

Space Beacon



Astronauts Sunita Williams and Butch Wilmore are seen after their triumphant return to Earth following a 9-month mission, as they exit the SpaceX Dragon spacecraft aboard the recovery ship MEGAN.



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Orbital

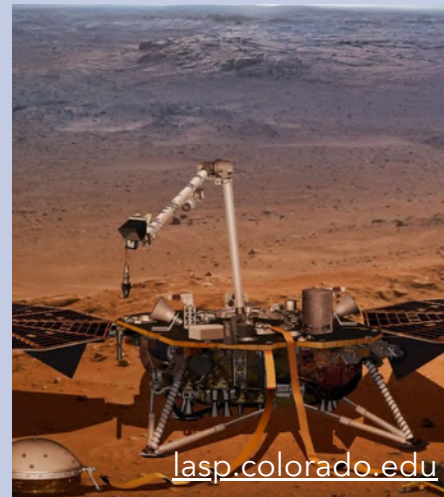


Lead with the most significant celestial events and discoveries

Did you Know
SpaceX's Crew-10 Dragon capsule recently docked at the International Space Station, marking a key milestone in orbital space exploration and astronaut recovery missions

Mars' Water Mystery: Buried, Vanished?

Mars once had surface water, but its fate remains debated. A 2024 study suggested liquid water might still exist deep underground, but LASP scientist Bruce Jakosky challenges this, arguing alternative explanations fit the data. NASA's InSight mission provided seismic data, but Jakosky contends it doesn't confirm water presence. Further exploration is needed to determine Mars' water history, potential habitability, and resources for future missions. Understanding Mars' water cycle could also reveal insights about planetary evolution.



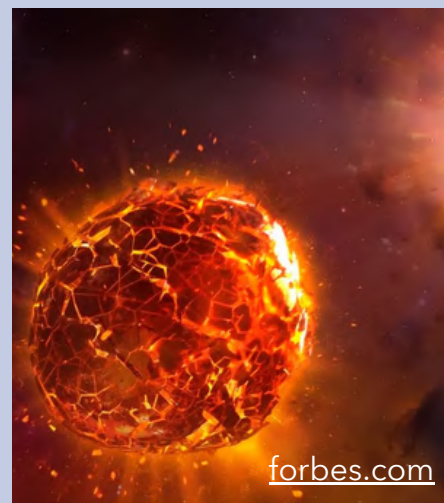
Blazing Mystery: Unpredictable Light Show in Space

Researchers at the University of Texas at Austin have found that river bends differ from those formed by lava or ice, aiding the study of planetary channels on other worlds. This research might help us understand similar formations on Mars and other planets. It could also lead to new insights into the history of water and climate on Earth-like planets. Such studies can enhance our ability to identify past and present signs of water on other planets. This knowledge may prove crucial in the search for extraterrestrial life.



Supernovae Linked to Ancient Mass Extinction Events

A stellar census by Keele University researchers, using ESA's Gaia satellite, reveals a connection between nearby supernovae and two ancient mass extinctions on Earth. These cosmic explosions likely depleted atmospheric ozone, triggering climatic chaos and acid rain. The study links the late Devonian (372 million years ago) and late Ordovician (445 million years ago) extinctions to such events. Researchers calculated a near-Earth supernova rate consistent with these extinctions, highlighting the profound impact of cosmic phenomena on Earth's history.





Lunar Sounder Unlocks Moon's Hidden Secrets

The Southwest Research Institute's Lunar Magnetotelluric Sounder (LMS) has successfully deployed on the Moon via Firefly Aerospace's Blue Ghost 1 lander. Using five sensors, LMS measures electric and magnetic fields to probe up to 700 miles beneath the lunar surface. This mission aims to reveal the Moon's geological history and interior composition, particularly at Mare Crisium, an ancient impact basin. LMS represents the first extraterrestrial use of magnetotellurics, a technique long employed on Earth for resource exploration.



Saturn Crowned Moon King with 128 New Discoveries

Astronomers have identified 128 new moons orbiting Saturn, bringing its total to an astonishing 274. This discovery, made using the Canada-France-Hawaii Telescope, solidifies Saturn's position as the planet with the most moons, surpassing Jupiter's 95. These newly found irregular moons, small and potato-shaped, likely resulted from ancient cosmic collisions. Their study offers insights into the early solar system's dynamics and Saturn's evolution. This discovery showcases advances in astronomy and our cosmic quest.



