CEOS MIM Database Quarterly Report
July 2023

@EOHandbook

The Earth Observation Handbook, prepared by the European Space Agency (ESA) in support of the Committee on Earth Observation Satellites (CEOS), presents the main capabilities of satellite Earth observations, their applications, and a comprehensive overview of present and planned civil space agency Earth observation satellite missions and their instruments. The database which serves as the foundation for the missions, instruments, and measurements information at the heart of the Handbook content is updated annually and is always available online at:

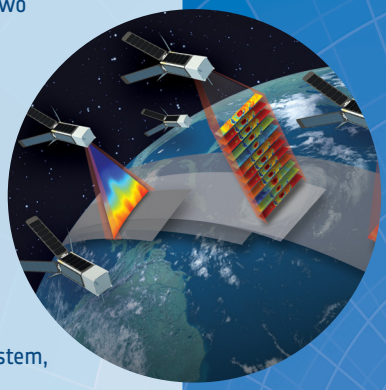
https://database.eohandbook.com

This page provides a summary of key mission activities from the past quarter (April to June, 2023), and the coming two quarters (July to December, 2023).

Latest News

NASA's **TEMPO** (Tropospheric Emissions: Monitoring of Pollution) instrument launched on April 7, as a payload onboard Intelsat 40E, a commercial communications satellite in geostationary orbit. TEMPO is the first space-based instrument to provide hourly measurements of air quality over North America during the daytime and at spatial scales of several square miles.

On April 15, Norway's NORSAT Technology Demonstration (**NORSAT-TD**) launched onboard SpaceX's Transporter 7 mission. A collaboration between NOSA, NSO, ASI and CNES, NORSAT-TD carries multiple advanced or experimental payloads, including an iodine propulsion system, a satellite tracking and navigation payload, a laser data downlink system, and an AIS receiver.



TROPICS Constellation (Credit: NASA/MIT)

Fengyun-3G (FY-3G), also known as FY-3 Rainfall Mission 1 (**FY-3RM-1**), launched on a Long March 4B rocket from the Jiuquan Satellite Launch Center, China, on April 16. The NSMC-CMA mission is a dedicated Low Earth Orbit precipitation measurement satellite, carrying a GNSS Radio Occultation Sounder (GNOS), an Improved Medium Resolution Spectral Imager - Simplified (MERSI-S), a Microwave Radiation Imager (MWRI) and a Precipitation Radar (PR).

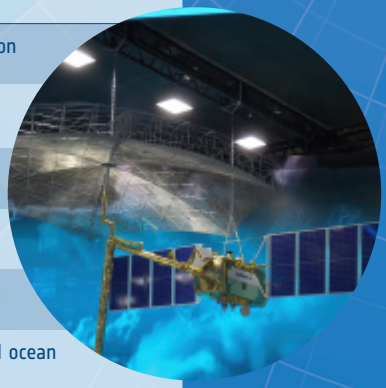
All four remaining **TROPICS** (Time-Resolved Observations of Precipitation structure and storm Intensity with a Constellation of Smallsats) cubesats launched in May, with the first pair on May 8, and the final pair on May 26. The constellation was launched by Rocket Lab, and ahead of the 2023 hurricane season. The constellation will use passive microwave radiometers to improve the understanding and prediction of the impact of environmental temperature and humidity, precipitation evolution, and warm-core strength on the evolution of tropical cyclone structure, size, and intensity.

FY-3G (Credit: China Media Group)

Also on May 26, a Soyuz 2.1a rocket launched the ROSKOSMOS satellite **Kondor-FKA N-1** from Vostochny Cosmodrome in Russia. The satellite hosts an S-band Synthetic Aperture Radar (SAR) instrument, which can image at resolutions up to 1 m, and swaths as wide as 500 km across various modes. Kondor-FKA is the civilian counterpart to the commercial Kondor-E and military Kondor satellites.

Upcoming Launches

Mission	Agencies	Launch	Purpose
PREFIRE	NASA	August 2023	Will document, for the first time, variability in spectral fluxes from 5-45μm on hourly to seasonal timescales.
Resurs-P N4	ROSKOSMOS	August 2023	Carries medium and high resolution multispectral imagers, as well as a hyperspectral imager.
KOMPSAT-7	KARI / KAI	August 2023	Follow-up model of KOMPSAT-3A to provide high-resolution satellite images to satisfy South Korea's governmental and institutional needs.
THEOS-2 & -2A	GISTDA	Sept. 2023	A two-satellite constellation carrying high resolution imagers. THEOS-2A will also have the ability for video capture.
INSAT-3DS	ISRO	Sept. 2023	Planned as a spare for India's geostationary meteorological satellite series, carrying both imaging and sounding instruments.
RISAT-1B	ISRO	Sept. 2023	C-Band SAR mission, for radar backscatter measurements of land, water and ocean surfaces for various applications.



Kondor-FKA N-1 Model (Credit: Kirill Borisenko)