

NOV 2024

SPACE NEWSLETTER

Global Insights: November News Across Regions

Featuring **AI** Selected News

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From Vision to Orbit: The Successful Launch of OL-1

The successful launch of Oman's first satellite, OL-1, marks a milestone in China-Oman cooperation and showcases STAR.VISION's role in advancing international space technology partnerships.

On November 11, 2024, at 12:03 PM, the Intelligent Computing Satellite of the Sultanate of Oman (hereafter referred to as "OL-1") was successfully launched from Jiuquan Satellite Launch Center, entering its designated orbit and is now close to becoming fully operational.

Among the notable figures present at the launch event were Oman's Ambassador to China, Nasser Mohammed Albusaidi; former Chinese Ambassador to Oman, Li Lingbing; and former Secretary-General of the International Telecommunication Union, Zhao Houlin.

This event signifies a major achievement for China-Oman collaboration and a milestone for STAR.VISION, a leading Chinese

private aerospace company, as it extends its advanced space technology and services internationally.

OL-1 is pivotal to STAR.VISION's comprehensive satellite industry solution provided to Oman. Equipped with high-resolution imaging and intelligent analysis capabilities, OL-1 is poised to support Oman in remote sensing data acquisition, environmental monitoring, and additional applications.

In addition to the satellite, STAR.VISION has delivered a full suite of localized capabilities, including ground station construction, telemetry and control systems, data processing, and professional technical training, assisting in Oman's independent space capabilities.

The project's successful delivery demonstrates the ability of Chinese private aerospace companies to bring high-tech products and services to the global market under export compliance standards, furthering the international expansion of China's private commercial space sector.



The first VR Imagery taken by OL-1

China Launches Pair of SuperView Neo-2 Radar Satellites

China launched a pair of radar satellites late Sunday for a state-owned firm building a 28-satellite remote sensing constellation.

A Long March 2C rocket lifted off at 6:39 p.m. Eastern, Nov. 24 (2339 UTC) from Jiuquan Satellite Launch Center. Insulation tiles fell from the rocket's upper stage as it climbed into the night sky above the spaceport.

The Shanghai Academy of Spaceflight Technology (SAST) announced launch success within an hour of liftoff, revealing the payloads to be the SuperView Neo-2 03 and 04 (Siwei Gaojing-2 (03, 04)) satellites for China Siwei Surveying and Mapping Technology Co., Ltd. Both SAST and China Siwei operate under the China Aerospace Science and Technology Corporation (CASC), the country's state-owned main space contractor.

The spacecraft are described as high-resolution synthetic aperture radar (SAR) satellites equipped with phased-array radar payloads and providing a resolution of 0.50 meters. They will provide data for high-precision Digital Elevation Models (DEM) and radar orthoimages. The satellites use third-generation Gallium Nitride transmit-receive module components, according to SAST, increasing payload efficiency by enhancing power output and reducing energy loss.

SuperView Neo-2 03 and 04 will fly in formation and will be mainly used to obtain data for the management of natural resources, city security, emergency response and maritime operations.

The pair are part of China Siwei's planned 28-satellite SuperView Neo remote sensing constellation. This will consist of 16 high resolution (0.2 to 0.3-meter resolution) optical, four wide-width (0.7m resolution with 100-kilometer swath width) optical, and eight SAR (0.5m resolution) satellites.

The first pairs of SuperView-1 satellites were launched in 2016 and 2018 respectively, completing the four-satellite SuperView constellation. Separate pairs of SuperView Neo-1 and SuperView Neo-2 satellites were launched in 2022, while SuperView Neo-3 (01) launched in April this year. All SuperView satellites have been sent into sun-synchronous orbits.

The launch was China's 57th orbital launch attempt of 2024. CASC stated early this year that the country was targeting around 100 launches in 2024. Both CASC and commercial actors appear to have fallen short of targets of around 70 and 30 launches respectively. China is however expanding its spaceport options and developing reusable launchers, with both efforts to allow China to increase its launch rate.

