Human Space Exploration Update ***(March 16-20, 2015)***

Congress

- **Culberson Endorses Lunar Orbiter and Mars Rover Missions:** Culberson pledges protection for Lunar Orbiter, Mars Rover missions Rep. John Culbertson, who chairs the House appropriations panel responsible for NASA's budget, vows to ensure the agency's Mars Opportunity rover and the Lunar Reconnaissance Orbiter have funds in 2016 to continue their missions. Both Opportunity and LRO would not be funded in 2016 under the latest White House budget proposal.

- **NASA's "Core" Mission:** The core of NASA's mission What's NASA's core mission? U.S. Sen. Ted Cruz, the new chairman of the space subcommittee of the Senate Commerce Committee, raised the issue in a hearing last week on NASA priorities. Cruz suggested NASA was taking from exploration and giving to Earth sciences. Perhaps, Earth studies should be transitioned from NASA to another federal agency, suggested a fellow lawmaker on the panel. Another panelist suggested NASA's problem was an inadequate budget. Essayist Jeff Foust suggests the discussion over NASA's priorities is a familiar one that seldom changes much. (See also: It's time to refocus NASA's energies and Battle brewing over NASA funding)

International Space Station

- **Inflatable to ISS:** Bigelow module ready to fly to Space Station The changing face of the International Space Station's U.S. segment this year will include the addition of the Bigelow Expandable Activity Module (BEAM), an inflatable compartment that will enable NASA to study how well the structure stands up to the space environment. BEAM is slated to launch to the ISS in September for installation on the Tranquility module. Bigelow produced the module using NASA technology that could play a role in future human deep space exploration. (See also: One giant leap for...private, inflatable space housing)

- **One Year on ISS:** Astronaut Scott Kelly: Merchant marine to a year in space | video Kelly, awaiting a Mar. 27 lift off on a yearlong mission to the International Space Station with Russian cosmonaut Mikhail Kornienko, outlines his New Jersey upbringing, service in the U.S. Navy and his path to NASA's astronaut corps.

Orion and Space Launch System

- **SLS Critical Design Review:** SLS program pushing toward critical design review NASA's Space Launch System heavy lift rocket is nearing critical design review, a key milestone that will transition the big launch vehicle from design to production. The first test launch, potentially in 2018, will sent an unpiloted Orion capsule around the moon. Both the SLS and Orion are cornerstones of NASA's plans to start U.S. explorers on missions of deep space exploration.

- **Orion/SLS/Exploration App:** http://www.nasa.gov/content/new-nasa-app-shares-excitement-for-deep-space-missions/

Commercial Space Transportation

- **Dream Chaser Proposal:** Sierra Nevada proposes modified Dream Chaser for Space Station cargo missions Sierra Nevada will compete for a NASA contract to launch supplies to the International Space Station with the Dream Chaser. Sierra Nevada lost a bid to include the Dream Chaser in the small lineup of commercial spacecraft selected by NASA to transport astronauts to and from the space station last year. Sierra Nevada is competing with Lockheed Martin, Boeing, SpaceX and Orbital ATK. NASA is expected to spend $1.4 billion annually on re-supply missions under new contract awards.

Space Budgets, Policy, Missions, Benefits, International …

- **Journey to Space – 3D Film Premiere:** Now playing: 'Journey to Space' launches into giant-screen theaters Narrated by Star Trek's Patrick Stewart, *Journey to Space*, is now showing at NASA visitor centers, space museums and science centers across the United States. More openings are planned for the large-format documentary that showcases NASA's plans for future human exploration, including missions to Mars.

- **Why We Should Explore:** Making a case for space exploration Has U.S. enthusiasm for deep space exploration stalled? In an op-ed, United Launch Alliance rocket scientist George Sowers explains why it should not. The reasons include preserving a pioneering spirit, gaining access to new resources and forestalling extinction in the face of global disaster.

- **Ready for Mars?:** Are humans really headed to Mars anytime soon? Whether it's NASA in the lead or a nonprofit venture like Mars One, the challenge of reaching the Martian surface with human explorers or settlers is challenged by lengthy isolation, risk from spaceflight radiation and the dusty Martian environment. Then, there is the expense, note expert engineers and aerospace historians

- **Asteroid Retrieval Mission:** NASA Langley awaits decision on Asteroid Redirect Mission NASA executives looks to a late March decision on whether the proposed Asteroid Retrieval Mission will capture a small asteroid or a boulder from a larger asteroid. The decision, originally expected in December, could be postponed again. Either option is intended to prepare NASA for future human missions to Mars by placing the asteroid, or boulder, in orbit around the moon, where it could be reached by NASA astronauts.

Florida

- **RD-180 Engine:** McCain accuses Air Force of stalling on RD-180 replacement Senator John McCain, chair of the Senate Armed Services Committee, said the Air Force has “wasted a year doing very little" to end the Defense Department's reliance on Russian rocket engines to launch national security satellites. Doing more means fostering a replacement for the import of Russia's RD-180 rocket engine. (See also: Nelson, Inhofe complain Air Force not following Congressional direction on RD-180)

- **XCOR Aerospace CEO:** XCOR Aerospace picks ex-Air Force official as new CEO XCOR Aerospace has selected a new CEO. John "Jay" Gibson will succeed Jeff Greason. Greason will remain with XCOR as chief technology officer and focus on the final development of the company's Lynx suborbital space planes and other projects.

- **Project Morpheus:** NASA dreams of future Morpheus project templates NASA's efforts to develop a prototype for a future planetary lander score high in an internal review. The lander, assembled at NASA's Johnson Space Center, flew at the Kennedy Space Center as well as Johnson between 2010 and 2014 and served as a "lean development" effort for a spacecraft that

could place substantial payloads on the surface of a planetary body -- like those needed to support human exploration.

Citizens for Space Exploration *– a pro-space, taxpayer, grassroots advocacy group (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.*