



## **Human Space Exploration Update (Jan 18-22, 2016)**

### **International Space Station**

- **Space Walk:** [Spacewalk terminated due to spacesuit water leak](#) NASA's Mission Control called an early end to a planned 6 1/2 hour spacewalk outside the International Space Station by U.S. and British astronauts Tim Kopra and Tim Peake on Friday. The decision came in response to the appearance of water in the helmet of the NASA space suit worn by Kopra. The incident was reminiscent of a July 2013 spacewalk outside the Space Station in which European Space Agency astronaut Luca Parmitano's helmet filled with more than a liter of water from the cooling system. Kopra and Peake did manage to replace an external voltage regulator on the Space Station that restored a solar power channel.
- **Space Flower:** [Astronaut Scott Kelly shares 'space flower' photos](#) Aboard the International Space Station a Zinnia flowers, and commander Scott Kelly shares a photo. As recently as December, the plants, part of NASA's Veggie experiment, were suffering from mold. Scientists on the ground helped to guide Kelly to a remedy.

### **Orion and Space Launch System**

- **Orion Pressure Vessel:** [Engineers mark completion of Orion's pressure vessel](#) Engineers at NASA's Michoud Assembly Facility near New Orleans finished welding the pressure vessel for NASA's Orion spacecraft, built by Lockheed Martin, designated for launch aboard the unpiloted Exploration Mission-1 test flight in late 2018. The critical welding activities for seven major pieces of the aluminum pressure vessel were completed on Jan. 13.
- **SLS Prepares for 2018:** [NASA facilities, teams ramp up SLS flight production for 2018 maiden flight](#) Multiple NASA and contractor facilities are ramping up production and testing activities in anticipation of Exploration Mission-1, the space agency's planned late 2018 first unpiloted test flight of the Space Launch System exploration rocket with the Orion crew capsule. EM-1 will take the Orion spacecraft around the moon and back to Earth for a splashdown and parachute recovery.

### **Commercial Space Transportation**

- **Commercial Crew Program Goals:** [NASA outlines Commercial Crew goals critical for upcoming test flights](#) NASA's Commercial Crew Program set out 2016 milestones on Wednesday for its industry partners, Boeing and SpaceX, if they are to achieve their first test flights of the CST-100 Starliner and crewed Dragon in 2017. "Our success depends on the work we're doing now to make sure every component and system that will go into these vehicles is safe and reliable for the future," said NASA's Kathy Leuders who manages the endeavor.

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

- **Ninth Planet:** [Ninth planet may exist beyond Pluto, scientists report](#) Astronomers from the California Institute of Technology believe observations of distant Kuiper Belt objects point to the presence of an undiscovered "super Earth," a planet with a mass between that of the Earth and Neptune. Findings were presented in the latest edition of the Astronomical Journal.
- **Mars and Moon:** [NASA's Journey to Mars and ESA's Moon Village enable each other](#) The coming International Lunar Decade, 2020 to 2030, coupled with European Space Agency interest in a lunar village and U.S. interest in a human Mars settlement could merge with benefits for a growing commercial space sector, according to a trio of experts and members of the International Lunar Decade Working Group.
- **Government-led Space Program:** [Charles D. Walker: Don't relinquish all space exploration to private firms](#) In 1984-85, Walker represented U.S. industry on three NASA space shuttle missions in a bid to develop new medications. In a guest column, he suggests that growing enthusiasm for commercial space may not be enough to take humans all the way to Mars. "...as much as I support the private space industry, experience and common sense tell me that a commercial Mars human landing won't ever get off the ground not unless NASA goes there first," notes Walker. "Businesses are slaves to short-term balance sheets, and private space-industry investors and shareholders are notoriously risk-averse. Even wealthy entrepreneurs won't throw their money away."
- **Russia's Space Exploration Plans:** [Russian space agency scales back plans as crisis shrinks budget](#) A tanking global oil price is taking a toll on Russia's space flight aspirations. Plans to place a cosmonaut on the moon are being rolled back from 2030 to 2035. (See also: [Russia to spend over \\$300 million on developing super heavy rocket](#))
- **China's Space Program:** [China plans new Space Station, two new rockets in 2016](#) China is preparing to launch Tiangong-2, the country's second space station, as well as its sixth launch of astronauts in 2016. Tests of the powerful new Long March 5 and more modest Long March 7 launch vehicles are planned this year as well, according to the China Aerospace Science and Technology Corp.

## **Florida**

- **Space School:** [Space School offers hands-on learning, time with astronauts](#) In Titusville, Fla., students at Apollo Elementary School pursue their science studies at the Kennedy Visitor Center before a display that features the retired shuttle Atlantis and a mockup of the Hubble Space Telescope. "It takes nothing to keep their attention," said Beth Faulkner, a science teacher from Apollo Elementary, as her students worked on a math assignment.
- **New Space Opportunity at the Cape:** [New player Masten eyes Cape for launches, research](#) Based in Mojave, Calif., Masten Space Systems plans to open a business office in Cape Canaveral, Fla., joining an already growing community of launch services providers. Masten is involved in the development of a reusable space plane for the Department of Defense.
- **Orbital ATK Rocket:** [Orbital developing rocket to compete with SpaceX, ULA](#) Orbital ATK plans a new medium to heavy lift rocket that will compete for the launching of U.S. national security satellites. The yet to be named rocket will depend of solid fuel propulsion and could make its inaugural flight in 2019.

**Citizens for Space Exploration** – a pro-space, taxpayer, grassroots advocacy group ([http://www.bayareahouston.com/content/c\\_s\\_e/c\\_s\\_e](http://www.bayareahouston.com/content/c_s_e/c_s_e)) – has travelled to Washington, D.C. the past 24 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.*