The previous launch saw the Tianzhou-8 cargo spacecraft sent to the Tiangong space station via a Long March 7 rocket, launched from Wenchang. Upcoming launches include an expected first flight of Landspace's methane-fueled Zhuque-2 with an improved second stage engine Nov. 27 and the first flight of the Long March 12 from Wenchang Nov. 30.



Liftoff of the Long March 2C from Jiuquan, carrying the SuperView Neo-2 (03, 04) satellites into orbit, Nov. 24, 2024. Credit: Ourspace

Empowering Climate Research with Spaceborne AI and Space Computing

At COP29, spaceborne AI and space computing were presented by Azercosmos and STAR.VISION as tools for studying climate change impacts on the Caspian Sea.

At the 29th United Nations Climate Change Conference (COP29) in Baku, Azerbaijan, STAR.VISION, in collaboration with the Azerbaijan Space Agency (Azercosmos), delivered a presentation titled “Climate Change Impact on the Caspian Sea Using Space AI.” This marks the first time a Chinese company has showcased spaceborne AI and space computing achievements at an international climate conference.

Focus on the Caspian Sea: Climate Change and Coastal Impacts

The presentation highlighted the effects of climate change on the Caspian Sea’s coastline and water quality. Leveraging its innovative

spaceborne AI computing unit, STAR.VISION performed high-precision analyses of the Caspian Sea region and Azerbaijan's coastal areas using remote sensing imagery and deep learning algorithms. Over the past few decades, the Caspian Sea has experienced a continuous drop in water levels, leading to coastal retreat and an increase in exposed land. Key water quality indicators, such as chlorophyll concentration and the trophic state index, have also undergone notable changes.

The research was supported by the Remote Sensing Team of Ningbo University, which contributed to the processing of remote sensing imagery for the Caspian Sea region.

