

The Aerospace Update



Hurricane Florence From Space

Sept. 12, 2018

Sept. 13, 2018

Image Credit: NASA

SpaceX, Telesat Achieve Success with Midnight-Hour Launch



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UPCOMING LIFTOFF

STARTUP

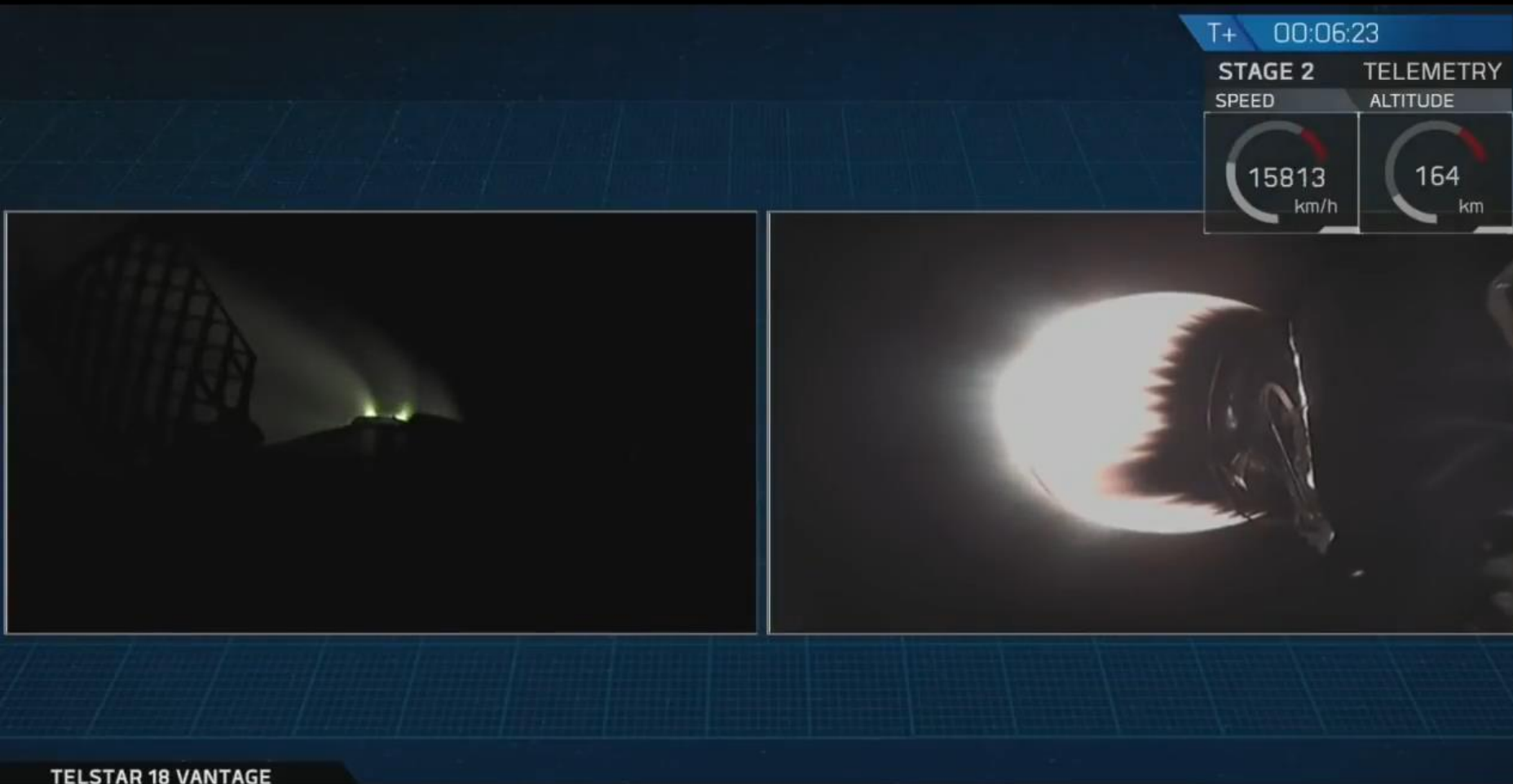
THE FALCON 9 FLIGHT COMPUTERS
HAVE TAKEN CONTROL OF THE
COUNTDOWN

For the second time in seven weeks, SpaceX, Telesat and SSL teamed up for a commercial satellite launch from Cape Canaveral early Monday, this time successfully deploying into orbit a high-power telecom payload developed in a joint venture with a Hong Kong-based company. The Telstar 18 VANTAGE communications satellite, also known as APSTAR 5C, was released into orbit by the Falcon 9's second stage around 32 minutes after liftoff, which occurred at 12:45 a.m. EDT (0445 GMT) Monday, Sept. 10th.

Video Credit: SpaceX

Source: Stephen Clark @ SpaceFlightNow.com

Block 5 Falcon 9 Booster Successfully Lands on Barge “Of Course I Still Love You”




The Falcon 9’s first stage fell out of darkness — with an engine blazing — and set down on SpaceX’s drone ship “Of Course I Still Love You” parked roughly 400 miles (650 kilometers) east of Cape Canaveral. The first stage from Monday’s mission will be inspected, and likely reused on a future SpaceX launch. The landing was the 29th time SpaceX has recovered one of its Falcon boosters intact since the company first accomplished the feat in December 2015.

Video Credit: SpaceX

Source: Stephen Clark @ SpaceFlightNow.com

Telestar 18 VANTAGE to Provide Communication Services to Asia and Beyond



The Telestar 18 VANTAGE spacecraft is an advanced high-throughput satellite built by SSL of Palo Alto, California for Canadian company Telesat. In the coming days and weeks, it will use its own propulsion to establish a circular geostationary orbit where it will enhance broadcast capabilities through much of the developing markets of Asia with its Ku-band antennas and allow direct connectivity from Asia to the Americas with its broad C-band coverage.