Gamma-Ray Burst Unveils Cosmic Mystery to Scientists

A mysterious gamma-ray burst, originating from a pulsar (a dead star), has left scientists astonished. This unprecedented event released energy ten trillion times that of visible light, equivalent to 20 tera-electronvolts. Pulsars, remnants of supernovae, are dense celestial objects with powerful magnetic fields. Researchers are now investigating the mechanisms behind such immense energy emissions. Observed in Namibia by HESS, this discovery reveals new pulsar insights and extreme cosmic phenomena.

Titan's methane lakes, a unique landscape in our solar system

Genspace

Cover broader space news not fitting into other categories

Did you Know
The European Space Agency's JUICE mission is set to explore Jupiter's icy moons, aiming to uncover potential signs of life beneath their frozen surfaces

Astronauts Triumphant Return to Earth Began with Hugs

NASA astronauts Sunita Williams and Barry "Butch" Wilmore, who were stuck on the International Space Station due to technical issues with the Boeing Starliner, were finally replaced by a new crew. The fresh arrivals brought hugs and handshakes, marking a joyful moment aboard the ISS. Williams and Wilmore, who had been on an extended stay, will soon return to Earth after their spacecraft undergoes further safety checks. The replacement crew's arrival ensures a smooth transition of responsibilities aboard the ISS.



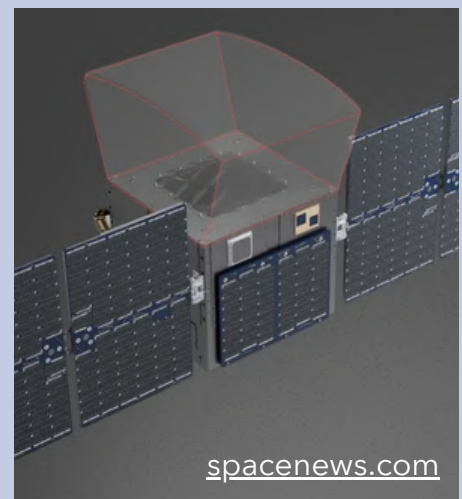
Engineers Test Navigation Tech in Arctic Conditions

ESA engineers conducted groundbreaking tests on navigation technology in the Arctic Circle, collecting 100 terabytes of data over five days. These experiments, part of the Jammertest initiative, aimed to evaluate satellite navigation systems' resilience against interference threats like jamming and spoofing. Using advanced equipment, including high-precision antennas, the team explored vulnerabilities and developed countermeasures. The findings will improve satellite nav reliability, benefiting aviation, telecommunications, and environment research.



Argotec Unveils Flexible Modular Satellite Design

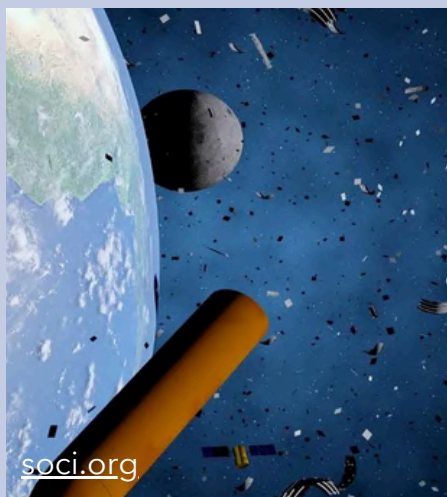
Italian aerospace company Argotec has unveiled the Hawk Plus, a modular satellite platform designed for flexibility and efficiency. The innovative design features plug-and-play panels that allow for quick customization, accommodating various mission needs without extensive engineering changes. This approach enables faster deployment and lower costs, while also allowing payload integration at different locations, enhancing security options. Argotec plans to manufacture these satellites in Italy and the U.S., expanding its global reach in the satellite industry.



Climate Change Worsens Space Debris Risks

Climate change is increasing the amount of space debris, making satellite operations riskier. Rising CO₂ levels cool and contract the upper atmosphere, reducing drag on space junk and allowing debris to remain in orbit longer.

This heightens the risk of collisions, endangering vital satellites for communication and navigation. Scientists warn that growing debris fields could make space operations more difficult and costly. Urgent measures, including better debris management and sustainable satellite design, are needed to prevent worsening orbital congestion.



