

Satellite of the day: MetOp-SG A&B



Optik, Strahlung, Fernerkundung

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Image:<https://directory.eoportal.org/web/eoportal/satellite-missions/m/metop-sg>

The MetOp-SG satellites

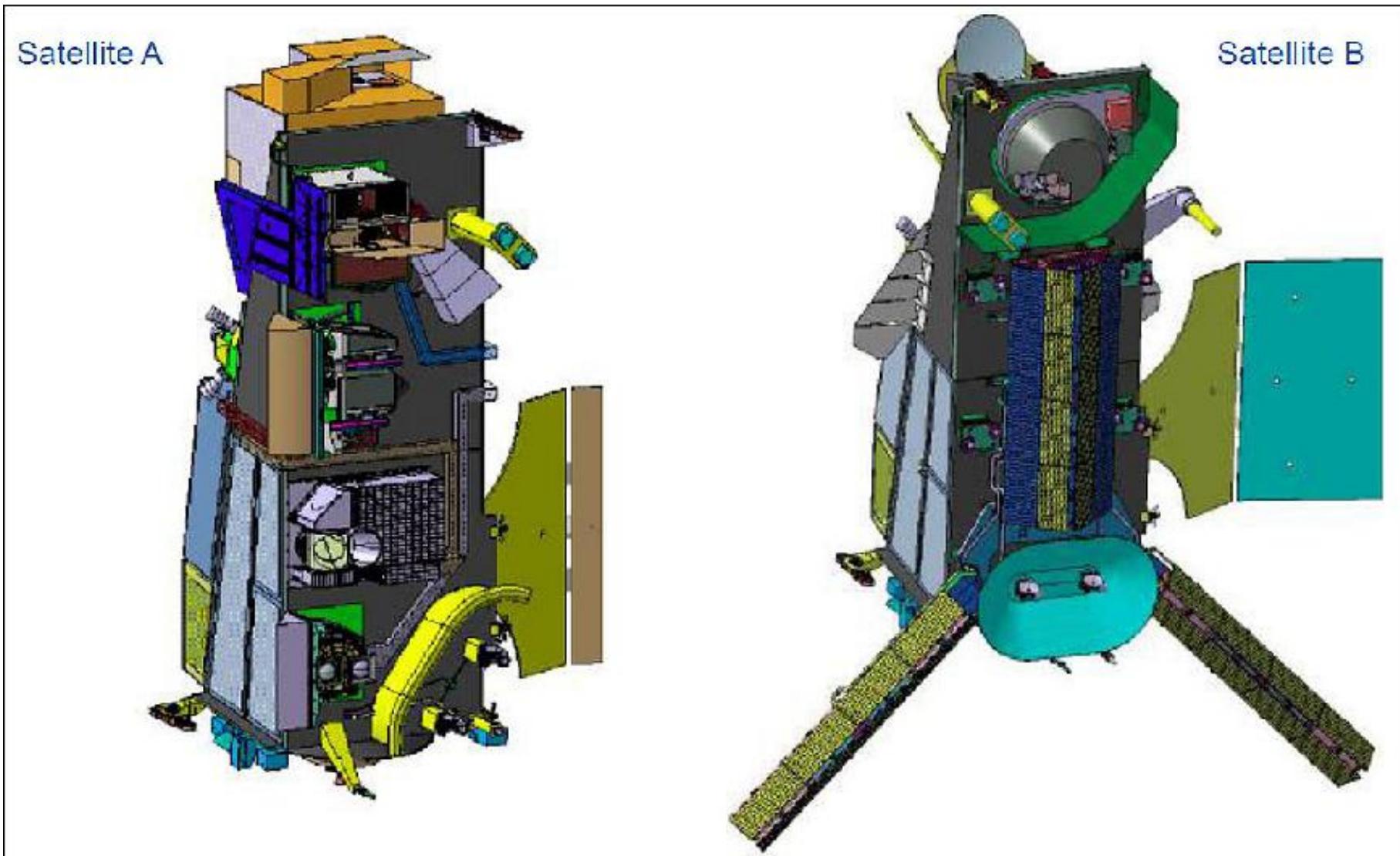
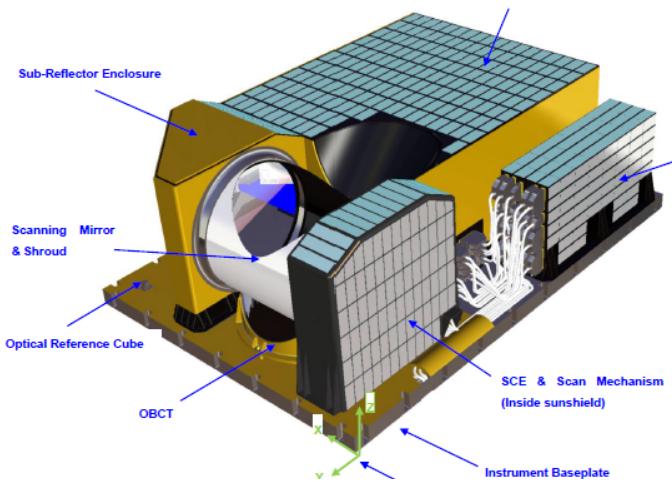
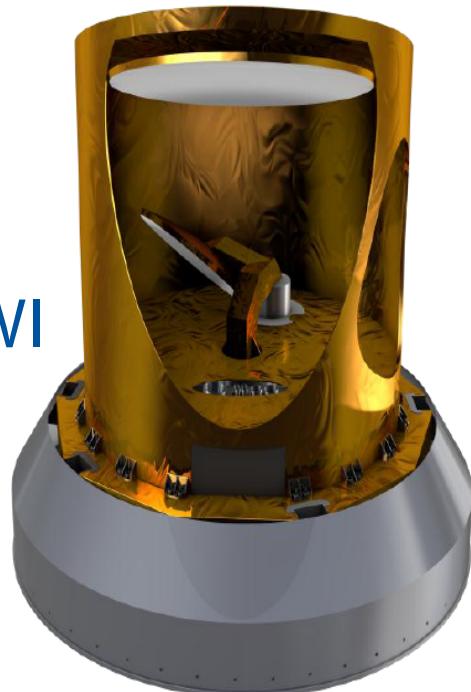


