

The Aerospace Update



July 11, 2017

Third Try's a Charm

Image Credit: SpaceX

SpaceX Notches 10th Launch This Year



SpaceX continues to outperform its launch cadence from earlier years, conducting its tenth successful launch this year with a mission for Intelsat on July 5. After 2 previous launch aborts at T -10 seconds, the Falcon 9 mission, delivered Intelsat's fourth Epic-series high-throughput satellite, Intelsat-35e, into geostationary transfer orbit, after launch off from Cape Canaveral Air Force Base on Wednesday, July 5th. It's SpaceX's third launch in 13 days. SpaceX is well on track to hit the target it set last year of 18 launches in a single year. SpaceX did not recover the first stage booster after launching Intelsat-35e because the 14,900 lbs satellite required additional fuel to reach its intended orbit.

Video Credit: SpaceX

Source: Caleb Henry @ SpaceNews.com

Intelsat 35e is The fourth “Epic-class” Relay Satellite Developed and Launched by Intelsat



Intelsat-35e, built by Boeing, carries a mix of wide and spot beams in C-band, and high power wide beams in Ku-band. Luxembourg and McLean, Virginia-based Intelsat plans to use the satellite for direct-to-home television broadcasts, wireless backhaul and internet access to enterprise and mobility customers. The satellite will cover the Caribbean, Europe, Africa and large swaths of North and South America.

ESA Unveils BepiColombo Mercury Orbiters Ahead of October 2018 Launch




After almost 20 years of development, the European Space Agency has finally unveiled the BepiColombo Mercury orbiters and confirmed the mission is on track for an October 2018 launch. The 1.65-billion-euro mission, a joint venture between ESA and the Japan Aerospace Exploration Agency (JAXA), is Europe's first attempt to enter the orbit around scorching Mercury, the closest planet to the sun. The 4,100-kilogram BepiColombo consists of two orbiters that will launch together — the ESA-managed Mercury Planetary Orbiter (MPO) and the JAXA-owned Mercury Magnetospheric Orbiter (MMO). The two spacecraft will be delivered to the orbit around Mercury stacked on top of each other by the Mercury Transfer Module (MTM).

Source: Tereza Pultarova @ SpaceNews.com

Photo Credit: ESA

Optical Telescope Will Seek Sources of Gravitational Waves



A new telescope in La Palma, in Spain's Canary Islands, coordinates with gravitational-wave detectors to track down optical signals of the colossal collisions that cause them. The Gravitational-wave Optical Transient Observer (GOTO), built as an international collaboration led by the U.K.'s University of Warwick and Australia's Monash University, was officially inaugurated July 3. GOTO will be able to respond to alerts from LIGO (Laser Interferometer Gravitational-wave Observatory) and other gravitational-wave detectors, and search for any optical trace of the cataclysmic events that could have caused the tiny distortions in space-time.



On the Shoulders of Giants

ESA astronaut Paolo Nespoli (left) along with Expedition 52 crewmates Sergey Ryazanskiy of Roscosmos (centre) and Randy Bresnik of NASA (right) took to Red Square in Moscow yesterday to perform ceremonies ahead of their 28 July launch to the International Space Station.

The crew paid tribute to Yuri Gagarin, the first human in space, and four other cosmonauts by placing a carnation at each memorial along the Kremlin Wall in Red Square. Other rituals include special signings, haircuts and some gardening.

Many of these traditions originate with Gagarin himself. A week before his launch, he planted a tree outside Baikonur Cosmodrome, and then got a haircut two days before his flight.

Since then, all crews launched aboard a Russian launch vehicle do as Yuri did. Some traditions were added later, such as signing the Visitor's Book at Yuri's office in Star City, which has been preserved just as he left it.