RBC Signals Expands Global Ground Station Network

RBC Signals has significantly enhanced its global ground station network by acquiring 10 six-meter S- and X-band antennas from Microsoft. These antennas, strategically located across continents, will support small satellite operators and space agencies with improved accessibility and reliability. The acquisition, financed through a sale-and-leaseback arrangement with Space Leasing International, strengthens RBC Signals' position as a leading provider of Ground Station as a Service (GSaaS). This expansion meets rising needs for secure, real-time space communication.

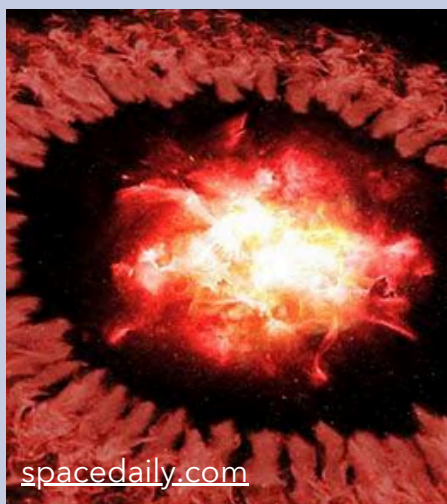


Supernovae May Have Caused Ancient Mass Extinctions

A new study suggests that supernova explosions could have triggered two of Earth's ancient mass extinctions.

Researchers propose that cosmic radiation from these stellar explosions stripped the ozone layer, exposing life to harmful UV rays. The late Devonian and Ordovician extinctions, occurring 372 and 445 million years ago, respectively, may have been linked to these events.

Scientists calculated the frequency of nearby supernovae and found a correlation with extinction periods, reinforcing the theory of cosmic influences on Earth's history.



**The dawn of a new space era,
Commercial spaceflight and beyond**



Satellogy

Focus on recent and upcoming satellites and launches

Did you Know
Infosys is competing for IN-SPACE's ₹1,500 crore satellite constellation project, aiming to revolutionize Earth observation with advanced imaging capabilities

Isar Aerospace to Launch NOSA Satellites Soon

Isar Aerospace will launch NOSA satellites from Norway's Andøya Spaceport, marking a key milestone for European space access. The mission, planned for later this year, supports commercial and institutional satellite deployment. Andøya's location provides strategic benefits for polar and sun-synchronous orbits, essential for Earth observation and communication. This launch boosts Europe's space access while reducing foreign dependence. Isar Aerospace advances its Spectrum rocket for cost-effective satellite deployment.



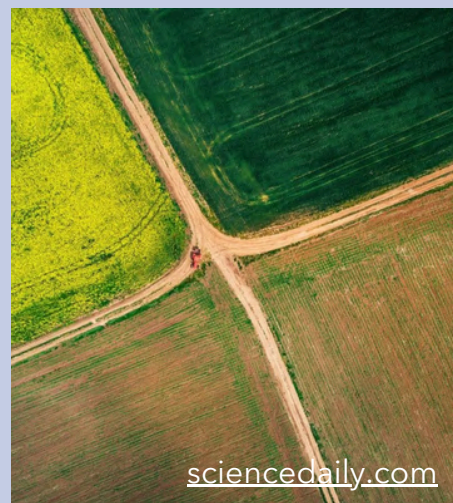
Rocket Lab to Power OneWeb Satellites for Eutelsat

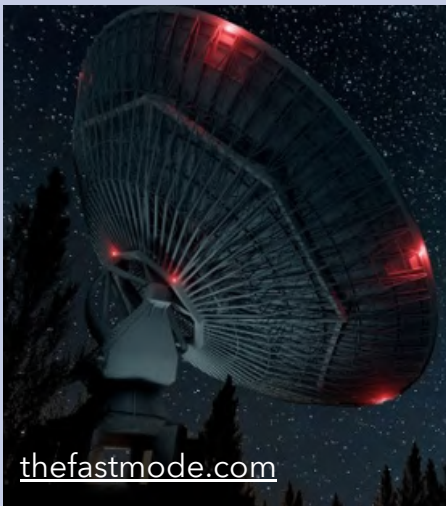
Airbus has awarded Rocket Lab a contract to supply solar panels for OneWeb's satellite constellation, supporting Eutelsat's global connectivity services. Rocket Lab's advanced solar technology will enhance satellite efficiency, improving broadband coverage worldwide. This partnership strengthens the growing demand for reliable satellite infrastructure and reinforces Rocket Lab's position in the space industry. With rising global internet demand, such collaborations are vital for expanding coverage and strengthening remote communication networks.