Image:<https://directory.eoportal.org/web/eoportal/satellite-missions/m/metop-sg>

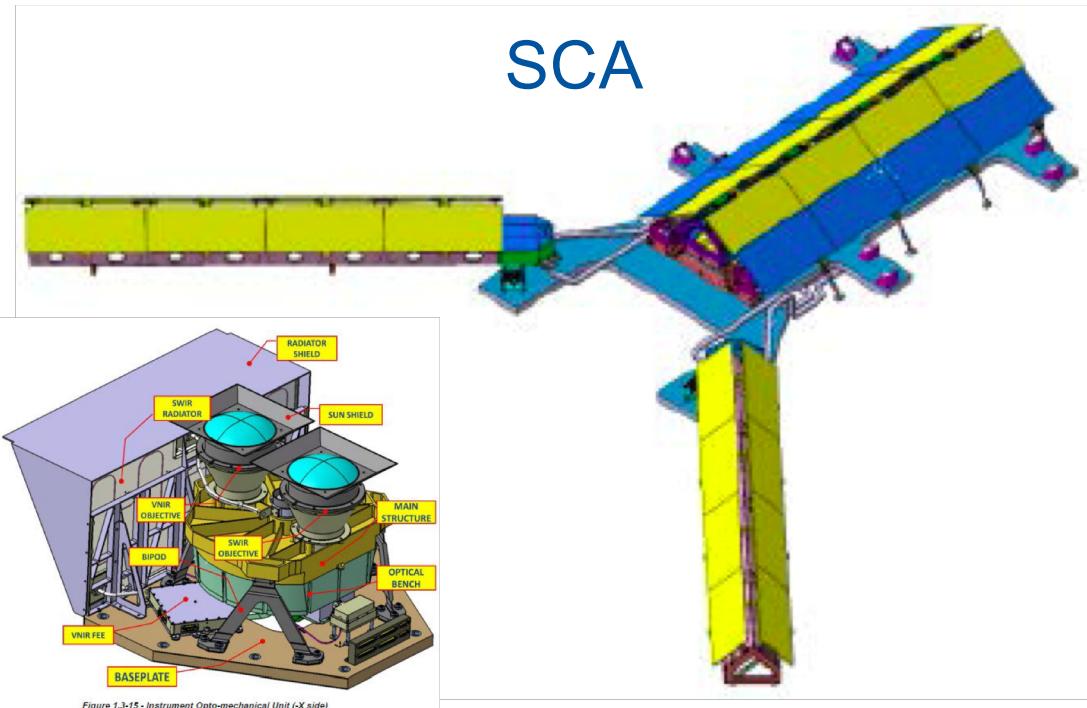
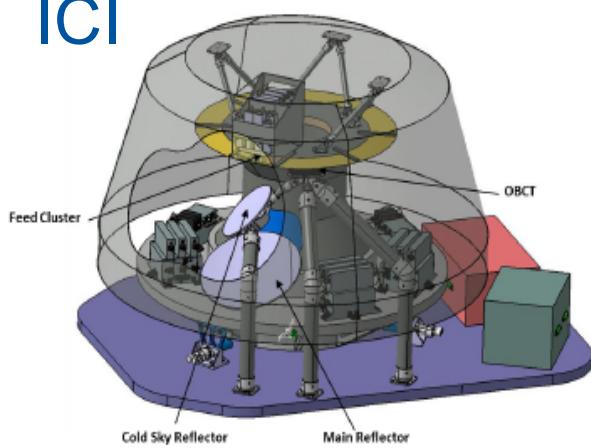


