

The eoPortal Newsletter

August 2025

Sentinel-4 Launched!

The Copernicus Sentinel-4 mission was successfully launched on 1 July 2025 aboard SpaceX's Falcon 9 rocket, onboard EUMETSAT's Meteosat Third Generation Sounder (MTG-S1) satellite. The rocket lifted off from Launch Complex 39A (LC-39A) at the Kennedy Space Center in Florida, USA, at 21:04 UTC, and headed for geostationary orbit over Europe and Africa.

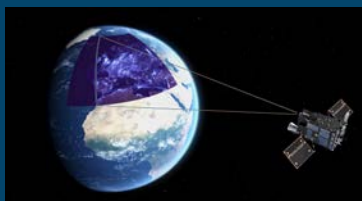
Sentinel-4 carries a high-resolution Ultraviolet, Visible, and Near-Infrared (UVN) spectrometer designed to measure key atmospheric trace gases and aerosols. Due to the spacecraft's geostationary orbit, the instrument is able to provide measurements every hour, enabling real-time detection and monitoring of pollutants such as nitrogen dioxide, ozone, sulfur dioxide, and formaldehyde.



Image credit: EUMETSAT

Data delivered by Sentinel-4 will improve air quality forecasting, provide essential information for environmental policy, and enhance understanding of atmospheric composition and dynamics. The mission's geostationary vantage point allows observation of rapid changes in atmospheric chemistry, complementing data from polar-orbiting missions. Sentinel-4 will also contribute to climate monitoring by tracking long-term trends in air pollution and aerosol levels.

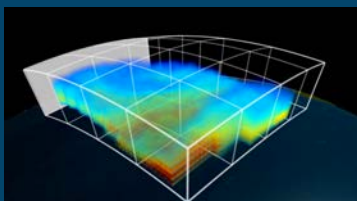
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Meteosat Third Generation (MTG)

MTG-S satellites carry the Sentinel-4 UVN spectrometer alongside sounding instruments, while the MTG-I satellites carry imaging and lightning detection instruments. Together they provide frequent data to support weather forecasting and environmental monitoring.

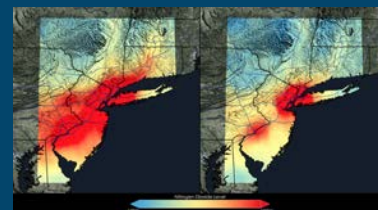
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Atmospheric Sounders

Geostationary sounders use ultraviolet, visible, and infrared instruments to measure trace gases, aerosols, and temperature profiles in the atmosphere, supporting air quality forecasting and environmental monitoring from meteorological satellites.

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Aura

NASA's Aura carries the Ozone Monitoring Instrument and infrared sounders to measure key atmospheric trace gases and aerosols, providing data on air quality, ozone distribution and pollution, to support environmental monitoring and forecasting.

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Launch Highlights

ISRO's **RISAT 1B (EOS 09)** satellite was launched on May 18, 2025, at 00:29 UTC on a PSLV-C61 rocket from the Satish Dhawan Space Centre (SDSC), Sriharikota, India. The mission failed to reach its intended orbit due to a malfunction in the rocket's first stage, attributed to a drop in chamber pressure in the motor case.

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Image credit: CASC

Zhangheng 1-02, (CSES 1-02) was launched on June 14, 2025 at 07:56 UTC aboard a Long March 2D rocket from the Jiuquan Satellite Launch Center in China. It is the successor to the Zhangheng 1 (CSES 1) mission, focused on studying electromagnetic phenomena in near-Earth space linked to seismic activity.

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Image credit: ISRO

Transporter 14, a SpaceX's Falcon 9 rideshare missions, launched on June 23, 2025, at 21:25 UTC, from Space Launch Complex 4E, at the Vandenberg Space Force Base in California, carrying a number of payloads, including:

- [GHGSat Constellation](#) - two satellites
- [ICEYE](#) - six satellites
- [BRO](#)
- [Spire Global](#) - two satellites
- [EarthDaily](#)



Image credit: SpaceX



Image credit: ESA

MTG-S1 (Meteosat 13), the first European sounding satellite in geostationary orbit, was successfully launched at 21:04 UTC on 1 July 2025 carrying the **Sentinel-4 payload**. The satellite launched on SpaceX's Falcon 9 rocket from Launch Complex 39A (LC-39A) at the Kennedy Space Center in Florida.

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On July 26, 2025, Arianespace launched two French satellites, [CO3D](#) (four satellites) and [MicroCarb](#), on a Vega C rocket from Kourou, French Guiana, at 02:03 UTC. CO3D aims to produce 3D digital elevation models (DEMs), while MicroCarb will measure carbon dioxide concentrations in the atmosphere.



Image credit: Arianespace



Image credit: The New Indian Express

The **NASA-ISRO Synthetic Aperture Radar (NISAR)** launched from the Satish Dhawan Space Centre in India aboard a GSLV-F16 on July 30, 2025 at 12:40 UTC. The satellite is a dual-waveband mission, carrying SAR sensors operating in the L-band and S-band spectral ranges.

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Recent Highlights



YunYao Constellation

EO Mission - Meteorology

YunYao is a Chinese commercial satellite constellation to collect atmospheric data for meteorology and weather forecasting, using GNSS-based radio occultation and reflectometry techniques in Low Earth Orbit.

[Read more](#)


OneWeb

Non-EO Mission - Communications

OneWeb is a 648-satellite commercial constellation operated by the Eutelsat Group, designed to provide global low-latency broadband internet coverage to regions with limited connectivity infrastructure.

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Intuitive Machines

Non-EO Mission - Lunar Exploration

The Intuitive Machines satellite constellation is a commercial lunar communications and navigation network developed by Intuitive Machines (IM) to support lunar surface missions, exploration, and science operations.

