

The Aerospace Update

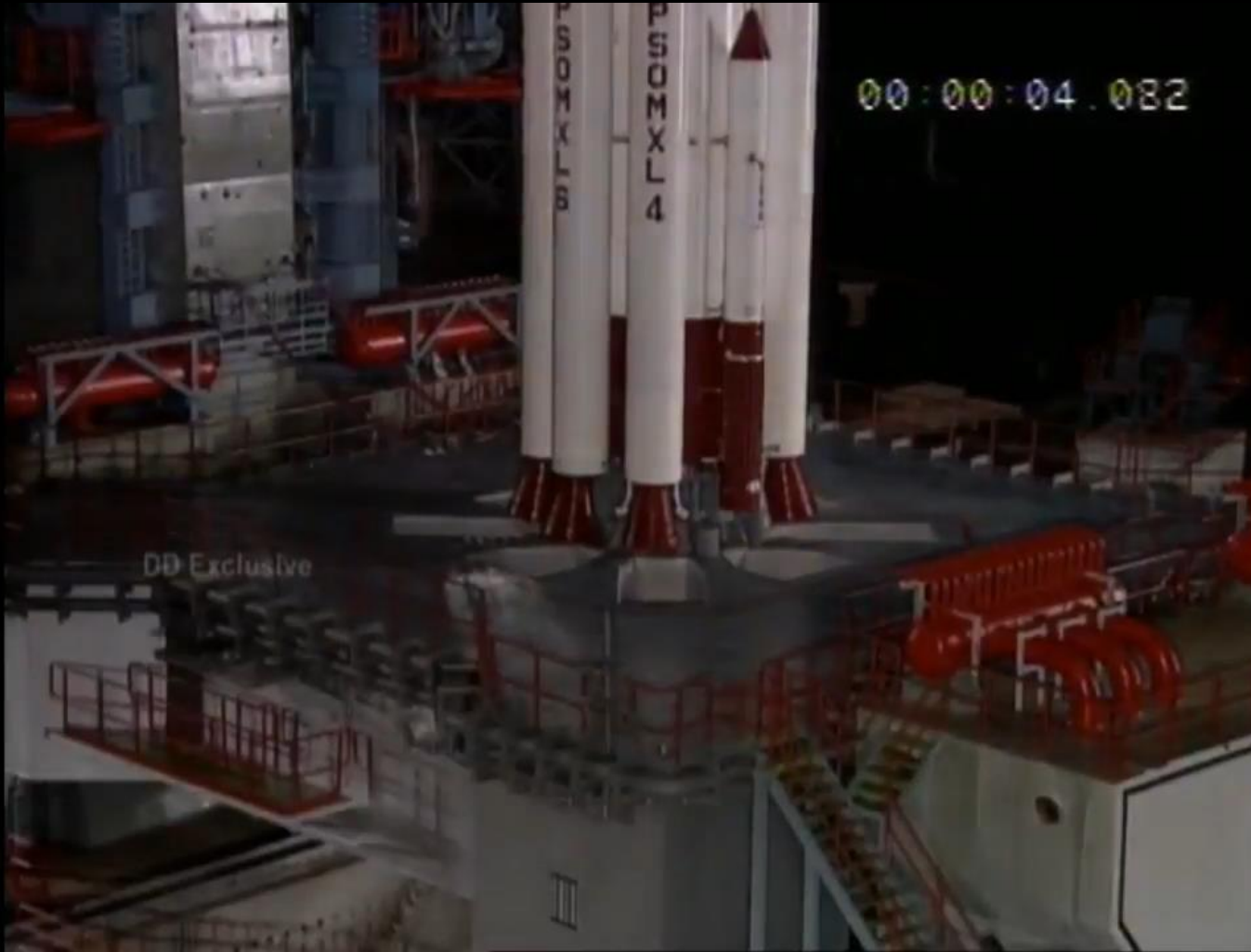


Sept. 5, 2017

ISS Passes Over Hurricane Irma

Video Credit: NASA

PSLV Launch of Navigation Satellite Fails



Video Credit: ISRO & SciNews

An Indian Polar Satellite Launch Vehicle (PSLV) failed to place a navigation satellite into its planned orbit Aug. 31st when the rocket's payload fairing failed to deploy. The rocket's payload fairing was scheduled to separate 3 minutes and 23 seconds after liftoff during the operation of the rocket's upper stage, but failed to do so. The additional mass of the payload fairing may account for the apparent underperformance of the PSLV's upper stages, and would also prevent the satellite's deployment regardless of orbit. This ended a streak of 36 successful launches over a period of 18 years.