Like all rituals and traditions, they serve as a source of calm and comfort ahead of a taxing journey and cement the bond between fellow space explorers.

www.esa.int/spaceinimages/Images/2017/07/On_the_shoulders_of_giants

Photo Credit: NASA (Bill Ingalls)

ESA Tests Radical 'Space Stretcher' in Underwater Simulation



Astronauts participating in a 10-day underwater mission off the coast of Florida have tested a new device that could one day save lives on the moon. ESA's Lunar Evacuation System Assembly (LESA) unfolds into a pyramid-shaped structure that can lift a person using a system of pulleys, so they can then be moved to safety on a wheeled stretcher. Devices that allow for fast rescues will be critical in helping a fallen crew-member on the lunar surface, where the weight and mobility limitations of astronauts' spacesuits make it extremely difficult to attempt to carry an incapacitated person.

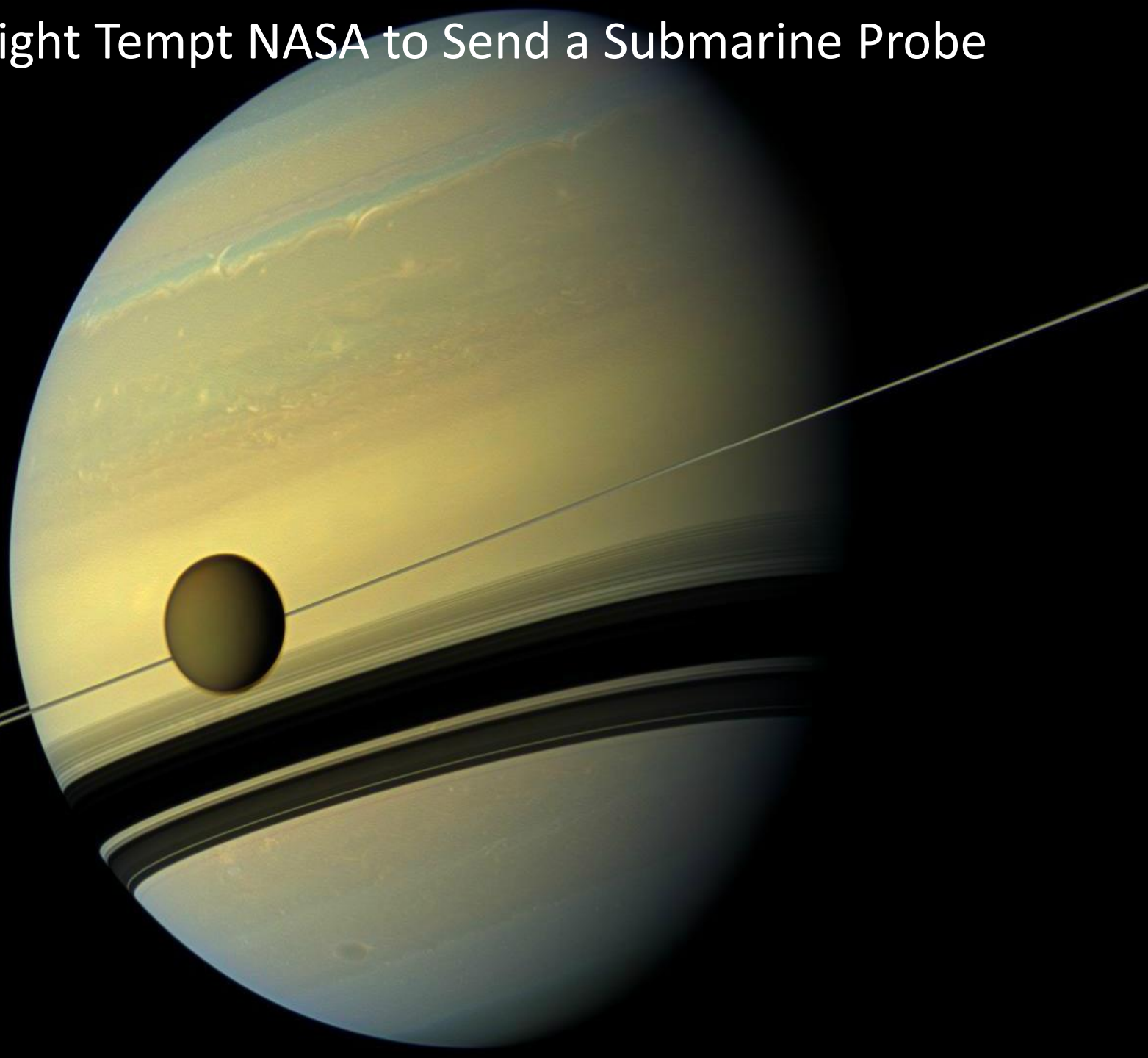
Source: CHEYENNE MACDONALD @ DAILYMAIL.COM