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Space Weather Next

Non-EO Mission - Space Weather Monitoring

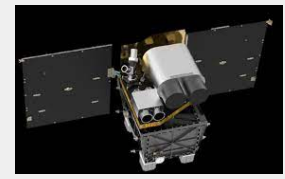
Space Weather Next is a U.S. space weather monitoring satellite developed by NOAA to provide real-time data on solar activity, supporting forecasts and protection of critical technological infrastructure.

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OroraTech Wildfire

EO Mission - Wildfire Detection

The OroraTech Wildfire satellite constellation is a commercial system developed by OroraTech to detect and monitor wildfires globally using thermal infrared sensors for early warning and risk management.

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GARAI

EO Mission - Greenhouse Gas Monitoring

GARAI is a commercial Earth observation satellite developed by OHB Sweden and SATLANTIS to support greenhouse gas detection, precision agriculture, infrastructure monitoring, and border surveillance.

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Project Kuiper

Non-EO Mission - Internet Coverage

Project Kuiper is a commercial broadband satellite constellation developed by Amazon (Kuiper Systems LLC), designed to deliver low-latency internet connectivity, especially to remote and underserved communities.

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NarSha Constellation

EO Mission - Methane Emission Monitoring

NarSha is a Korean commercial satellite constellation developed by Nara Space to monitor methane emissions using hyperspectral imagers in different infrared bands, supporting environmental monitoring.

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Meteor-M2

EO Mission - Meteorology

The Meteor-M2 satellite is a Russian polar-orbit meteorological satellite system developed by VNIIEM/Roscosmos to monitor atmospheric conditions, sea and ice cover, ozone levels, and climate parameters.

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Satellites Captured the Eruption of Mt Etna

Satellite-based monitoring plays a vital role in observing volcanic activity, providing early warning data, eruption tracking, and insights into long-term geological changes. Mt Etna, Europe's highest active volcano located in Sicily, Italy, erupted on June 2, 2025 in its largest event since 2014. The Italian National Institute of Geophysics and Volcanology (INGV) attributed the eruption to a collapse from the northern flank of the south-east crater.

Copernicus Sentinel-2C captured dramatic images shortly after the eruption began, showing a dense ash and smoke plume rising 6,500 metres into the atmosphere. Thermal data from Copernicus Sentinel-3B highlighted intense heat emissions from the crater. These observations have helped assess volcanic hazards in near-real time, support aviation warnings, and guide risk management for nearby communities. Monitoring continues to track surface deformation and ash dispersion - critical for ongoing research and public safety.

[Read more](#)

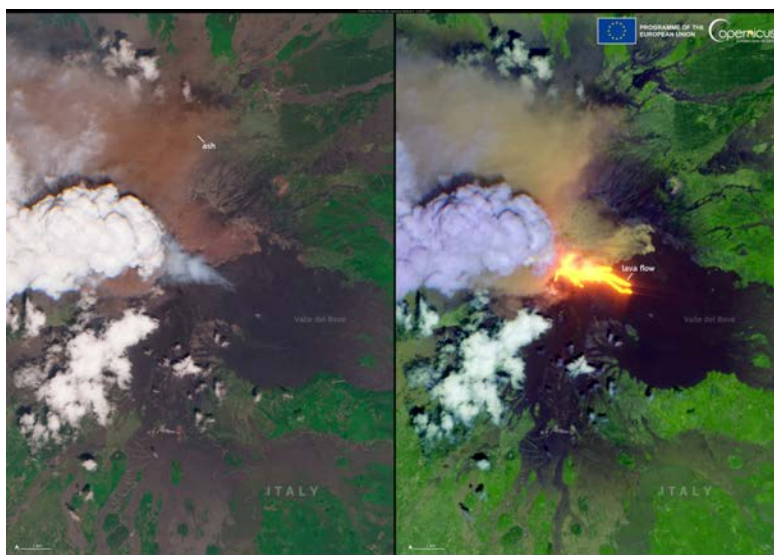
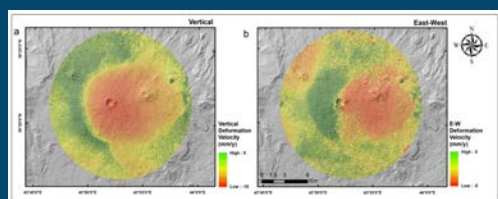


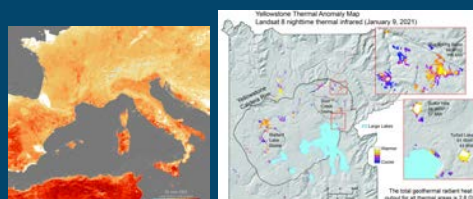
Image credit: European Union, Copernicus Sentinel-2C imagery



Volcanoes and InSAR

Interferometric SAR (InSAR) imagery is used to monitor volcanoes by detecting ground deformation linked to magma movement, aiding in eruption forecasting and risk assessment.

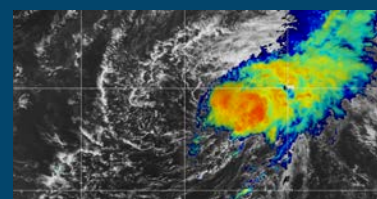
[Read more](#)



Thermal Imaging

Thermal infrared satellite imagery detects surface temperature changes, helping monitor wildfires, volcanic activity, and urban heat, supporting environmental management and disaster response.

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Tropical Storms and Ocean Winds

Satellites monitor tropical storms and ocean winds using multi-spectral sensors, providing data on sea surface temperature, wind patterns, and storm development to improve forecasting and early warnings.

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