



## **Human Space Exploration Update (April 13-17, 2015)**

### **Congress**

- **House Space Subcommittee Hearing:** [Bolden defends ARM, earth science, American preeminence at House hearing](#) NASA Administrator Charles Bolden defended his agency's \$18.5-billion budget request for 2016 before the U.S. House Space Subcommittee on Thursday. Bolden fended off criticism that the agency is spending too much on Earth sciences and not enough on exploration. He faced questions from lawmakers over the absence of an exploration road map that explains how the planned Asteroid Retrieval Mission fits into the agency's overall human exploration strategy. (See also: [Senate appropriators unhappy with NASA FY2016 budget request](#))

### **International Space Station**

- **SpaceX Resupply Mission:** [SpaceX Dragon capsule arrives at ISS](#) A SpaceX Dragon capsule loaded with 4,300 pounds of research equipment and other supplies reached the International Space Station early Friday. European Space Agency astronaut Samantha Cristoforetti grappled the capsule with Canada's robot arm at 6:55 a.m., EDT.
- **Earth Views from ISS:** [Raw: GoPro camera captures astronaut spacewalks](#) International Space Station commander Terry Virts provides views of the Earth he witnessed during a recent spacewalk.
- **3-D Printing:** [How 3-D printing is going out of this world](#) Space agency engineers from the U.S. and Europe look to 3-D printing as a possible technique for turning the soils of Mars and the moon into structures for human explorers. Some of the advanced planning has been encouraged by an experiment aboard the International Space Station in which astronauts used a prototype 3-D printing device to make some simple hand tools.

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

- **Orion Update:** [http://www.nasa.gov/sites/default/files/files/Orion\\_Monthly\\_Newsletter\\_2-2015.pdf](http://www.nasa.gov/sites/default/files/files/Orion_Monthly_Newsletter_2-2015.pdf)
- **Orion Crew Capsule Weld:** [EM-1 Orion crew module set for first weld milestone in May](#) Weld assembly of the Orion crew capsule designated for an uncrewed 2018 test flight aboard the first Space Launch System heavy lift rocket is scheduled to get underway in May at NASA's Michoud Assembly Facility. The test crew capsule will incorporate improvements made in response to the successful Dec. 5, 2014 two-orbit test flight of an uncrewed Orion capsule launched on a Delta 4 Heavy. The assembly features "seamless" friction stir welding. The high performance of the heat shield in December's test will permit some weight savings.
- **Space Launch System:** [Work platform for NASA's Space Launch System delivered to the VAB](#) The work platform trucked to the Vehicle Assembly Building at NASA's Kennedy Space Center will permit work on the agency's Space Launch System heavy lift rocket that is under

development to start U.S. explorers on future missions of deep space exploration. The first SLS launch, an uncrewed test mission, is targeted for 2018. The first crewed test flight is planned for 2021.

### **Commercial Space Transportation**

- **CST-100 Crew and Suits:** [Boeing to unveil crew, spacesuits for CST-100 test flight this summer](#)  
An announcement from Boeing on the two test pilots assigned to the first crewed flight of the CST-100 space capsule under development as part of NASA's Commercial Crew Program is expected this summer. The company will reveal the pressure suits selected for the commercial test flight planned for 2017 as well.

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

- **Asteroid Retrieval Mission:** [Bolden not concerned about ARM criticism](#) NASA Administrator Charles Bolden says he's not concerned by a finding from the NASA Advisory Council earlier this month that concluded the agency should not pursue the Asteroid Redirect Mission. ARM would test new solar electrical propulsion technologies to robotically gather a boulder from the surface of a large asteroid and maneuver the rock into orbit around the moon as a destination for U.S. astronauts. The astronauts would be launched on a test mission aboard NASA's Space Launch System heavy lift rocket and Orion crew capsule. The NAC urged NASA to aim for the Martian environs instead. (See also: [Should NASA's next mission be to an asteroid or a Martian moon?; NAC adopts finding to redirect the Asteroid Redirect Mission -- to Mars](#))
- **Mars and the Next President:** [NASA hopes Mars plans flexible enough to survive administrations](#) In sessions with the NASA Advisory Council at the conclusion of last week, top space agency space flight planners say they will wait on some key decisions about efforts to reach Mars with humans in the 2030s until the next presidential administration. Among those that could come around 2020 is where to target missions leading up to the landing of a human spacecraft on the Martian surface.
- **Mars Exploration:** [Op-ed | Prescription for Mars: Stay the course, don't screw up](#) Explore Mars Inc., executive director Chris Carberry urges the space community to maintain a focus on Mars as the next destination for human explorers, using NASA's Space Launch System heavy lift rocket and the Orion crew exploration capsule as enablers. To do otherwise is to become locked in a cycle of reinventing a space program over and over.
- **Space Cooperation with China:** [Editorial: Putting space above politics](#) An editorial calls on the U.S. to partner with China in space by overlooking international tensions, just as it has with Russia and the former Soviet Union for more than four decades. "China is going to be a major player in space, with or without NASA," according to the editorial. "It is better for the U.S. to have some influence on how it enters the club."
- **Russia's Plans for the Moon:** [Russia plans manned mission to Moon in 2029-2030 per space agency chief](#) Russia's federal space agency, Roscosmos, intends to land on the moon with human explorers in 2028-29, agency chief Igor Komarov said on Tuesday.

### **Florida**

- **KSC Master Plan:** [LC-39A major part of NASA's "master plan" for Kennedy Space Center](#) NASA looks to new launch pads at the Kennedy Space Center as part of a strategy to become a multi-user launch complex.
- **New ULA Rocket:** [ULA chief explains reusability and innovation of new rocket](#) United Launch Alliance's president and CEO Tony Bruno explains the joint venture's reusability strategy for the

new Vulcan launch vehicle. (See also: [ULA's Vulcan rocket embraces reusability, new upper stage](#); [ULA's next rocket to be named Vulcan](#))

**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 23 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.