NISAR Satellite Revolutionizes Global Farming Practices

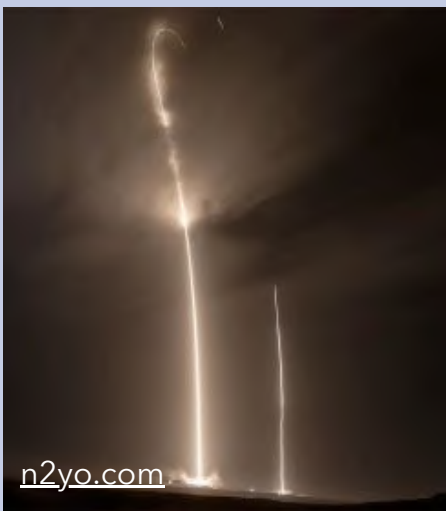
The NASA-ISRO Synthetic Aperture Radar (NISAR) satellite is set to transform agriculture by providing high-resolution, frequent radar data on crops and soil moisture. Using dual-frequency radar, it can penetrate clouds and crop canopies, offering insights into biomass, soil health, and plant growth. NISAR will map croplands globally every two weeks, aiding farmers in optimizing planting schedules, irrigation, and resource allocation. This collaboration between NASA and ISRO marks a significant leap in precision agriculture, enhancing food security and sustainable farming worldwide.





ICEYE Enhances SAR Constellation with Gen-4 Satellites

ICEYE has launched four advanced Generation 4 satellites, strengthening its synthetic aperture radar (SAR) constellation—the largest globally. These satellites, equipped with doubled SAR antenna size and radiated power, deliver unparalleled image quality and expanded imaging areas. They enhance capabilities in natural disaster response, defense, and intelligence. The launch, aboard SpaceX's Transporter-13 mission, marks a leap in SAR technology, enabling faster decision-making and improved situational awareness. ICEYE plans 20+ yearly satellite.



Transporter-13 Launches Dual-Use Satellites into Orbit

SpaceX's Transporter-13 mission successfully deployed 74 payloads, including intelligence and dual-use commercial satellites. Among them was a technology demonstrator from the National Reconnaissance Office, emphasizing the growing collaboration between commercial and government space initiatives. The launch reflects increasing demand for shared missions that serve both defense and civilian applications, reinforcing the strategic importance of small satellite technology in modern space operations.

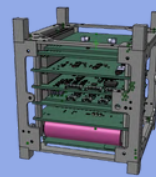


India and Japan Collaborate on Chandrayaan-5 Mission

India's Chandrayaan-5 mission, approved by the government, marks a significant leap in lunar exploration. In collaboration with Japan, the mission will feature a 250 kg rover, ten times heavier than its predecessor, Pragyan. This advanced rover aims to enhance scientific research on the Moon's surface. Building on the success of Chandrayaan-3, which achieved a historic soft landing on the Moon's South Pole, this partnership underscores India's growing prominence in space exploration and its commitment to international collaboration for scientific advancement.

Sustainable space, Addressing the challenges of space debris and responsible satellite operations

CubeTech



Showcase innovative CubeSat missions and unique payloads

Did you Know
An Australian-built nanosatellite, **Buccaneer Main Mission**, was recently launched to study radio-frequency propagation, advancing space-based defense research

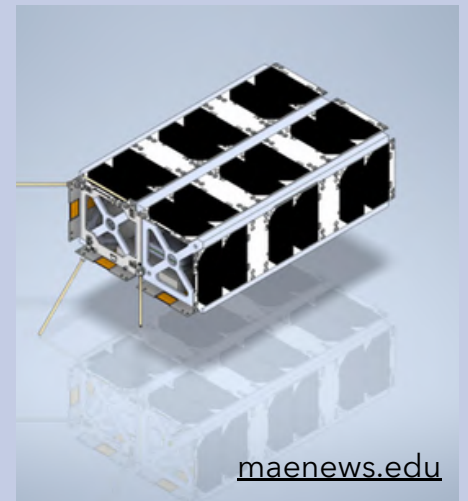
Smarter Calibration Boosts CubeSat Performance

Researchers at the University of Albany have developed a new algorithm, ACCURACy, to improve CubeSat constellation calibration. CubeSats, known for their affordability and versatility, often struggle to align effectively within larger satellite networks. ACCURACy solves this by using thermistors to track temperature variations and optimize satellite pairing for accurate calibration. This innovation could significantly enhance CubeSat performance in Earth observation and space research. Future tests will use MIT's TROPICS data for refinement.



