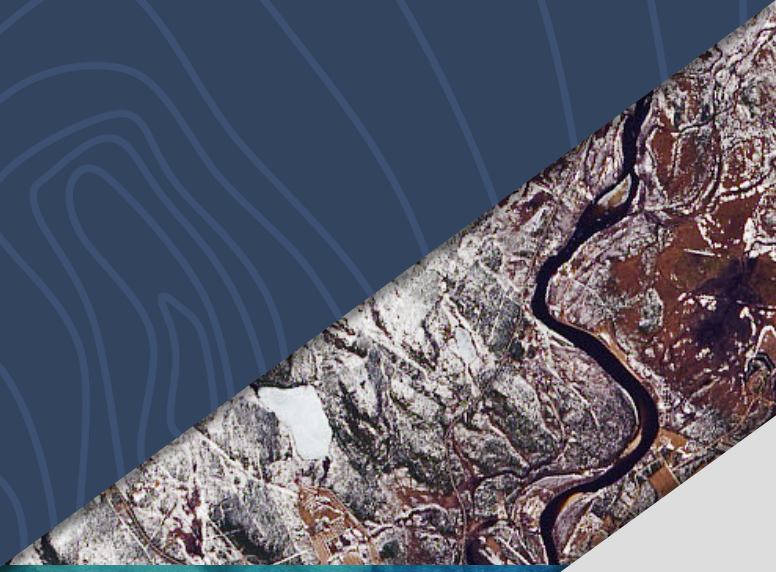
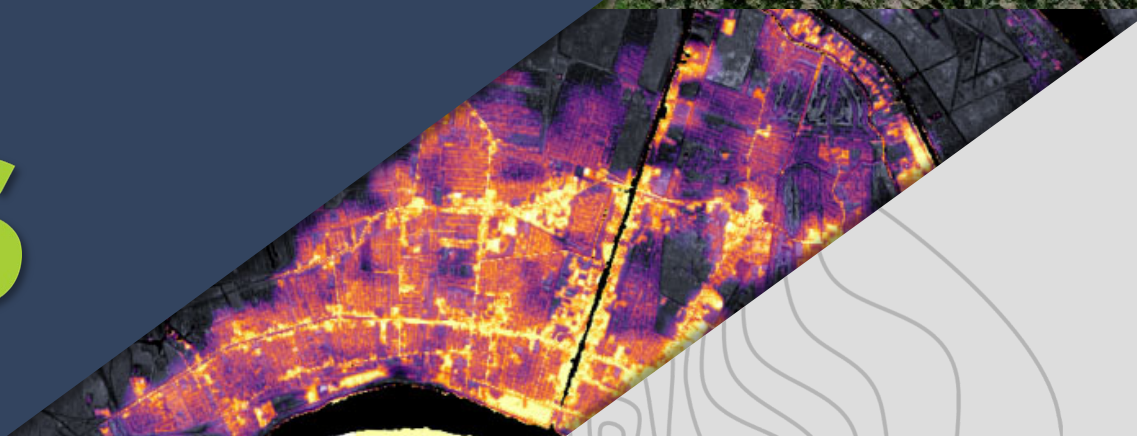
Recent CEOS Mission Launches





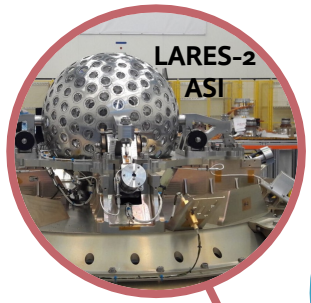
CEOS

Committee on
Earth Observation Satellites

Recent CEOS Mission Launches

31 Jan

01 Mar



13 Jul

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Jan 2022 | Apr 2022 | Jul 2022 | Oct 2022 | Jan 2023 | Apr 2023 | Jul 2023

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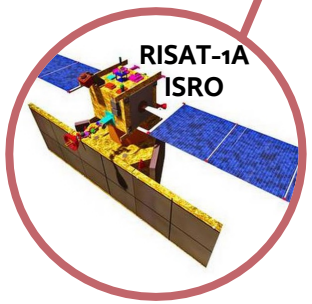

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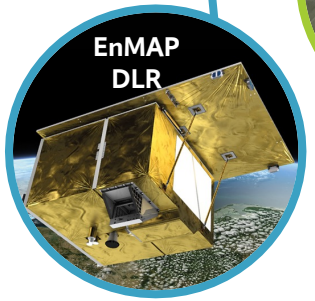