Jeff Foust @ SpaceNews.com

Ariane 5 Launch Aborted Moments After Ignition



The launch of a European Ariane 5 rocket was aborted moments after its main engine ignited Tuesday, Sept. 6th. The dramatic last-second hold was the first time an Ariane rocket launch was aborted after engine start since March 2011. Arianespace has not set a new target launch date for the mission, which will loft two U.S.-built communications satellites for Intelsat and B-SAT.

Source: SpaceFlightNow.com


Video Credit: Arianespace

Expedition 52 Crew Lands Safely in Kazakhstan



Expedition 52 Flight Engineer Peggy Whitson, left, Commander Fyodor Yurchikhin of Roscosmos, center, and Flight Engineer Jack Fischer of NASA, are seen inside the Soyuz MS-04 spacecraft shortly after it landed near the town of Zhezkazgan, Kazakhstan on Sunday, Sept. 3, 2017 (Kazakh time). Whitson is returning after 288 days in space where she served as a member of the Expedition 50, 51 and 52 crews. Yurchikhin and Fischer are returning after 136 days in space where they served as members of the Expedition 51 and 52 crews onboard the International Space Station.

NASA's Most Experienced Astronaut

A photograph of astronaut Peggy Whitson inside the International Space Station. She is wearing a grey hoodie and blue gloves, smiling at the camera while working on a large circular hatch. The background is filled with various equipment, cables, and structural elements of the station.

Peggy Whitson, America's most experienced astronaut with nearly two years in orbit over three missions, returned to Earth Saturday, Sep 3rd after an extended 288-day stay aboard the International Space Station. Whitson was launched last Nov. 17th and originally planned to come home with her Soyuz MS-03 crewmates on June 2nd. But with an empty seat aboard the MS-04 spacecraft, U.S. and Russian space managers agreed to extend Whitson's mission by three months, allowing the U.S. crew to conduct additional research. And so, being in the right place at the right time, Whitson became America's most experienced astronaut, passing previous record holder Jeff Williams' mark of 534 days aloft over five missions on April 24.

Source: William Harwood @ CBS News @ SpaceFlightNow.com

Photo Credit: NASA

Additional Cubesats on July 14 Soyuz Flight are Unresponsive

On July 14, the Fregat upper stage sent 72 cubesats and small satellites into three different orbits. Nine cubesats traveled into a 600 kilometer orbit. Eight of those cubesats are not responding. The cubesats were built by UTE-UESOR, Dauria Aerospace, the Moscow Aviation Institute, Moscow State University and GeoOptics. An executive for Glavkosmos, the company that arranged passage for the 72 small satellites on the July 14 Soyuz launch, said Aug. 31 that there is no evidence that rocket problems caused the cubesat failures.

Source: Debra Werner @ SpaceNews.com



Juno Completes Seventh Science Pass of Jupiter

NASA's Juno spacecraft made its seventh science flyby over Jupiter's mysterious cloud tops on Friday, Sept. 1, at 2:49 p.m. PDT (5:49 p.m. EDT and 21:49 UTC). At the time of perijove (defined as the point in Juno's orbit when it is closest to the planet's center), the spacecraft was about 2,200 miles (3,500 kilometers) above the planet's cloud tops.

Citizen scientist David Englund created this avant-garde Jovian artwork using data taken on July 10, 2017 from the JunoCam imager on NASA's Juno spacecraft. The unique interpretation of Jupiter's Great Red Spot was done in a style that pays tribute to French Impressionist painter Claude Monet.

Source: NASA/JPL-Caltech

Image credit: NASA/JPL-Caltech/SwRI/MSSS/David Englund

Ultraviolet Light May be Ultra Important in Search for Life

A photograph of a sunset over a rocky coastline. The sun is a bright, glowing orb on the right side of the horizon, casting a long, thin shadow across the sky. The sky is a deep, warm orange-red. The water in the foreground is dark with some lighter patches reflecting the light. The rocks on the left are dark and jagged.

Research suggests that UV light may have played a critical role in the emergence of life on Earth and could be a key for where to look for life elsewhere in the Universe. A new study by Sukrit Ranjan of the Harvard-Smithsonian Center for Astrophysics (CfA) in Cambridge, Mass., and colleagues suggests that red dwarf stars might not emit enough UV light to kick-start the biological processes most familiar to our planet. For example, certain levels of UV might be necessary for the formation of ribonucleic acid, a molecule necessary for all forms of known life. "It may be a matter of finding the sweet spot," said Robin Wordsworth of the Harvard School of Engineering and Applied Science. "There needs to be enough ultraviolet light to trigger the formation of life, but not so much that it erodes and removes the planet's atmosphere."

