



## **Human Space Exploration Update (Jan 3-20, 2017)**

### **Space Heroes**

- **Gene Cernan:** [Eugene Cernan, last human to walk on moon, dies at 82](#) Gene Cernan, who commanded Apollo 17, NASA's final human moon landing mission in December 1972, died Monday afternoon, in a Houston hospital following ongoing health issues. Cernan made the lunar journey twice, serving first as lunar module pilot aboard the May 1969 Apollo 10 mission, an orbital precursor to the historic Apollo 11 moon landing by Neil Armstrong and Buzz Aldrin on July 20, 1969. Cernan, who retired from the U.S. Navy, was also the second American to carry out a spacewalk, while in Earth orbit aboard the Gemini IX mission in 1966.
- **“Hidden Figures”:** [Box office: 'Hidden Figures' calculates another win with \\$20.5M](#) *Hidden Figures*, the story of a team of African American women who furnished critical mathematical services to NASA's early human spaceflight successes, leads the box office for a second week in a row. Their efforts helped launch the first American into Earth orbit and send NASA's astronauts to the lunar surface. (See also: [Working woman: Inspiring NASA's chief scientist](#), ['Hidden Figures' stars write inspiring posts after film dominates box office](#), ['Hidden Figures' explores NASA and civil rights history](#))

### **President-elect Trump – Transition**

- **Inauguration Speech:** “We stand at the birth of a new millennium, ready to ***unlock the mysteries of space***, to free the Earth from the miseries of disease and to harness the energies, industries and technologies of tomorrow.” *President Donald J. Trump* (January 20, 2017)
- **NASA Transition Leadership:** [Lightfoot to be acting NASA administrator, CFO Radzanowski to stay on](#) President Obama and his administration, including NASA Administrator Charles Bolden and Deputy Administrator Dava Newman, leave office on January 20. President-elect Trump has not designated successors, who will face U.S. Senate confirmation. During the interim, long-time NASA civil servant Robert Lightfoot, now the agency's No. 3 official, will serve as acting administrator. David Radzanowski will continue on as chief financial officer, at least temporarily. (See also: [NASA "beachhead team" taking shape](#), [Lightfoot optimistic about NASA's future](#) and [Trump administration assigns first political appointees to NASA](#))
- **NASA Future Leadership:** [GOP Rep. Jim Bridenstine seen as top choice for NASA Chief](#) Oklahoma congressman Jim Bridenstine, an advocate for traditional human space exploration and space commerce, may lead the field to become NASA's administrator, according to the report. Bridenstine, a former naval aviator, has championed U.S. space leadership as a member of the House Science, Space and Technology Committee.
- **Lunar Exploration:** [Trump might be thinking about a moon base](#) Prominent historian David Brinkley suggested President-elect Trump is intrigued by a human lunar base, following a meeting between the two last week. A U.S. return to the lunar surface, however, could prove expensive enough to slow the momentum to reach Mars with human explorers in two decades, note experts who favor the red planet as the next planetary surface destination. (See also: [Will a President Trump change NASA's Mars goals? Sen. Bill Nelson says no](#))

### **International Space Station**

- **Scott Kelly:** [PBS to document Scott Kelly after historic Space Station stay in 'Beyond a Year in Space'](#) PBS plans a follow-on documentary detailing NASA astronaut Scott Kelly's return to Earth, following a 340-day mission to the International Space Station in 2015-16. *Beyond a Year in Space* promises to look into the health challenges of a long mission to Mars and introduce some of the astronauts who are making preparations.
- **New Space Mission Assignments:** [NASA just picked these astronauts to fly in space in 2018](#) On Wednesday, NASA assigned veteran astronaut Drew Feustel and first timer Janette Epps to launches to the International Space Station in March and May of 2018. Epps will become the first African-American to serve aboard the 15 nation orbiting science laboratory.
- **Views of Earth from ISS:** [European astronaut captures incredible views of our beautiful planet](#) European Space Agency astronaut Thomas Pesquet has captured and shared camera views of the Earth since moving aboard the International Space Station in mid-November.
- **Lettuce on ISS:** [Come again? KSC space lettuce on ISS menu](#) Just a year ago, U.S. astronauts were experimenting with a small green house aboard the International Space Station called *Veggie* for growing red lettuce. This year, they are nibbling leaves of the fresh leafy vegetable and experimenting with techniques to hasten its growth.
- **Discussions with Bigelow:** [Bigelow Aerospace seeking additional use of experimental ISS module](#) NASA and Bigelow Aerospace are in discussions over wider use of the Bigelow Expandable Aerospace Module (BEAM) launched to the International Space Station and deployed in April and May 2016. The module was expanded to kick-off a two year evaluation of its suitability for use by astronauts as an in space habitat and/or orbital module for a future space stations. Space Station astronauts enter only occasionally to gather BEAM data. According to the report, the NASA/Bigelow discussions are focused on "extended use" of the module.