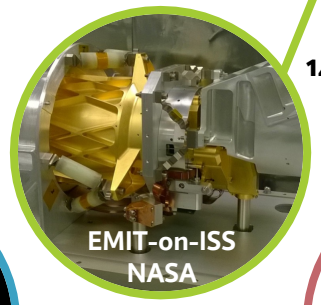

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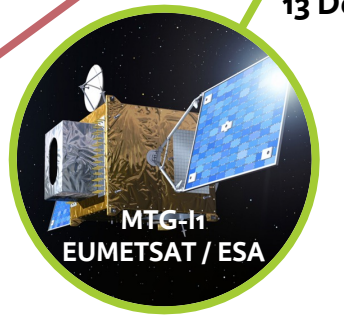

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CSG-2

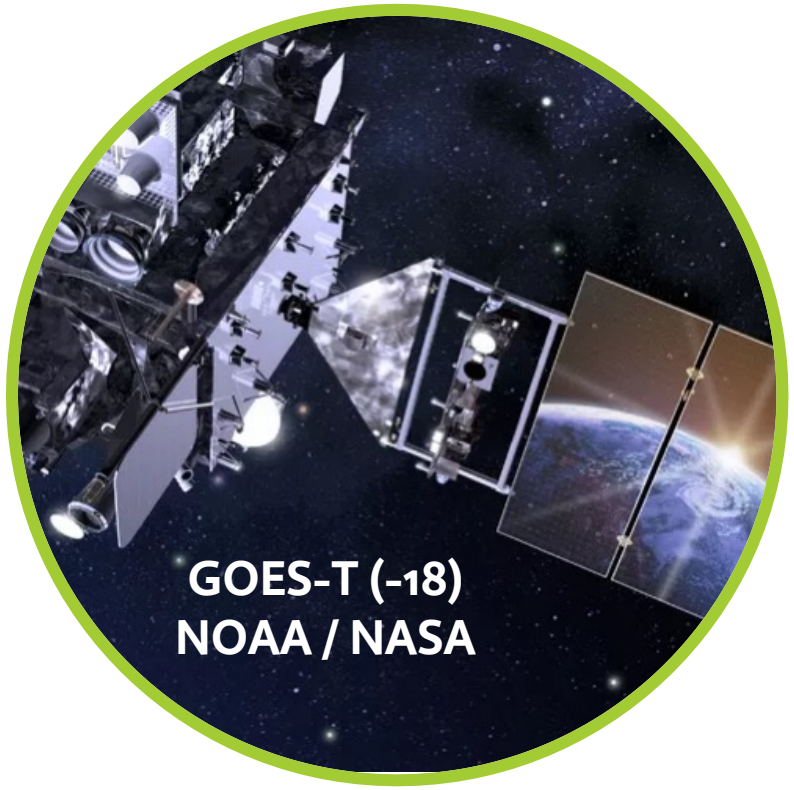
- Launched 31st January, 2022
- Second of Italy's COSMO-SkyMed Second Generation series of radar satellites, which together will be able to observe the same points on Earth twice a day
- Follows the original 4-satellite COSMO-SkyMed constellation, launched 2007-2010.
- Applications in **environmental monitoring, surveillance and risk management, environmental resources management, maritime management, and topographic mapping**

RISAT-1A

- Launched 14th February, 2022
- Also known as EOS-4 (Earth Observing Satellite-4)
- Carries a C-Band SAR instrument, and designed to provide high-quality images under all-weather conditions
- Applications include **agriculture, forestry, soil moisture, hydrology, and flood mapping**