MWS

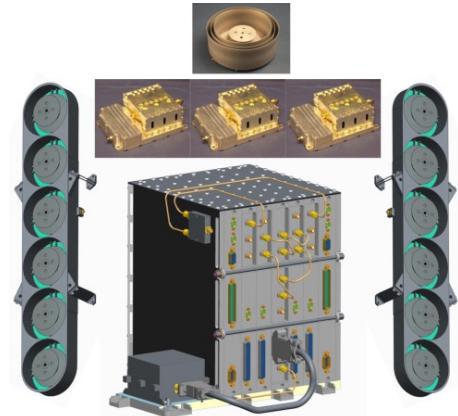


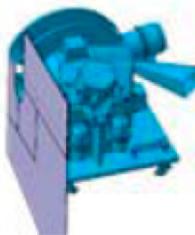
3MI

ICI



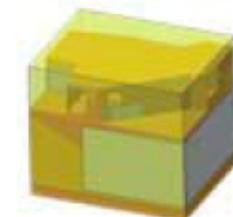
RO





METImage

High-performance, medium-resolution, multi-spectral, visible and infrared imaging radiometer, successor to AVHRR/3 for surface properties, clouds, aerosol and vegetation.



IASI-NG

Infrared Atmospheric Sounding Interferometer - New Generation

Fourier transform spectrometer, in continuity of IASI, with enhanced radiometric and spectral performances for humidity profiles, atmospheric layers and new chemical species detection.



Sentinel-5

UV, visible and infrared sounder for operational monitoring of key atmospheric constituents (O_3 , NO_2 , CO_2 , aerosols,...) and trace gas concentrations for atmospheric chemistry and climate applications.



ADCS-4

ARGOS Data Collection System



RF receiver for the collection and transmission of observations and data from surface, buoy, ship, balloon or airborne data collection platforms.

Properties

	MetOp-SG-A	MetOp-SG-B
Launch	~2021	~2022
Orbit, altitude	SSO, 830 km	SSO, 830 km
S/C mass	~4.017 (+135 adaptor) kg	~3.818 (+135 adaptor) kg
Lifetime	8.5 years	8.5 years
Sensor complement	8 instruments	7 instruments
	METimage (DLR)	MWI (Microwave Imaging Radiometer), (ESA)
	MWS (Microwave Sounder), (ESA)	ICI (Ice Cloud Imager), (ESA)
	IASI-NG (Infrared Atmospheric Sounder Interferometer-Next Generation), (CNES)	SCA (Scatterometer), (ESA)
	RO (Radio Occultation), (ESA)	RO (Radio Occultation), (ESA)
	3MI (Multi-view Multi-channel Multi-polarization Imager), (ESA)	Argos-4 (Data Collection Service) (NOAA/CNES)
	Radiation Energy Radiometer (NOAA)	Search and Rescue (COSPAS-SARSAT)
	UVNS/Sentinel-5 (ESA/Copernicus)	Space Environment Monitor (NOAA)
	Low Light Imager (NOAA)	