China Launches Satellite to Monitor World's Oceans

A photograph of a Long March 2C rocket launch. The rocket is a slender, white, multi-stage vehicle ascending vertically into a blue sky filled with scattered white clouds. At the base of the rocket, a large, billowing plume of white and orange smoke and fire is visible, indicating the point of liftoff. The background shows a landscape of rolling green hills under a clear sky.

A Chinese marine observation satellite designed to monitor ocean pollution, measure sea temperatures and track ship movements successfully launched Friday, Sep. 7th on top of a Long March 2C rocket. The Haiyang satellite series — named for the Chinese word for “ocean” — is dedicated to maritime surveillance, environmental monitoring, and oceanography.

Source: Stephen Clark @ SpaceFlightNow.com

Photo Credit: Xinhua

Puzzling Swirls on the Moon May Come from Ancient, Magnetized Lava

Light and dark markings swirl over the moon, looking like cream swirled into coffee or clouds against a slate gray sky. These lunar swirls may result from ancient, magnetic lava just below the moon's surface, according to one new study. A joint study between researchers at Rutgers University and the University of California, Berkeley, pointed to the moon's internally generated magnetic field and past volcanic activity to explain the lunar swirls. Researchers think that these subsurface magnetic objects are ancient, long, narrow lava tubes formed by flowing lava or lava dikes, which are vertical sheets of magma in the crust of a moon or planet. Past experiments have shown that, when heated above 1,112 degrees Fahrenheit (600 degrees Celsius) in a zero-oxygen environment, certain minerals in moon rocks break down and release metallic iron, making the rocks extremely magnetic. The Reiner Gamma lunar swirl is seen decorating the moon's surface, as in this image taken with NASA's Lunar Reconnaissance Orbiter.