RISAT-1A
ISRO

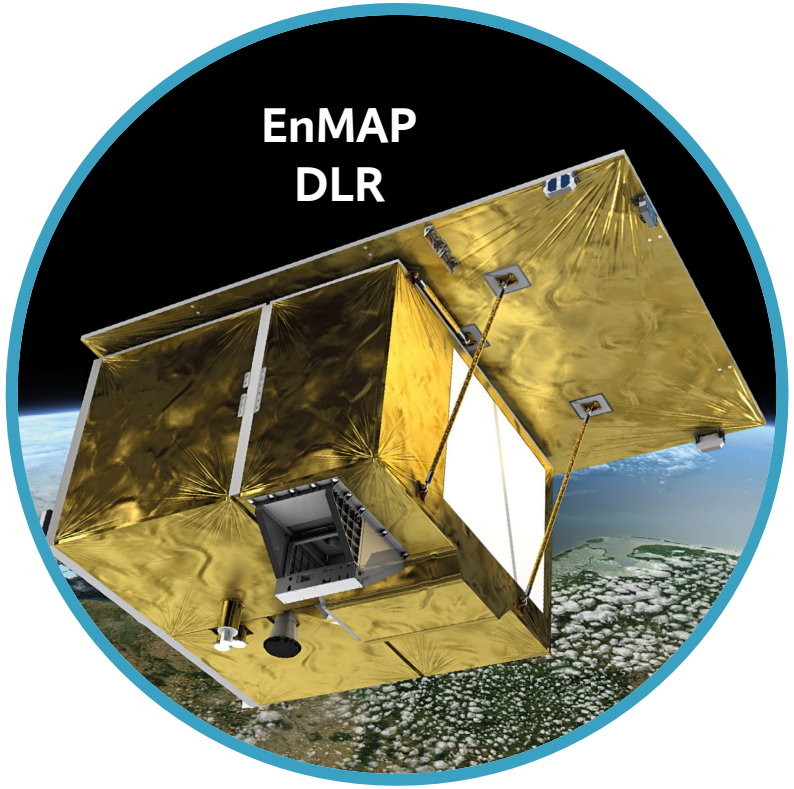
GOES-T



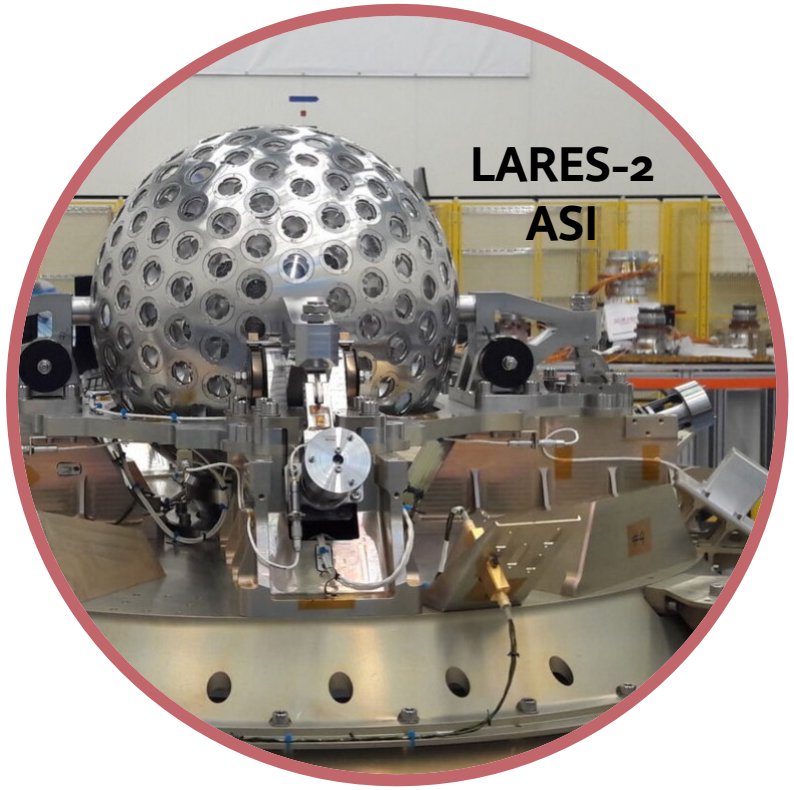
- Launched 1st March, 2022
- GOES = Geostationary Operational Environmental Satellites
- GOES-T was renamed GOES-18 following launch, and is the third in a series of four advanced geostationary weather satellites, known as the GOES-R Series
- The GOES-R Series provides **advanced imagery and atmospheric measurements, real-time mapping of lightning activity, and monitoring of space weather.**

EnMAP

- Launched 1st April, 2022
- EnMAP is the first ever German optical Earth observing satellite, and carries a hyperspectral imager, with 230 spectral channels in the solar-reflectance range
- Mission objectives include to **measure, derive, and analyse numerous diagnostic parameters which describe vital processes on the Earth's surface**
- EnMAP data was already assessed as CEOS Analysis Ready Data prior to launch.