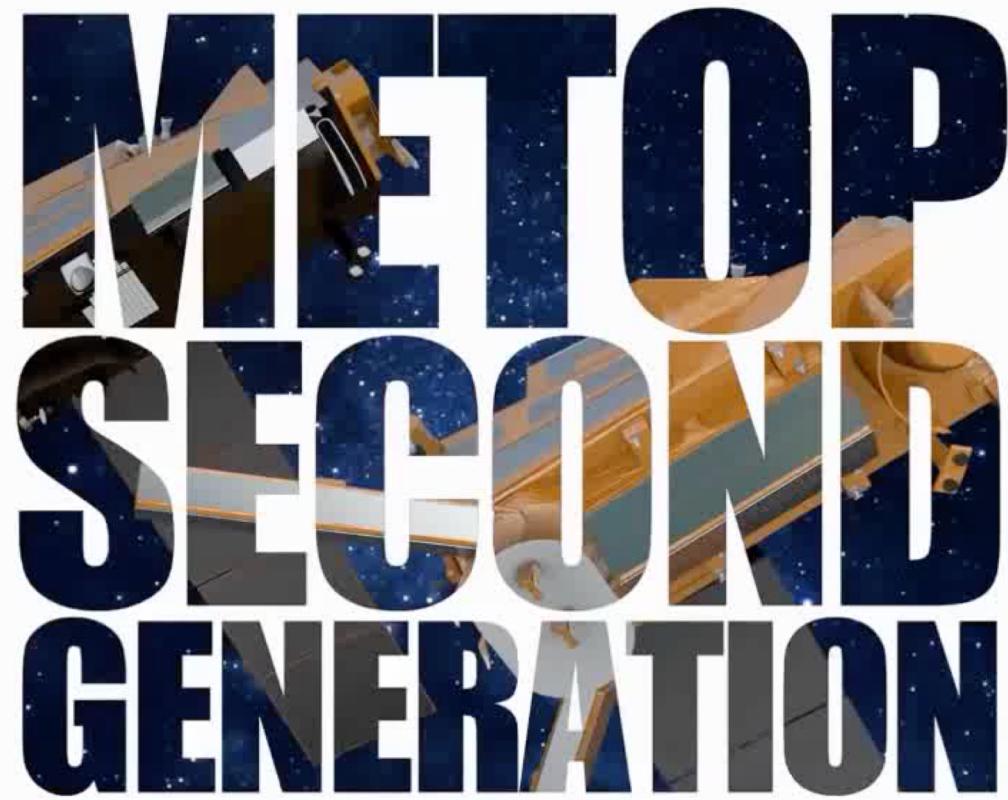
Source:<https://directory.eoportal.org/web/eoportal/satellite-missions/m/metop-sg>

Scientific instruments and their targets

- ▶ **METimage** (Meteorological Imager): clouds, cloud cover, land surface properties, sea, ice and land surface temperatures, etc.
- ▶ **IASI-NG** (Infrared Atmospheric Sounding Interferometer–New Generation): atmospheric temperature and humidity profiles, ozone, trace gases.
- ▶ **3MI** (Multi-viewing, Multi-channel, Multi-polarization Imager): atmospheric aerosols
- ▶ **MWS** (MicroWave Sounder): atmospheric temperature and humidity profiles.
- ▶ **UVNS/S5** (Ultra-Violet /Visible/Near Infrared/Short Wave Infrared spectrometer -Sentinel-5): trace gases, air quality
- ▶ **RO** (Radio Occultation sounder): atmospheric temperature and humidity profiles, ionosphere.
- ▶ **SCA** (Scatterometer): ocean surface wind vectors and land surface soil moisture
- ▶ **MWI** (MicroWave Imager): precipitation, sea ice
- ▶ **ICI** (Ice and Cloud Imager: water path, properties and altitude of cloud ice.

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MetOp-SG A & B: Data acquisition



Mission Data Acquisition Principle

Source: <https://www.youtube.com/watch?v=bJfNG-jTyc8>