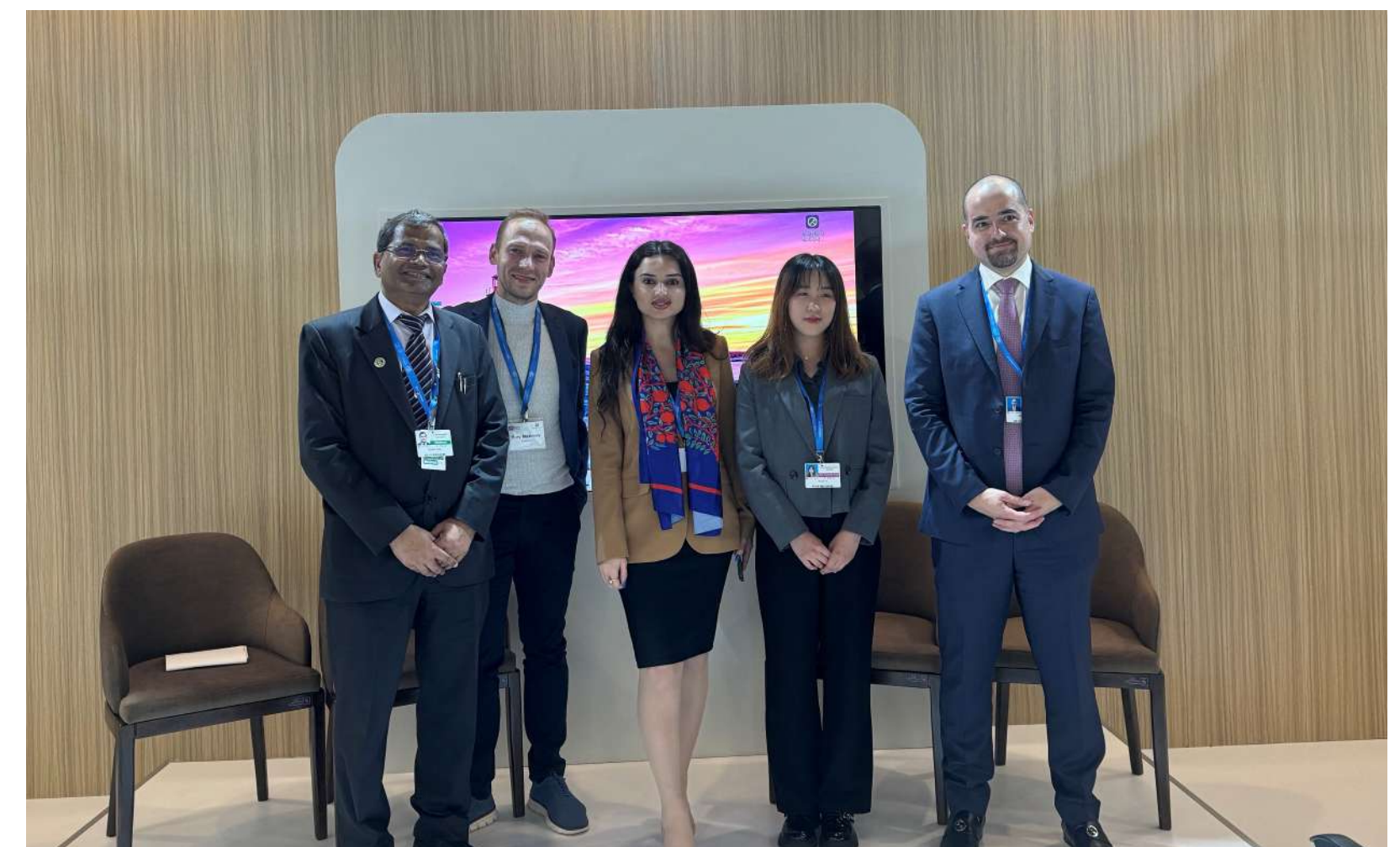
Spaceborne AI and Real-Time Computing

The study further revealed significant ecological impacts caused by climate change on the Caspian Sea region. For example, between 2014 and 2024, the coastline of Azerbaijan's Gizil-Agach State Nature Reserve retreated by 218 square kilometers, profoundly altering wetland ecosystems and threatening migratory bird habitats and coastal biodiversity. Additionally, the variation of water quality eutrophication in recent years has been closely linked to human activity and changing climate conditions.

Rideshare Program and Global Collaboration

The presentation concluded with an invitation to join STAR.VISION’s “Spaceborne AI Algorithm Rideshare Program 2.0,” aimed at fostering global collaboration in space and environmental research. This initiative seeks to create a shared platform that combines remote sensing data and AI capabilities to address pressing environmental issues and promote sustainable development. By integrating advanced spaceborne

technologies and international partnerships, efforts like these demonstrate the potential of space-based solutions to contribute meaningfully to global climate research and mitigation strategies. STAR.VISION’s participation underscores the role of innovation in advancing understanding of climate change and fostering a collaborative approach to solving environmental challenges.



Source: Azercosmos

South Africa Launches NEOFrontiers Fund to Drive Innovation in Earth Observation

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The South African National Space Agency (SANSA) and DSTI have launched the NEOFrontiers Fund to support small businesses in Earth Observation, focusing on sectors like mining, agriculture, and health.



Source: Humbulani Mudau

The South African National Space Agency (SANSA), in partnership with the Department of Science, Technology, and Innovation (DSTI) and supported by the National Research Foundation (NRF) and TuksNovation, has unveiled the New Earth Observation Frontiers Small, Medium, and Micro Enterprises Innovation Support Fund Programme, known as the NEOFrontiers Fund.

This initiative transforms space-based ideas into tangible products and services that address pressing societal challenges. Recognising the challenges Earth Observation startups face in attracting investment or risk capital, the DSTI is committed to reshaping the industry narrative. Furthermore, rather than viewing the space sector as a consumer of public funds, this programme invests in

solutions that can boost South Africa's economic recovery.