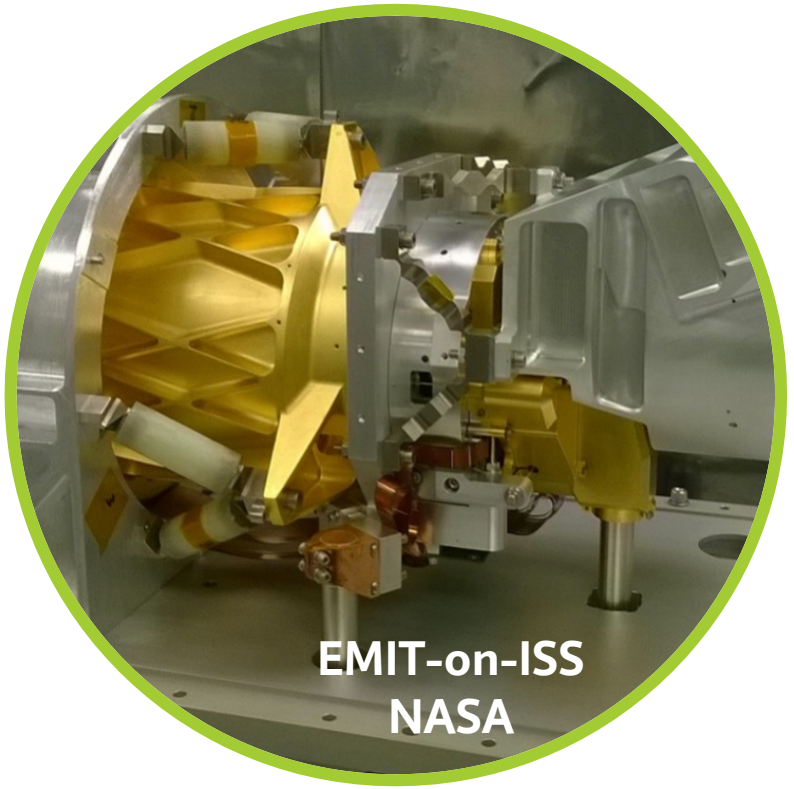
LARES-2



- Launched 13th July, 2022
- H303 retrorefelectors that will reflect laser pulses from ground stations and allow the position of the satellite to be measured to within 1 mm
- The **precisely determined orbit** of the satellite will be used to calculate the **dragging of inertial frames due to the Earth's angular momentum, known as the Lense-Thirring effect.**

EMIT-on-ISS

- Launched to the ISS on 14th July, 2022
- Installed on the exterior of the ISS on July 22nd – 27th
- EMIT is comprehensively **measuring the mineral composition of Earth's dust source regions**
- Helping scientists understand **how dust can heat or cool our planet** when strong winds lift the particles from Earth's desert and dryland regions and carry them great distances through the atmosphere.



EMIT-on-ISS
NASA

JPSS-2

- Launched 10th November, 2023
- Renamed NOAA-21 following launch
- The second mission of the **new generation of NOAA's POES** (Polar-Orbiting Environmental Satellites) system
- Provides operational continuity of satellite-based observations and products for **numerical weather prediction**

Oceansat-3

- Launched on 26th November, 2022
- Multi-sensor mission to provide service continuity for users of Oceansat-2 data and improve upon existing remote sensing capabilities in the field of **oceanography**
- Oceansat-3 data has applications in **ocean colour, biology, and surface winds and temperature**
- Also carries the **ARGOS-4 data collection system**, in partnership with CNES

