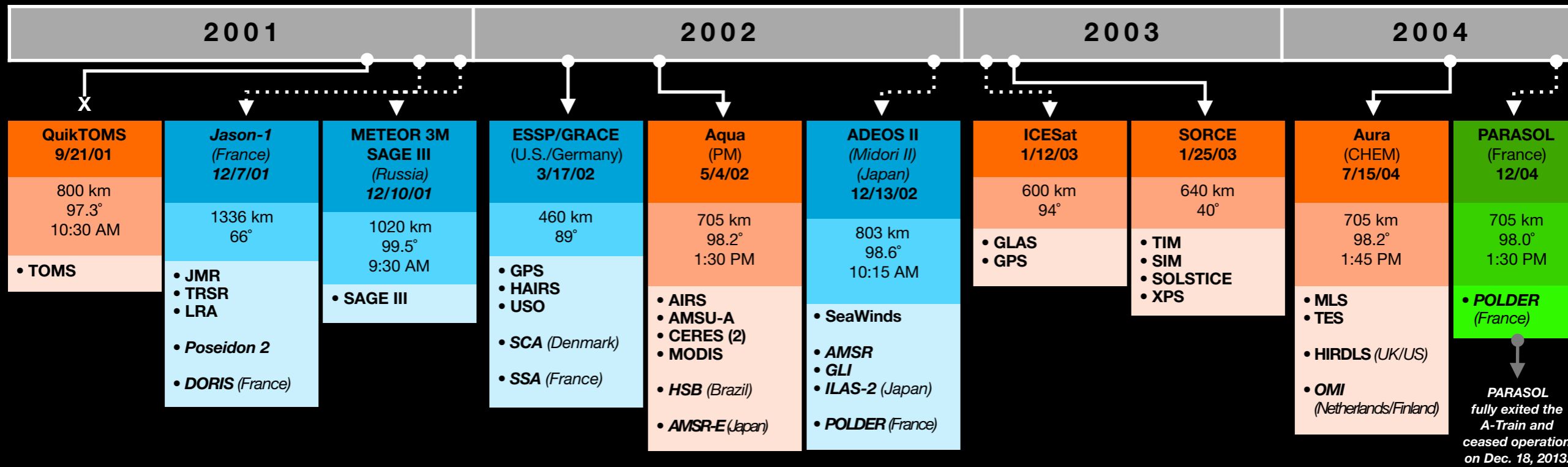
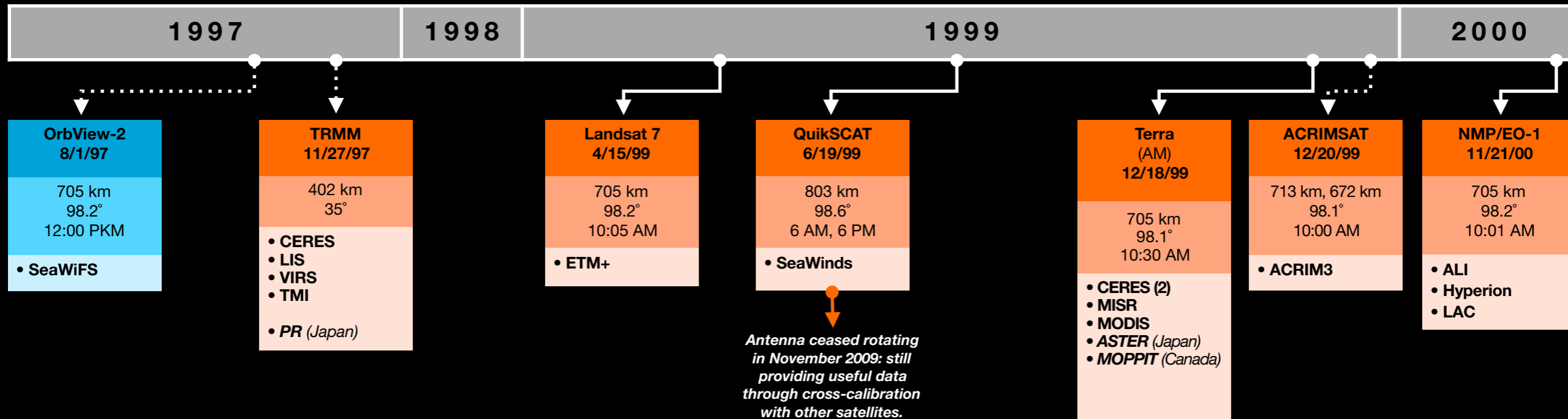


Earth Science Mission Profile 1997 - 2004

Revised:
June 10, 2015



Click the mission name below for a detailed description.