SM-6 Intercepts Medium Range Ballistic Missile



A Standard Missile-6 successfully intercepted a target off the coast of Hawaii early Wednesday, the U.S. Missile Defense Agency announced. The SM-6, built by Raytheon at its facility on Redstone Arsenal, intercepted a medium-range ballistic missile target after being fired from the USS John Paul Jones. It's the second time an SM-6 missile has successfully intercepted a medium-range ballistic missile target. SM-6 is an extended range anti-air warfare missile that provides over-the-horizon capabilities against fixed and rotary-wing aircraft, unmanned aerial vehicles and cruise missiles.

Source: Leada Gore @ ai.com

Photo Credit: Missile Defense Agency

Dream Chaser Completes Captive Carry Test Flight

Sierra Nevada Corporation (SNC) carried out a successful captive carry test Aug. 30 of its Dream Chaser vehicle, a key step towards a glide flight of the lifting body spacecraft later this year. The Dream Chaser engineering test article, slung underneath a civilian variant of the Chinook helicopter, took off here at 10:21 a.m. Eastern. It landed at 12:02 p.m. Eastern, with the company declaring the flight a success. During the test, SNC collected data on the vehicle's performance in flight, including operation of radar altimeters, air data probes and other systems that cannot be fully tested on the ground. The captive carry test followed a series of tow tests here in recent months, where the vehicle was towed behind a truck down a runway at speeds of up to 100 kilometers per hour.

Source & Photo Credit: Jeff Foust @ SpaceNews.com



Perlan II Sets New Soaring Altitude Record in Argentina



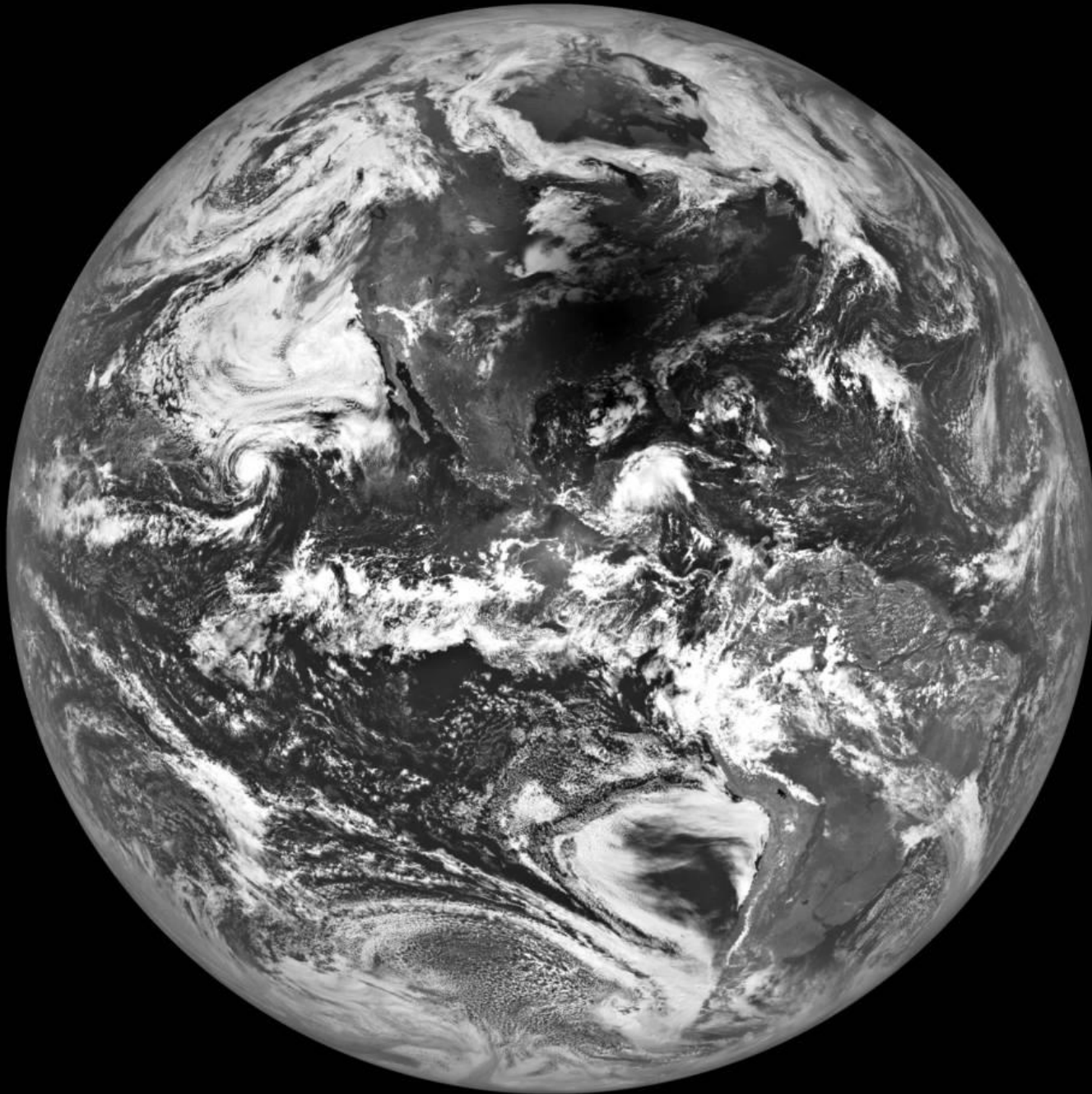
American pilot Jim Payne and Australian pilot Morgan Sandercock in the pressurised, two-seat Perlan II broke on 3 September soared to an GPS-recorded altitude of 52,172ft over southern Argentina, breaking the 11-year-old record of 50,700ft set in the Perlan I (now on display in Museum's Side Gallery) in 2006 at the same location. Although the team broke the record, the Perlan II is optimized to fly at even higher altitudes with a theoretical limit of 91,000ft. The team, sponsored by Airbus, will continue flying in El Calafate until 13 September, seeking out right combination of mountain wave currents and jetstream-like effects to set new records.