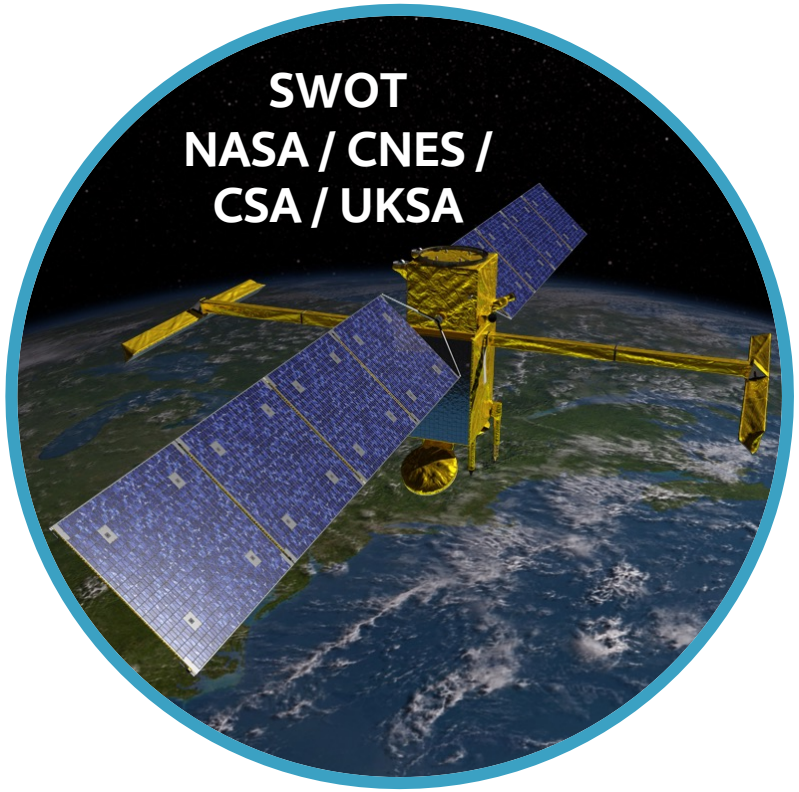
Oceansat-3
ISRO

MTG-I1

- Launched 13th December, 2022
- First of the six-satellite Meteosat Third Generation **geostationary** constellation
- **Four MTG-I (Imager) satellites** will be complemented by **two MTG-S (Sounder) satellites**
- Carries Europe's **first lightning imager** – which will give weather forecasters greater confidence in their predictions of **severe storms**, particularly in remote regions and on the oceans where lightning detection capabilities are limited

SWOT

- Launched on 16th December, 2022
- A **swath-based Synthetic Aperture Radar (SAR) altimetry mission**, following from the Jason-1, -2 and -3 missions
- SWOT will perform a **global survey of the Earth's surface water**, collecting detailed measurements of how water bodies change over time
- The data collected by this mission could **improve ocean circulation models and weather predictions,** while aiding in **freshwater management** around the world



Electro-L N4

- Launched 5th February, 2023
- **Operational meteorology satellite hosted in Geostationary orbit at 165° East**, over Eastern Asia and the Pacific.
- Carries the Module for Geophysical Measurements (GGAK-E) to monitor and forecast **solar activity, radiation and magnetic fields around Earth**
- Also carries the **multispectral scanning imager-radiometer** (MSU-GS) which measures multiple parameters for operational meteorology.

TEMPO

- Launched as a payload on Intelsat 40E on 7th April, 2023
- Intelsat 40E is a commercial communications satellite in **geostationary orbit at 91° West**
- TEMPO is the first space-based instrument to **measure air quality over North America** hourly during the daytime and at spatial regions of several square miles

NORSAT-TD

- Launched 15th April, 2023
- 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**

FY-3RM-1 (FY-3G)

- Launched on 16th April, 2023
- Dedicated **rainfall** mission in low Earth orbit
- Will help monitor and predict meteorological disasters like **rainstorms and typhoons** during the main flood season
- Equipped with a **Ku/Ka-band dual-frequency precipitation measurement radar**

TROPICS

- Launched 8th May and 26th May, 2023
- Four-satellite constellation
- Provides **rapid-refresh microwave measurements** to monitor tropical storms
- Aims to improve the understanding and prediction of the **evolution of tropical cyclone structure, size, and intensity**

Kondor-FKA N-1

- Launched on 26th May, 2023
- Hosts an **S-band Synthetic Aperture Radar (SAR)** instrument, with spatial resolutions up to 1 m, and swaths as wide as 500 km across various modes
- The data has applications in **disaster monitoring, sea surface monitoring, and environmental management**

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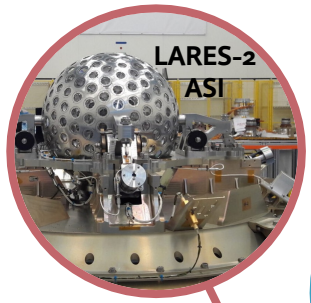

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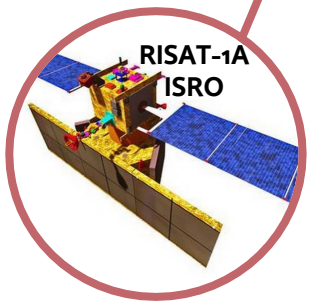

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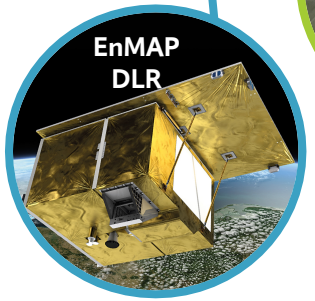

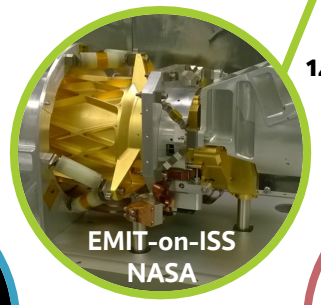

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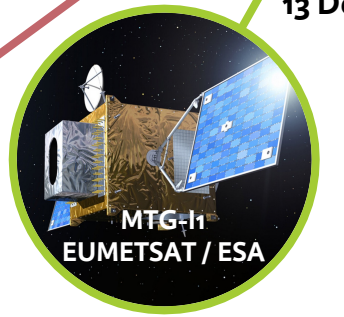

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