Spacecraft not provided by NASA Non NASA A-Train constellation member

Items in italics not funded by NASA.

¹ OrbView-2 is not provided or operated by NASA but is a data buy.

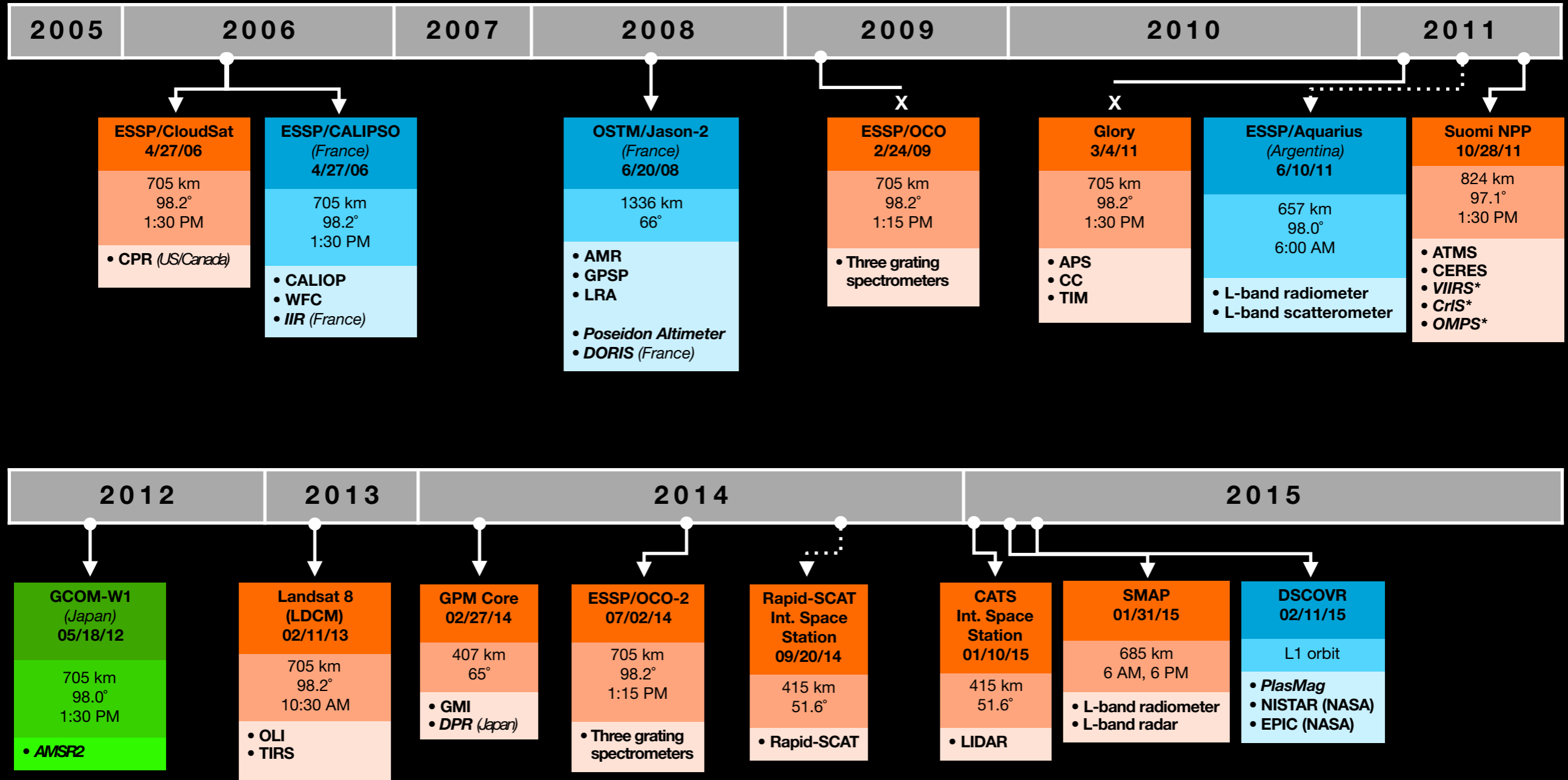


Earth Science Mission Profile 2005 - 2015

Revised:
December 8, 2016



Click the mission name below for a detailed description.