Missouri S&T Secures Grant for CubeSat Mission

Missouri S&T's Satellite Research Team received a \$275,000 grant from the University Nanosatellite Program to develop an innovative cubesat mission. Partnering with NASA's Goddard Space Flight Center, the team is designing a system to track emergency beacons using Doppler shift technology, enhancing search and rescue efforts. This funding allows Missouri S&T to join a select group of universities working on cutting-edge satellite technology, reinforcing its role in aerospace research and education.



Israeli Students Build and Launch Largest Constellation

Israeli high school students have launched Tevel 2, the largest satellite constellation built by students, into space. Comprising nine nanosatellites, the project was led by the Israel Space Agency and Tel Aviv University, with participation from diverse communities, including Jewish, Arab, and Druze municipalities. The satellites, deployed into low Earth orbit, will measure cosmic radiation and its effects on electronics. This initiative promotes STEM education, fosters societal integration, and inspires the next generation of Israeli space scientists and engineers.





Assabet Students Contribute to NASA CubeSat Program

Assabet Valley Regional Technical High School students, part of NASA's HUNCH program, are crafting hardware for CubeSat deployment from the ISS. Certified in quality control, they gain hands-on experience in advanced manufacturing, enhancing their skills and resumes. To commemorate their involvement, students signed a locker destined for the ISS. This initiative, fostering STEM education, provides real-world opportunities and inspires future aerospace innovators. Assabet's NASA partnership highlights and fosters in shaping future engineers.



South Korean City Successfully Launches Small Satellite

Jinju, South Korea, has successfully launched its small satellite, JINJUSat-1B, from Vandenberg Space Force Base in California. The satellite, equipped with three cameras, will conduct Earth imaging for three months. This marks Jinju as the first local government in South Korea to develop and launch a satellite. The project involved graduate students from Gyeongsang National University, boosting local space industry expertise. Plans for a larger JINJUSat-2 are underway, set for a 2027 launch.



Slovenian Minisatellites Launched for Observation

A constellation of minisatellites with a Slovenian footprint has been launched into space, marking a significant milestone in Earth observation technology. Developed by Slovenian researchers and engineers, these satellites aim to enhance environmental monitoring, disaster management, and agricultural planning. Equipped with advanced sensors, they provide high-resolution data for global applications. This achievement underscores Slovenia's growing role in space technology and its commitment to addressing global challenges through innovative satellite solutions.