The NEOFrontiers Fund also celebrated eight standout proposals focused on modernising sectors like mining and agriculture, infrastructure development, disaster risk reduction, health innovation, and banking. Additionally, these projects are set to generate demand for new solutions, with space technologies positioned as powerful enablers and value providers. Highlighting inclusivity, the eight funded companies boast a 50:50 gender balance, reflecting a commitment to equal representation in the sector.

This initiative is set new benchmarks for innovation in South Africa's space and Earth Observation sectors.

Telebras Partners with SpaceSail, Boosting Satellite Internet Competition with Starlink

SpaceSail, a Chinese satellite company, has inked a deal to enter Brazil's internet market. This move marks a significant challenge to Elon Musk's Starlink, which currently holds a strong position in the country's satellite internet sector.



Source: SpaceSail

SpaceSail, a Chinese satellite company, has inked a deal to enter Brazil's internet market. This move marks a significant challenge to Elon Musk's Starlink, which currently holds a strong position in the country's satellite internet sector.

The Shanghai-based firm signed a Memorandum of Understanding with Telebras, Brazil's state-owned telecom company. This agreement aims to bring satellite communications and broadband internet services to the Latin American nation.

The timing aligns with Chinese President Xi Jinping's state visit to Brazil. SpaceSail plans to launch operations in Brazil by 2026. The company has already deployed 36 satellites and aims to have over 600 in orbit by late 2025.

This ambitious plan reflects China's growing influence in global technology markets. Currently, Starlink dominates Brazil's satellite internet market with a 46% share.

However, this represents only

0.5% of the country's total broadband market. SpaceSail's entry could significantly alter this landscape, offering more choices to Brazilian consumers.

Brazilian Communications Minister Juscelino Filho welcomed the move. He emphasized the government's openness to companies offering quality services at fair prices.

This stance promotes competition and innovation in the telecommunications sector.

The agreement between SpaceSail and Telebras goes beyond mere business. It represents a broader trend of increasing Chinese investments in Brazil.

SpaceSail's entry into Brazil highlights the country's growing importance in the global tech landscape. It also underscores the increasing competition in satellite internet services.

This competition could lead to improved services and lower prices for Brazilian consumers. The deal reflects Brazil's strategy to diversify its

technological partnerships.

By welcoming both American and Chinese companies, Brazil maintains a balanced approach. This strategy could benefit the country's technological development and economic growth.

As the satellite internet market evolves, it will be interesting to see how different players compete. The entry of SpaceSail could spur further innovation and investment in Brazil's tech sector. It may also encourage other global players to enter the market.

STAR.VISION New Products World Debut

STAR.VISION unveiled “Light String” and world’s top intelligent CubeSat in South Africa.

From November 25 to 27, 2024, the 13th Nano-Satellite Symposium, hosted by UNISEC, was successfully held in South Africa. During this event, STAR.VISION unveiled its latest products—the "Light String" AI computing unit and the world's most powerful intelligent CubeSat. These innovations showcased STAR.VISION achievements in satellite technology and the integration of artificial intelligence.

The event attracted participation from professors and aerospace researchers from South Africa, Egypt, Turkey, Japan, and several European countries. Attendees engaged in lively discussions with STAR.VISION African team on space computing technologies and held in-depth conversations about future AI collaboration in space.

The CEO of the South African National Space Agency also attended the event and had discussions with STAR.VISION management team regarding potential collaborations.



▲ STAR.VISION New Product Launch Poster



▲ Titus, Director of African Market of STAR.VISION, delivering a product launch and space computing presentation



▲ STAR.VISION African team interacting with aerospace professionals from various countries

The Upcoming Space Events

For December



December 4

Extreme Weather: Revolutionizing Weather Preparedness with Space Technology

Online

Join SpaceNews December 4 at 1:00 PM EST for a webinar featuring leading experts across government, academia, and the commercial sectors to explore how space technology is transforming the way we predict and address severe weather challenges.



December 6

7th SpaceNews Icon Awards

Washington, DC, United States

The 7th SpaceNews Icon Awards (2024) will honor excellence and innovation among space professionals, companies, and organizations during the previous 12 months.



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