 Spacecraft not provided by NASA
 Non NASA A-Train constellation member
 Other agency spacecraft of interest

Items in italics not funded by NASA.

* Instrument provided jointly with the Integrated Program Office (IPO)

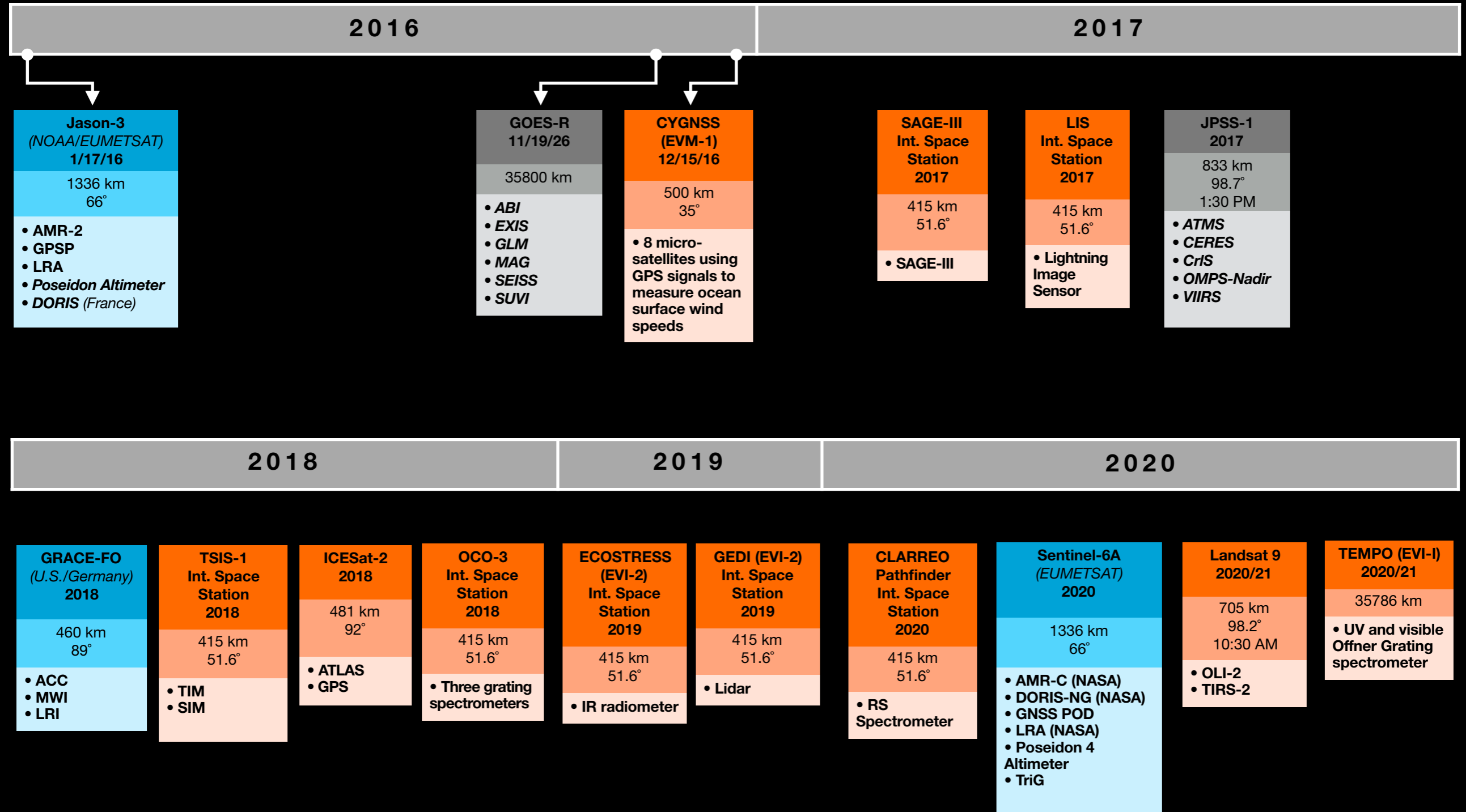
Currently in Operation
 Future Mission
 X Launch Failure
 No Longer in Science Operation

Earth Science Mission Profile 2016 - 2020

Revised:
December 19, 2016



Click the mission name below for a detailed description.