New Discovery at Titan Might Tempt NASA to Send a Submarine Probe


Titan is a special place. It's the biggest of Saturn's 62 moons, it's the only one with a dense atmosphere, and--other than Earth--it's the only object in space where scientists have found clear evidence of liquid lakes and seas. "Titan is a fascinating real-scale laboratory for those interested in the mechanisms that lead to the apparition of life," Cyril Grima, a geophysical researcher at the University of Texas, told Digital Trends. NASA and ESA's Cassini-Huygens probe arrived at Titan back in 2004 and revealed massive lakes of liquid methane. Just a decade later, NASA toyed with the idea of sending a submarine to the moon to study its depths. That idea looks even more tempting now that Grima and his team have published a study showing that some of Titan's seas are almost completely calm.

Source: www.yahoo.com

Image Credit: NASA/JPL-Caltech



New Mysteries Surround New Horizons' Next Flyby Target

A photograph showing the silhouettes of four people standing on a dark, rocky outcrop, looking up at a vast, starry night sky. The sky is filled with numerous bright stars and a prominent, glowing band of light, likely the Milky Way galaxy, stretching across the upper portion of the frame. The people are positioned in the lower half of the image, their forms dark against the bright background of the stars.

Scientists have been sifting through data gathered from observing New Horizons' next flyby target MU69's quick pass in front of a star – an astronomical event known as an occultation – on June 3rd. While MU69 itself eluded direct detection, the June 3rd data provided valuable and unexpected insights that have already helped New Horizons. “These data show that MU69 might not be as dark or as large as some expected,” said occultation team leader Marc Buie, a New Horizons science team member from Southwest Research Institute (SwRI) in Boulder, Colorado. “The fact that we accomplished the occultation observations from every planned observing site but didn't detect the object itself likely means that either MU69 is highly reflective and smaller than some expected, or it may be a binary or even a swarm of smaller bodies left from the time when the planets in our solar system formed.”

Source: Nasa.gov

Photo Credit: NASA/JHUAPL/SwRI/Henry Throop

F-35 Fires AIM-9x Sidewinder Missile Upside Down



This unique missile launch is a situation we don't expect a pilot to be in very often,' Navy bosses say. 'We have to prove the aircraft, and weapon, can operate at the edges of the flight envelope.' 'We want to provide the maximum capability of the F-35 to the fleet to get them where they need to be for training and operational use,' said James Shepherd, the flight test engineer for the missile test at Patuxent River Navy Base.

Source: Mark Prigg @ Dailymail.com

Orbital ATK Modifying Cessna Caravans Into Low-Flying Attack Aircraft



Since the early 1980s, the Cessna 208 Caravan, a 38-foot propeller plane big enough to seat about a dozen, has primarily been used to deliver mail. But the plane occasionally sees a very different use: conducting military reconnaissance and active combat missions for foreign governments, such as Iraq and Colombia. Orbital ATK is modernizing the Cessnas for the US and other “cash-strapped” countries who are in need of low-flying attack aircraft. Retired US Air Force Gen. Dave Deptula said, “Modifying the Cessna Caravan is an excellent idea for some of the smaller countries who don’t have a large air force.”