BOEING 747 SUPERTANKER FIGHTS CALIFORNIA FIRE FOR 1ST TIME



Global SuperTanker Service's Boeing 747-400 has been activated to fight a California wildfire, marking its first use in the United States. The company says the California Department of Forestry and Fire Protection exercised a call-when-needed contract Wednesday to fight a fire in Butte County about 10 miles east of Lake Oroville. At the time, the SuperTanker was at McClellan Air Force Base near Sacramento. Global SuperTanker Service's Boeing 747-400 has been activated to fight a California wildfire, marking its first use in the United States. The company says the California Department of Forestry and Fire Protection exercised a call-when-needed contract Wednesday to fight a fire in Butte County about 10 miles east of Lake Oroville. At the time, the SuperTanker was at McClellan Air Force Base near Sacramento.

Solar Eclipse as Seen From the Moon



During the total solar eclipse on Aug. 21, NASA's Lunar Reconnaissance Orbiter, or LRO, captured an image of the Moon's shadow over a large region of the United States, centered just north of Nashville, Tennessee. As LRO crossed the lunar south pole heading north at 3,579 mph (1,600 meters per second), the shadow of the Moon was racing across the United States at 1,500 mph (670 meters per second). A few minutes later, LRO began a slow 180-degree turn to look back at Earth, capturing an image of the eclipse very near the location where totality lasted the longest. The spacecraft's Narrow Angle Camera began scanning Earth at 2:25:30 p.m. EDT (18:25:30 UTC) and completed the image 18 seconds later.

Source: Elizabeth Zubritsky @ NASA's Goddard Space Flight Center

In The News



Trump Names Former Navy Aviator to Head NASA. US President Donald Trump announced Friday he plans to appoint James Bridenstine, a former navy pilot and Republican congressman, to head the US space agency NASA. But the nomination drew fire from two US senators from Florida, Bill Nelson and Marco Rubio, who questioned the Oklahoma representative's qualifications to lead such a complex and highly technical agency. (*SpaceDaily.com*)



SpaceX tests first stage of 'world's most powerful rocket'. SpaceX has completed testing of all three first-stage cores on its Falcon Heavy rocket. The company is preparing for the rocket's first flight test, scheduled for early November. SpaceX touts the Falcon Heavy as the "world's most powerful rocket." "Falcon Heavy can lift more than twice the payload of the next closest operational vehicle, the Delta IV Heavy, at one-third the cost," the company claims on its website. (*SpaceDaily.com*)



Pentagon Will Have to Rely on Russian Rocket Engines Until Mid-2020s. The US Defense Department's technical and funding challenges will result in Pentagon using the Russian RD-180 rocket engines until mid-2020s which is longer than it had initially been expected, local media reported on Monday. Atlas V carrier rockets with RD-180 will be used through 2024 or 2025, according to the Pentagon's rocket provider United Launch Alliance cited by the newspaper. The same report, citing people familiar with the matter suggested this term might even be extended until 2028. (*SpaceDaily.com*)



Russia's Sixth Generation MiG 41 Fighter Jet will be Capable of Space Travel and Could Operate Without a Pilot The new interceptor, currently being designed to replace the MiG 31, will be a spiritual successor to its older sibling. It will feature far more advanced armaments and capabilities, according to claims made by its manufacturers. But it could be a while before we see the aircraft in action, with experts predicting they won't be ready until at least 2035. (*DailyMail.com*)