Spacecraft not provided by NASA
Other agency spacecraft of interest

Currently in Operation
 Future Mission
 X Launch Failure
 No Longer in Science Operation

Items in italics not funded by NASA.

Future mission launch dates indicate agency baseline commitment (ABC) schedule confidence levels.

Earth Science Mission Profile 2021 - 2023

Revised:
December 19, 2016



Click the mission name below for a detailed description.

2021			2022			2023		
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JPSS-2
2021

833 km
98.7°
1:30 PM

- *A-DCS*
- *ATMS*
- *RBI (NASA)*
- *CrIS*
- *OMPS-Nadir*
- *OMPS-Limb (NASA)*
- *SARSAT*
- *SEM-N*
- *VIIRS*

SWOT
2021

857-890 km
78°

- Ka-band radar interferometer (NASA/CNES/CSA)
- Nadir altimeter (CNES)
- Microwave radiometer (NASA)
- POD (GPS, DORIS, LRA) (NASA/CNES)

GeoCARB
2021

35786 km

- scanning IR slit spectrometer

TROPICS (EVI-3)
2021

600 km
30°

- Constellation of 12 identical 3U CubeSats, each with a 12-channel passive microwave spectrometer

MAIA (EVI-3)
2021

TBD

- Multi-spectral/angle polarimeter

NI-SAR (U.S./India)
2022

747 km
98°

- L-band synthetic aperture radar
- S-band synthetic aperture radar (India)

PACE
2022

- Ocean color spectrometer
- Polarimeter (TBD)

Pre-formulation Decadal Survey Missions

CLARREO

609 km
90°

- Infrared and/or Reflected Solar spectrometer
- GNSS-RO

ACE

- Spectrometer
- Polarimeter
- LIDAR
- Cloud Radar

HyspIRI

- Hyperspectral and TIR imagers

GEO-CAPE

- UV-Vis-NIR
- IR imagers

ASCENDS

- Laser

Spacecraft not provided by NASA

Other agency spacecraft of interest

Items in italics not funded by NASA.

Future mission launch dates indicate agency baseline commitment (ABC) schedule confidence levels.



Currently in Operation



Future Mission



Launch Failure



No Longer in Science Operation

ACRIMSAT

- ACRIM3 - Active Cavity Radiometer Irradiance Monitor

ADEOS II (Midori II)

- AMSR - Advanced Microwave Scanning Radiometer
- GLI - Global Imager
- ILAS-2 - Improved Limb Atmospheric Spectrometer 2
- POLDER - Polarization and Directionality of the Earth's Reflectances

Aqua

- AIRS - Atmospheric Infrared Sounder
- AMSU-A - Advanced Microwave Sounding Unit-A
- CERES - Clouds and the Earth's Radiant Energy System
- MODIS - Moderate Resolution Imaging Spectroradiometer
- HSB - Humidity Sounder for Brazil
- AMSR-E - Advanced Microwave Scanning Radiometer for EOS

Aura

- HIRDLS - High Resolution Dynamics Limb Sounder
- MLS - Microwave Limb Sounder
- OMI - Ozone Monitoring Instrument
- TES - Tropospheric Emission Spectrometer

ESSP/GRACE

Earth System Science Pathfinder/Gravity Recovery And Climate Experiment

- GPS - Black-Jack Global Positioning System Receiver
- HAIRS - High-Accuracy Inter-satellite Ranging System
- SCA - Star Camera Assembly
- SSA - SuperStar Accelerometer
- USO - Ultra Stable Oscillator

ICESat

- GLAS - Geoscience Laser Altimeter System
- GPS - Global Positioning System

Jason-1

- JMR - Jason Microwave Radiometer
- TRSR - Turbo Rogue Space Receiver
- LRA - Laser Retroreflector Array
- DORIS - Doppler Orbitography and Radiopositioning Integrated by Satellite
- Poseidon-2 Altimeter