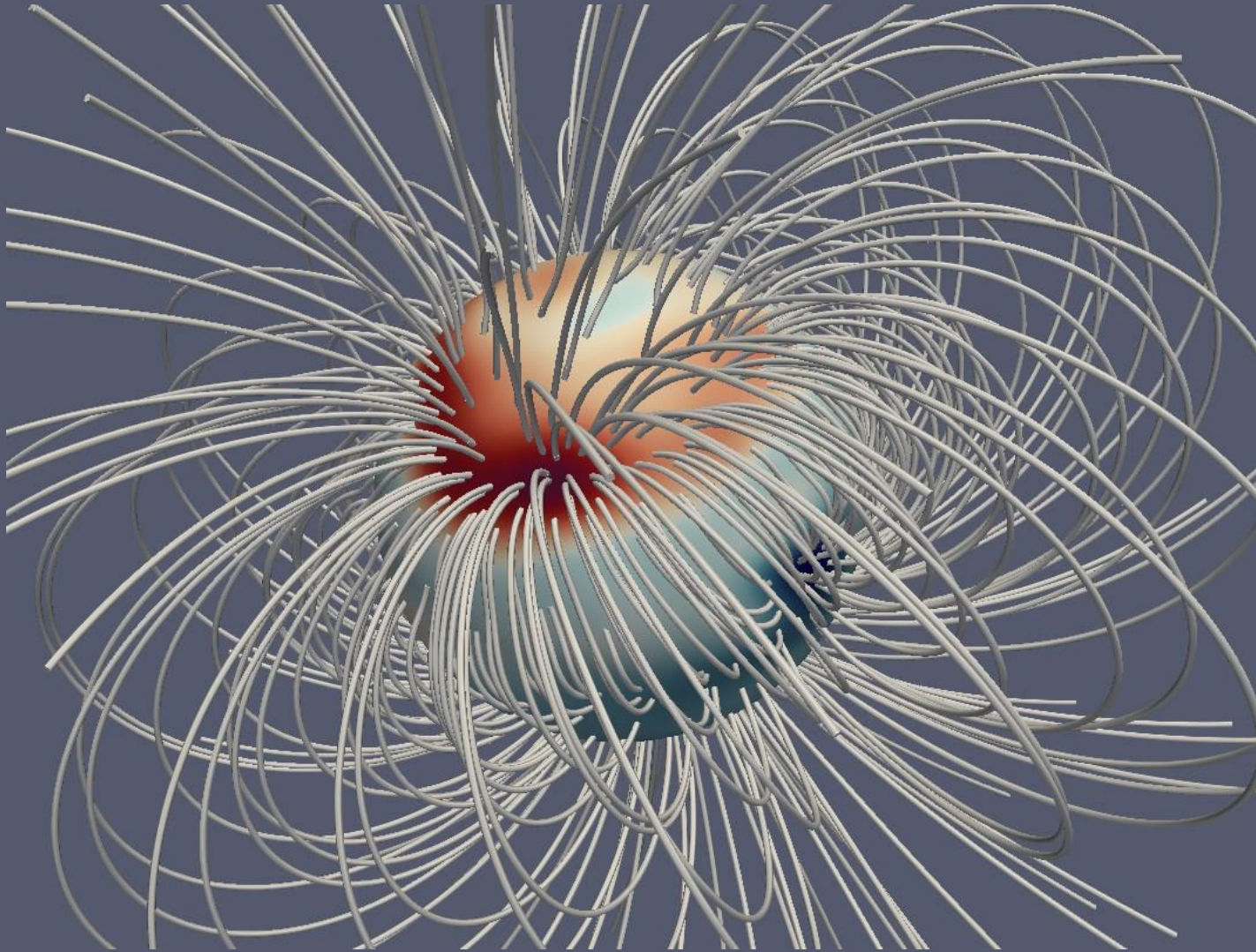


0 100 Kilometers

Cosmic Collision Forges Galactic One Ring—in X-rays

Astronomers have used NASA's Chandra X-ray Observatory to discover a ring of black holes or neutron stars in a galaxy 300 million light years from Earth. This ring, while not wielding power over Middle Earth, may help scientists better understand what happens when galaxies smash into one another in catastrophic impacts. In this new composite image of the galaxy AM 0644-741 (AM 0644 for short), X-rays from Chandra (purple) have been combined with optical data from NASA's Hubble Space Telescope (red, green, and blue). The Chandra data reveal the presence of very bright X-ray sources, most likely binary systems powered by either a stellar-mass black hole or neutron star, in a remarkable ring. Astronomers think that the ring was created when one galaxy was pulled into another galaxy by the force of gravity. The first galaxy generated ripples in the gas of the second galaxy, AM 0644, located in the lower right. These ripples then produced an expanding ring of gas in AM 0644 that triggered the birth of new stars. The first galaxy is possibly the one located in the lower left of the image.

Jupiter's Bizarre Magnetic Field Unlike Anything Ever Seen Before



New data from Juno, a NASA space probe that's been orbiting Jupiter for the past two years, reveals that the gas giant has a field unlike that of any other planet. While Earth's magnetic field is distributed symmetrically around the planet, Jupiter's is much stronger in the northern hemisphere than in the south. And whereas Earth's magnetic field lines converge rather neatly at the poles a bit like a giant bar magnet, Jupiter's field lines look helter-skelter on a map created from the data. The lines emanating from Jupiter's north return not to one point but to two: one near Jupiter's south pole and the other near its equator. The lines in this visualization of Jupiter's magnetic field show that the direction of the magnetic field and the density of the lines corresponds to the strength of the field.

Image Credit: Bloxham, Jeremy; Moore, Kimberly (2018)/Figshare

Source: David Freeman @ nbcnews.com

Exploring the Solar System? You May Need to Pack an Umbrella