### Orion and Space Launch System

- **Orion in 2017:** <https://www.nasa.gov/feature/nasa-readies-for-major-orion-milestones-in-2017>
- **Orion Spacecraft Testing:** [Astronauts seek the right vibe in Orion tests](#) Tests are underway at NASA's Johnson Space Center to assess how the vibrations that accompany the launch of the Space Launch System will affect the ability of Orion astronauts to monitor the performance of their spacecraft in the early minutes of future missions of deep space exploration.
- **SLS Rocket Test Stand:** [Huge NASA rocket test stand constructed in 2.5 years | Time-lapse video](#) Video offers the latest on the lengthy construction of a NASA Marshall Space Center test stand to help prepare the Space Launch System rocket for its first test flight in late 2018. SLS is a cornerstone of U.S. efforts to reach the Mars environs with human explorers in the 2030s.

### Commercial Space Transportation

- **Contracts for Boeing and SpaceX:** [Boeing and SpaceX win four more NASA orders for space taxis, with one big 'if'](#) NASA has agreed to purchase four more crew launches to the International Space Station from Boeing and SpaceX -- if their spacecraft achieve agency certification. Each company had contracts for two flights previously. The two companies will attempt to achieve certification with test flights currently scheduled for late 2017 through 2018. Initially.
- **DoT Oversight of Commercial Launches:** [Chao punts on whether commercial space should be restored to DOT secretary's office](#) During confirmation hearings, Department of Transportation Secretary designate Elaine Chao was non-committal on whether the U.S. Office of Commercial Space, now part of the department's Federal Aviation Agency, should be returned to the secretary's office. The office issues licenses for U.S. commercial launches, domestic space ports and other space related activities.
- **Safety Report:** [NASA safety advisory group raises concerns about SpaceX rocket fueling process](#) In its annual safety report to Congress, the NASA Aerospace Safety Advisory Panel

raises concerns about SpaceX's fueling protocol for future agency contracted Commercial Crew Program launches of astronauts to low Earth orbit destinations, including the International Space Station. The issue arose after the September 1 SpaceX Falcon 9 rocket launch pad fire and explosion.

### **Space Policy, Missions, Benefits, International ...**

- **Human Missions to Mars:** [Why Mars is the best planet](#) The passage of time, four billion years, has separated Mars and the Earth. The two planets may once have exhibited similar conditions, including temperate environments. However, while life thrived on the Earth, Mars turned cold and desert-like. The red planet may hold answers to why the fortunes of the two planets are so different. The mystery makes Mars a significant destination for human and robotic explorers. (See also: [Six essential reasons why we need to send humans to Mars](#), [Mission to Mars: NASA engineer shares experience, studies about the 'Red Planet'](#), [Mars is within reach](#) and [Renewed hope of a mission to Mars](#))
- **Asteroid Mission:** [Asteroid missions face delays and restructuring](#) Two U.S. and European robotic missions, intended to further efforts to detect and fend off an asteroid on a collision course with the Earth, face schedule development slips. In the case of NASA's Asteroid Redirect Mission (ARM), the failure by Congress to agree on a budget for 2017 is a major factor. NASA considers ARM an important part of preparing for the human exploration of Mars.

**Citizens for Space Exploration** – a pro-space, taxpayer, grassroots advocacy group ([www.citizensforspace.org](http://www.citizensforspace.org)) – has travelled to Washington, D.C. the past 25 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 on a weekly basis. The intent is to provide an easy, quick way to stay abreast of key human space exploration program and policy developments.