FedEx Express, Boeing Collaborate on Next ecoDemonstrator Tests

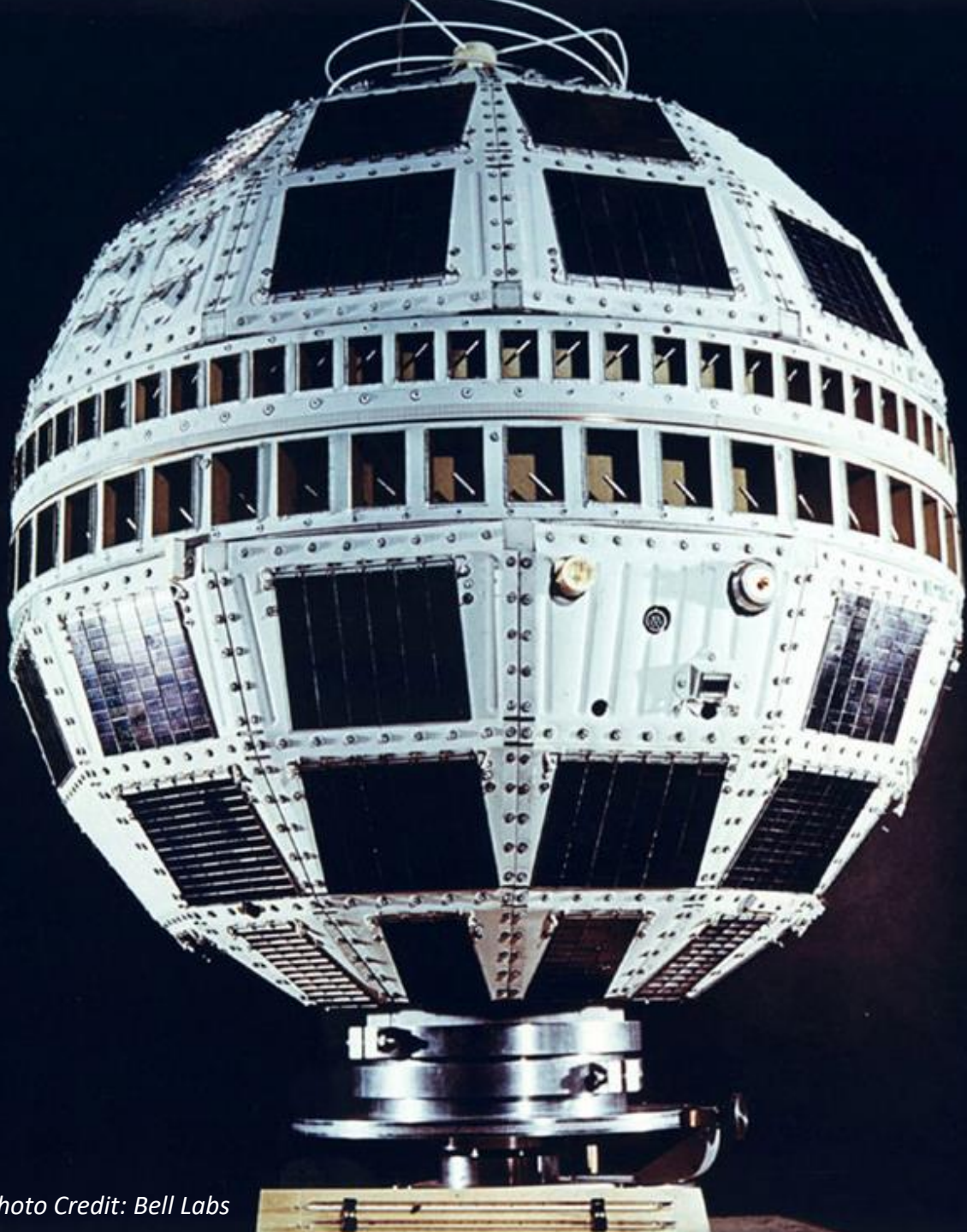


FedEx Express will provide a Boeing 777 freighter as the next test platform for Boeing's ongoing ecoDemonstrator program, set for 2018. In this fifth iteration of the ecoDemonstrator program, a new 777F made for Memphis-based FedEx Express will be equipped with a compact thrust reverser designed to save fuel; flight deck improvements will be implemented and tested; and prototype airplane components constructed by new material waste-reducing manufacturing methods will be subject to inflight evaluation. Boeing said the flight testing will last about three months before the aircraft is returned to FedEx Express.

