – has travelled to Washington, D.C. the past 26 years to meet face-to-face with Members/staff of Congress to discuss the value of America's investment in space exploration. In order to sustain that dialogue on a regular basis, Citizens distributes "Space Exploration Update" to Congressional offices to provide an easy, quick way to stay abreast of key human space exploration program and policy developments.