Landsat 7

- ETM+ - Enhanced Thematic Mapper Plus

METEOR 3M/SAGE III

- SAGE III - Stratospheric Aerosol and Gas Experiment III

NMP/EO-1

New Millennium Program/Earth Observing-1

- ALI - Advanced Land Imager
- Hyperion - Hyperspectral Instrument
- LAC - Linear Etalon Imaging Spectral Array (LEISA) Atmospheric Corrector

OrbView-2

- SeaWiFS - Sea-viewing Wide Field-of-view Sensor

PARASOL

Polarization & Anisotropy of Reflectances for Atmospheric Sciences coupled with Observations for a Lidar

- POLDER - Polarization and Directionality of the Earth's Reflectance

QuikScat

Quick Scatterometer

- SeaWinds

QuikTOMS

- TOMS - Total Ozone Mapping Spectrometer

SORCE

Solar Radiation and Climate Experiment

- TIM - Total Irradiance Monitor
- SIM - Spectral Irradiance Monitor
- SOLSTICE - Solar Stellar Irradiance Comparison Experiment
- XPS - XUV Photometer System

Terra

- ASTER - Advanced Spaceborne Thermal Emission and Reflection Radiometer
- CERES - Clouds and the Earth's Radiant Energy System
- MISR - Multi-angle Imaging Spectroradiometer
- MODIS - Moderate Resolution Imaging Spectroradiometer
- MOPITT - Measurements of Pollution in the Troposphere

TRMM

Tropical Rainfall Measuring Mission

- CERES - Clouds and the Earth's Radiant Energy System
- LIS - Lightning Imaging Sensor
- VIRS - Visible and Infrared Scanner
- TMI - TRMM Microwave Imager
- PR - Precipitation Radar

CATS*Cloud-Aerosol Transport System*

- LIDAR

DSCOVR*Deep Space Climate Observatory*

- PlasMag - Plasma-Magnetometer
- NISTAR - National Institute of Standards and Technology Advanced Radiometer
- EPIC - Earth Polychromatic Imaging Camera

ESSP/Aquarius

- LBR - L-Band Radiometer
- LBS - L-Band Scatterometer

ESSP/CALIPSO*Cloud-Aerosol Lidar and Infrared Pathfinder Satellite Observations*

- CALIOP - Cloud Aerosol Lidar with Orthogonal Polarization
- IIR - Imaging Infrared Radiometer
- WFC - Wide Field Camera

ESSP/CloudSat

- CPR - Cloud Profiling Radar

ESSP/OCO-2 (also ESSP/OCO)*Orbiting Carbon Observatory*

- Three high-resolution grating spectrometers

GCOM-W1*The Global Change Observation Mission-Water*

- AMSR2 - Advanced Microwave Scanning Radiometer

Glory

- APS - Aerosol Polarimetry Sensor
- CC - Cloud Camera
- TIM - Total Irradiance Monitor

GPM Core Observatory*Global Precipitation Measurement*

- DPR - Dual Frequency Precipitation Radar
- GMI - GPM Microwave Imager

LDCM Landsat Data Continuity Mission (Landsat 8)

- OLI - Operational Land Imager
- TIRS - Thermal Infrared Sensor

OSTM/Jason-2*Ocean Surface Topography Mission/Jason-2*

- DORIS - Doppler Orbitography and Radio-positioning Integrated by Satellite
- TRSR - Turbo Rogue Space Receiver
- LRA - Laser Retroreflector Array
- Poseidon-3 Altimeter
- AMR - Advanced Microwave Radiometer
- GPSP - Global Positioning System Payload

Rapid-SCAT (International Space Station)

- Rapid Scatterometer

Suomi NPP*Suomi National Polar-orbiting Partnership*

- ATMS - Advanced Technology Microwave Sounder
- CERES - Clouds and the Earth's Radiant Energy System
- CrIS - Cross-Track Infrared Sounder
- OMPS-Nadir - Ozone Mapping and Profiler Suite
- VIIRS - Visible/Infrared Imager/Radiometer Suite

SMAP*Soil Moisture Active Passive*

- L-Band Radiometer
- L-Band Radar

ACE***Aerosols-Clouds-Ecosystems***

- Spectrometer
- Polarimeter
- LIDAR
- Cloud Radar

ASCENDS***Active Sensing of CO₂ Emissions over Nights, Days, and Seasons***

- Laser

CLARREO Pathfinder***Climate Absolute Radiance & Refractivity Observatory***

- Reflected Solar Spectrometer
- GNSS-RO - Global Navigation Satellite Systems - Radio Occultation System