July 12, 1962: The Day Information Went Global

Telstar was launched by NASA on July 10, 1962, from Cape Canaveral, Fla., and was the first privately sponsored space-faring mission. Two days later, it relayed the world's first transatlantic television signal, from Andover Earth Station, Maine, to the Pleumeur-Bodou Telecom Center, Brittany, France. Developed by Bell Telephone Laboratories for AT&T, Telstar was the world's first active communications satellite and the world's first commercial payload in space. It demonstrated the feasibility of transmitting information via satellite, gained experience in satellite tracking and studied the effect of Van Allen radiation belts on satellite design. The satellite was spin-stabilized to maintain its desired orientation in space. Power to its onboard equipment was provided by a solar array, in conjunction with a battery back-up system.

Source: Nasa.gov



8 July 2011: Last Space Shuttle Flight



Space shuttle Atlantis on Mission STS-135, was launched from Launch Complex 39A at Kennedy Space Center. This was the very last of 135 flights for the United States space shuttle program. The mission commander Captain Christopher Ferguson, Pilot Lieutenant Colonel Douglas Hurley, Mission Specialists Sandra Hall and Colonel Rex Waldheim made the last flight with an elapsed time of 12 days, 18 hours. Atlantis arrived back on 21 July 2011. Shuttle Orbiter Atlantis made 33 flights, spending 306 days in space, orbited the Earth 4,848 times and traveled 125,935,769 miles (202.673.974 kilometers). Atlantis is currently on display at the Kennedy Space Center. Since the space shuttle fleet was retired, the United States of America has had no manned space flight capability.

In The News



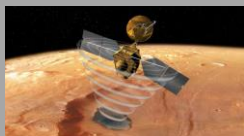
JAXA, NASA Approve Replacement for Failed Hitomi Astronomy Satellite . The Japanese space agency is moving ahead with a smaller-scale X-ray astronomy satellite to replace the failed Hitomi observatory, which spun out of control about a month-and-a-half after its launch last year. The X-ray Astronomy Recovery Mission, or XARM, could launch as soon as March 2021, filling a potential gap in astronomers' X-ray vision of the universe, according to the Japan Aerospace Exploration Agency, or JAXA. *(Stephen Clark @ SpaceFlightNow.com)*



XCOR Aerospace Lays Off Remaining Employees. XCOR Aerospace, a company developing rocket engines and a suborbital spaceplane, has laid off its remaining employees but is continuing efforts to raise funding to maintain at least some of its projects. Michael Blum, a member of the company's board of directors who is also serving as acting chief executive, said some "critical" employees would be retained as contractors as the company attempts to stay alive. *(Jeff Foust @ SpaceNews.com)*



Pence Says NASA to Reorient Towards Human Spaceflight. Vice President Mike Pence said July 6th that the U.S. space program would refocus on human spaceflight, including missions to the moon and Mars, but offered few other details about what such a shift would entail. *(Jeff Foust @ SpaceNews.com)*



NASA Planning August Release of Mars Robotic Exploration Architecture. With time running out to start work on a 2022 Mars orbiter, a NASA official said July 10th the agency plans to have a "coherent Mars architecture" for future robotic Mars missions ready for presentation at an August committee meeting. NASA didn't disclose details about what would be in that architecture, beyond its emphasis on sample return. *(Jeff Foust @ SpaceNews.com)*



Consortium Including Lockheed Martin Wants to Develop a Spaceport in the Scottish Highlands. A consortium, which includes the U.K. division of Lockheed Martin, wants to develop a launch site on the A'Mhoine peninsula in northern Scotland for launches of vehicles carrying small satellites. The consortium has met with local officials and submitted a proposal to the U.K. Space Agency, with a goal of having the facility operational by 2020. *(Jeff Foust @ SpaceNews.com)*