Gearing up for its first flight test, NASA's Adaptable Deployable Entry Placement Technology, or ADEPT. ADEPT is a foldable device that opens to make a round, rigid heat shield, called an aeroshell. This game-changing technology could squeeze a heat shield into a rocket with a diameter larger than the rocket itself. The design may someday deliver much larger payloads to planetary surfaces than is currently possible. Aeroshells slow spacecraft during entry and shield them from heat. ADEPT could be key to future NASA missions that require extra-large aeroshells to protect spacecraft destined to land on the surface of other planets, all without requiring larger rockets.

Station Commander Flatly Denies Any Crew Involvement in Soyuz Leak

The head of the Russian space agency caused a stir last week when he said a hole drilled through the side of a Soyuz ferry ship docked to the International Space Station was the result of a deliberate act, "either on Earth or in space." Station commander Drew Feustel said Tuesday it most certainly did not happen in orbit. I can unequivocally say that the crew had nothing to do with this on orbit, without a doubt, and I think it's actually a shame and somewhat embarrassing that anybody is wasting any time talking about something that the crew was involved in," Feustel told ABC News Tuesday in a space-to-ground interview.

Champagne in Space: Zero-G Bottle Lets Tourists Drink Bubbly

Future space tourists may be able to toast the view from orbit with fine champagne, after designers came up with a high-tech bottle made for knocking back bubbly in zero gravity. The Mumm champagne house teamed up with designer Octave de Gaulle, who has specialized in conceiving of everyday objects for the final frontier, to develop the space-age bottles. Journalists from several countries will try the champagne on Wednesday during a specially equipped Airbus Zero G flight taking off from the French city of Reims, in the heart of champagne country.

First Static-Test 777X Breaks Cover



Boeing has released images of its initial 777X static-test airframe, providing a better look at the manufacturer's latest widebody twin. The airframe, a -9 variant, was rolled out of Boeing's Everett, Washington production facility in recent days. While largely complete – with its composite wing mated to the fuselage – the test article still lacks its vertical fin, as well as engines and avionics systems. Boeing expects the 777-9, the lead variant, to make its maiden sortie in 2019, with first delivery following the year after. The smaller but longer-range -8 will enter service two years later. Both variants are powered by GE Aviation GE9X engines.