**CubeTech:
Innovation in miniature**



The 75SSM

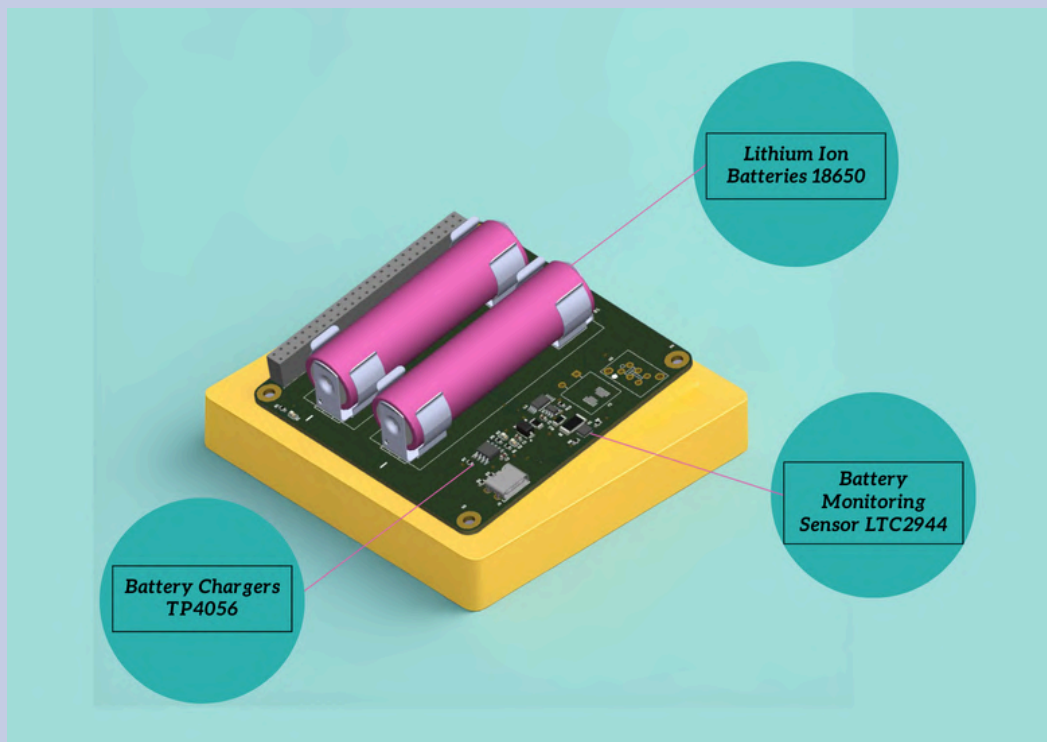
SSM: Students' Satellites Mission

Update readers on our ITCA internal space-based innovations

Did you Know
CRSat's OBC is a multi-processor hub with redundancy, ESD protection, emergency power cutoff, and LoRa-based communication, it ensures resilient space operations.

CRSat Battery Board: Reliable Power Storage and Management

CRSat gives students hands-on experience with satellite tech, mirroring CubeSats. It integrates solar power, sensors, and real-time data collection, bridging theory and practice to build skills in power management, data analysis, and communication for real-world space challenges. CRSat's battery board is designed for reliable power storage and management, featuring a dual-cell lithium-ion configuration tailored for space applications. The system employs two 3.7V lithium-ion cells connected in parallel, doubling the capacity to 6400mAh while ensuring redundancy for mission-critical operations. A comprehensive protection system safeguards against voltage extremes (4.2V overcharge, 2.8V over-discharge), short circuits, and excessive current draw. Thermal management is achieved through multi-point monitoring within a controlled 0°C to 45°C range, enabling rapid response to anomalies. Charging follows a Constant Current/Constant Voltage (CC/CV) profile with temperature compensation for optimal efficiency. Real-time status monitoring provides continuous updates on voltage, current, temperature, and charge levels, ensuring stable energy distribution. This robust design guarantees consistent power availability, protecting against failures that could impact satellite performance.



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[Read more at: businessstandard.com](https://www.businessstandard.com)



ISRO SpaDex Undocks Successfully, Paving Way for Chandrayaan-4

[Read more at: hindustantimes.com](https://www.hindustantimes.com)

India Earned \$143 Million from Foreign Satellite Launches Since 2015

[Read more at: currentaffairs.com](https://www.currentaffairs.com)



Indian Space Economy to Hit \$44 Billion by 2033: FICCI-EY

[Read more at: economictimes.com](https://www.economictimes.com)

ISRO and SCL Launch Indigenous 32-Bit Microprocessors for Space

[Read more at: thedefensenews.com](https://www.thedefensenews.com)



Small Satellite Vehicle to Be Commercially Ready in Two Years

[Read more at: livemint.com](https://www.livemint.com)

Elon Musk's Starlink Launches in India: Complete Satellite Internet Guide

[Read more at: times.com](https://www.times.com)



Parliament Inquiry: ISRO's Global Space Agency Collaborations

[Read more at: pib.gov.in](https://www.pib.gov.in)

Innovating India's tech for 22 years, we pioneered the '75 Students' Satellites Mission' and made a global impact in space tech, precision agriculture, and Industry 4.0.

Events

PocketQube Conference

25-27 March 2025
 Glasgow University, UK
pocketqubeworkshop.com

Newspace Africa Conference

21-24 April 2025
 Egyptian Space City, Egypt
newspaceafrica.com

Analog Astronaut Conference

1-4 May 2025
 Biosphere 2, Arizona USA
analogastronaut.com

Launches

Galactic Energy | Ceres 1 | Unknown Payload

21 Mar 2025 16:40 IST
 Site 95A, Jiuquan Satellite Launch Center, China

SpaceX | Falcon 9 Block 5 | Starlink Group 11-7

25 Mar 2025 03:30 IST
 SLC-4E, Vandenberg SFB, California, USA

Rocket Lab | Curie | Finding Hot Wildfires Near You

27 Mar 2025 21:00 IST
 Māhia Peninsula, New Zealand

Upcoming.....



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