CYGNSS (EVM-1)***Cyclone Global Navigation Satellite System (Earth Venture-2)***

- 8 micro-satellites using GPS signals to measure ocean surface wind speeds

ECOSTRESS***ECOsysteM Spaceborne Thermal Radiometer Experiment on Space Station***

- Infrared radiometer

EVI-4***Earth Venture Instrument*****EVM-2*****Earth Venture Full Orbital Mission*****GEDI*****Global Ecosystem Dynamics Investigation***

- Lidar

GEO-CAPE

- Ultraviolet-visible-near-infrared
- Infrared imagers

GeoCARB***Geostationary Carbon Cycle Observatory***

- scanning IR slit spectrometer

GOES-R***Geostationary Operational Environmental Satellite-R Series***

- ABI - Advanced Baseline Imager
- EXIS - Extreme Ultraviolet and X-Ray Irradiance Sensor
- GLM - Geostationary Lightning Mapper
- MAG - Magnetometer
- SEISS - Space Environment In Situ Suite
- SUVI - Solar Ultraviolet Imager

GRACE-FO***Gravity Recovery And Climate Experiment-Follow-on***

- ACC - Accelerometer
- MWI - Microwave Instrument
- LRI - Laser Ranging Interferometer

HyspIRI

- Hyperspectral and thermal infrared imagers

ICESat-2

- ATLAS - Advanced Topographic Laser Altimeter System
- GPS - Global Positioning System

Jason-3

- DORIS - Doppler Orbitography and Radio-positioning Integrated by Satellite
- TRSR - Turbo Rogue Space Receiver
- LRA - Laser Retroreflector Array
- Poseidon-3 Altimeter
- AMR-2 - Advanced Microwave Radiometer
- GPSP - Global Positioning System Payload

JPSS-1**Joint Polar Satellite System**

- ATMS - Advanced Technology Microwave Sounder
- CERES - Clouds and the Earth's Radiant Energy System
- CrIS - Cross-Track Infrared Sounder
- OMPS-Nadir - Ozone Mapping and Profiler Suite
- RBI - Radiation Budget Experiment
- VIIRS - Visible/Infrared Imager/Radiometer Suite

JPSS-2**Joint Polar Satellite System****Landsat 9**

- OLI-2 Operational Land Imager-2
- TIRS-2 Thermal Infrared Sensor-2

LIS

- LIS - Lightning Image Sensor

MAIA**Multi-Angle Imager for Aerosols**

- Multi-spectral/angle polarimeter

NI-SAR

- InSAR - Interferometric Synthetic Aperture RADAR (Radio Detection and Ranging)

OCO-3**Orbiting Carbon Observatory**

- Three high-resolution grating spectrometers

PACE (Pre-ACE)**Pre-Aerosol, Clouds, and ocean Ecosystem**

- Ocean color/aerosol spectrometer
- Polarimeter (International partnership TBD)

Sentinel 6A

- AMR-C - Climate Quality Microwave Radiometer
- DORIS-NG - Doppler Orbitography and Radio-positioning Integrated by Satellite-NG
- GNSS POD Receiver
- LRA - Laser Retroreflector Array
- Poseidon-4 Altimeter - Poseidon-4 SAR Radar Altimeter
- TriG - TriG Receiver for Radio Occultation

SAGE-III (International Space Station)

- Stratospheric Aerosol and Gas Experiment - III

SWOT**Surface Water Ocean Topography**

- KaRIn - Ka-band radar interferometer
- Nadir Altimeter
- Microwave Radiometer
- POD (GPS, DORIS, LRA)

TEMPO**Tropospheric Emissions: Monitoring of Pollution**

- UV and Visible Offner Grating Spectrometer

TROPICS**Time-Resolved Observations of Precipitation structure and storm Intensity with a Constellation of Smallsats**

- 12 identical 3U CubeSats, each with a 12-channel passive microwave spectrometer

TSIS-1**Total and Spectral Solar Irradiance Sensor**

- Total Irradiance Monitor
- Spectral Irradiance Monitor

TSIS-2**Total and Spectral Solar Irradiance Sensor**

- Total Irradiance Monitor
- Spectral Irradiance Monitor