Boeing Plays Catch-up on 737

An aerial view of a large Boeing aircraft assembly plant. Several Boeing 737 aircraft are in various stages of assembly. The planes are painted in a light blue and white livery. The factory floor is filled with various pieces of equipment, including yellow overhead cranes, workstations, and material handling systems. The aircraft are arranged in a line, with some being fully assembled and others still in the process of being built. The factory has a high ceiling and large windows, providing ample natural light. The overall scene depicts a busy and complex manufacturing environment.

Boeing has re-hired retired employees and temporarily assigned another 600 to its Renton, Washington 737 assembly plant from various sites around the Puget Sound region to help speed delivery of the narrowbodies as the company works to recover from supply chain bottlenecks. Some 50 incomplete 737s sit outside the plant in Renton and at Boeing Field in Seattle awaiting engines and fuselage parts, while production inside the plant continues at the normal rate of 52 airplanes per month. The company has attributed the delivery delays to slow shipments of CFM engines and Spirit Aerosystems fuselage sections. Both companies have pledged to catch up on their delivery commitments in time to allow Boeing to meet its year-end delivery goal set last year.

Source: Gregory Polek @ AINonline.com

Photo Credit: Boeing

In The News



Boeing Suspends Charleston Operations Ahead of Storm. Boeing has ceased operations at its plant in North Charleston, South Carolina, to allow workers to comply with a mandatory evacuation order issued at noon on Tuesday, ahead of an approaching hurricane. The company has also flown several 787s from Charleston to Everett, Washington, near the site of Boeing's West Coast widebody assembly plant to avoid likely damage from the expected winds. *(Gregory Polek @ AINonline.com)*



Japanese Cargo Mission to ISS Postponed. As a result of adverse weather conditions, the Japan Aerospace Exploration Agency (JAXA) has postponed the scheduled launch of a Japanese cargo spacecraft from the Tanegashima Space Center in southern Japan. The unpiloted H-II Transfer Vehicle-7 (HTV-7) is loaded with more than five tons of supplies, water, spare parts and experiments for the crew aboard the ISS. A new launch date has not yet been determined. *(NASA.gov)*



Arianespace Signs Eutelsat as First Commercial Customer for New Ariane 6 Focket. Eutelsat is the first commercial company to commit to launching on Europe's new Ariane 6 rocket, under a five-launch agreement announced Monday in conjunction with fresh contracts for Arianespace to haul a French spy satellite and a pair of Indian communications satellite into orbit. Paris-based communications satellite operator said it concluded a multi-launch agreement with Arianespace, covering missions through 2027. The agreement for five launches includes an unspecified number of flights on the Ariane 6 rocket, scheduled to debut in July 2020. *(Stephen Clark @ SpaceFlightNow.com)*



Boeing KC-46 Program Wins \$2.9 Billion Order for More Aerial Refueling Tankers. The U.S. Air Force has awarded Boeing a \$2.9 billion contract for 18 more KC-46 Pegasus aerial refueling tankers in a deal that includes parts, support equipment, spare engines and wing refueling pod kits. Boeing announced the latest order on Monday, saying it's now on contract to deliver 52 of the tankers to the U.S. Air Force after months of delays and cost overruns. *(Andrew McIntosh @ Puget Sound Business Journal)*



Aeroflot orders further 100 Russia-made planes. Russia's Aeroflot has agreed to order a further 100 Sukhoi Superjet 100 (SSJ 100) planes, representing the biggest deal in the company's contemporary history, it said on Monday. The deal could be worth more than \$3 billion and falls under the Russian flagship carrier's new strategy to focus on regional routes. *(Anna Pruchnicka; @ Reuters.com)*