→ THE EARTH OBSERVATION HANDBOOK

2014 | Key Tables (Updated Nov 2013)

→ THE EARTH OBSERVATION HANDBOOK 2014 | Special Edition for Rio+20

Introduction

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 over- view of present and planned civil space agency Earth observation satellite missions and their instruments. The plans of more than 30 space agencies for missions, instruments and measurements during the coming decades are surveyed and captured in the report - making it the most up-to-date and comprehensive statement of governmental Earth observation programmes available.

The print edition of the EO Handbook is published every few years, and is always keenly anticipated by the space community for its insights into future trends world-wide in remote sensing programmes. 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 on-line at:

http://database.eohandbook.com

The CEOS database is the only official, consolidated statement of the Earth observation programmes and plans of all the world's civil space agencies. The database is the cornerstone of the efforts of CEOS coordination on gaps and overlaps to optimise global observations in support of key societal needs such as climate change information.

The 2014 survey of CEOS space agencies is complete as of Nov 2013, and the database has been updated with the results. The database now features details of 258 Earth observing satellite missions and 767 instruments (383 distinct instruments, some being repeats), which are currently operating or planned for launch in the next 15 years - funded and operated by around 30 space agencies worldwide. The database allows users to filter, export and analyse this information in support of their analyses and planning.

The ESA team has prepared this printable PDF of key tables based on the 2014 database contents. It is hoped that this document will provide an solution of value to those many users who welcome having a bookshelf reference to hand.

The contents are as follows:

Recent & upcoming launches

7 missions were launched by CEOS agencies from the start of 2013 through to end October 2013 (the cut-off date for inputs to this publication).

Mission	Agency	Launch
Landsat 8	USGS / NASA	Feb 2013
PROBA-V	ESA / BELSPO	May 2013
Resurs P N1 (Resurs P Environmental Satellite N1)	ROSKOSMOS / ROSHYDROMET	Jun 2013
INSAT-3D (Indian National Satellite - 3D)	ISRO	Jul 2013
KOMPSAT-5 (Korea Multi-Purpose Satellite -5)	KARI	Aug 2013
FY-3C (FY-3C Polar-orbiting Meteorological Satellite)	NSMC-CMA / NRSCC	Sep 2013
CASSIOPE	CSA	Sep 2013

30 missions are planned for launch from the start of Nov 2013 through to end December 2014.

Mission	Agency	Launch
TCTE (Total Solar Irradiance (TSI) Calibration Transfer)	NOAA / NASA	Nov 2013
Swarm (Earth's Magnetic Field and Environment Explorers)	ESA / CNES / CSA	Nov 2013
CBERS-3 (China Brazil Earth Resources Satellite - 3)	INPE / CRESDA	Dec 2013
Arkon-2M	ROSKOSMOS	Dec 2013
Himawari-8	JMA	Jan 2014
SARE-1B (SARE-1)	CONAE	Feb 2014
GPM Core (Global Precipitation Measurement Mission Core spacecraft)	NASA / JAXA	Feb 2014
DMSP F-19 (Defense Meteorological Satellite Program F-19)	NOAA / USAF	Mar 2014
Meteor-M N2 (Meteor-M Meteorological Satellite N2)	ROSHYDROMET / ROSKOSMOS	Mar 2014
Sentinel-1 A	ESA / EC	Mar 2014
ALOS-2 (Advanced Land Observing Satellite-2)	JAXA	Mar 2014
AISSat-2 (Automatic Identification System Satellite-2)	NSC	Mar 2014
HY-2B (Ocean dynamics satellite B)	NSOAS / CAST	Mar 2014
KOMPSAT-3A (Korea Multi-Purpose Satellite -3A)	KARI / DLR	May 2014
DSCOVR (Deep Space Climate Observatory)	NOAA / USAF / NASA	Jun 2014
Elektro-L N2 (Geostationary Operational Meteorological Satellite - 2)	ROSHYDROMET / ROSKOSMOS	Jun 2014
OCO-2 (Orbiting Carbon Observatory-2)	NASA	Jul 2014
CARTOSAT-2C (Cartography Satellite - 2C)	ISRO	Jul 2014
SAGE-III (Stratospheric Aerosol and Gas Experiment)	NASA	Sep 2014
Sentinel-2 A	ESA / EC	Sep 2014
PAZ	CDTI	Oct 2014
SMAP (Soil Moisture Active Passive)	NASA / CSA	Nov 2014
Meteor-M N2-1 (Meteor-M Meteorological Satellite N2-1)	ROSHYDROMET / ROSKOSMOS	Dec 2014
FY-3D (FY-3D Polar-orbiting Meteorological Satellite)	NSMC-CMA / NRSCC	Dec 2014
FY-4A (FY-4A Geostationary Meteorological Satellite)	NSMC-CMA / NRSCC	Dec 2014
Sentinel-3 A	ESA / EUMETSAT / EC	Dec 2014
Kanopus-V N2 (Kanopus-V Environmental Satellite N2)	ROSKOSMOS / ROSHYDROMET	Dec 2014
FY-2G (FY-2G Geostationary Meteorological Satellite)	NSMC-CMA / NRSCC	Dec 2014
CFOSAT (Chinese-French Oceanic SATellite)	CNES	Dec 2014
AISSat-3 (Automatic Identification System Satellite-3)	NSC	Dec 2014

A-Z table of satellite missions

CEOS agencies are operating or planning 258 individual satellite Earth observation missions in the 2014 - 2029 period. The table below presents their main characteristics. Please refer to the missions table in the on-line database for the ability to export or analyse this data in more detail:

http://database.eohandbook.com/database/missiontable.aspx

Mission	Status	Launch Date	EOL Date	Applications	Instruments	Orbit Details & URL
3D Winds Three Dimensional Tropospheric Winds from Space Based Lidar NASA	Considered	2030	2033	Phase-3 DS Mission, launch order unknown, 3-year nominal mission. Tropospheric winds for weather forecasting and pollution transport.	HDWL (3D Winds)	Type: Sun-synchronous Altitude: 400 km Period: Inclination: 97.03 deg Repeat cycle: 12 days LST: 6:00 Longitude (if geo): Asc/desc: Ascending URL: decadal.gsfc.nasa.gov/3d-winds.html
ACE Aerosol Clouds and Ecosystem Mission NASA	Considered	2022	2023	Phase-2 DS Mission, launch order unknown, 3-year nominal mission. Aerosol and cloud profiles for climate and water cycle; ocean colour for open ocean biogeochemistry.	Cloud Radar, Next Gen APS (ACE), Multi-band UV/VIS Spectrometer (ACE), Lidar, Ocean Color Spectrometer, Polarimeter	Type: Sun-synchronous Altitude: 650 km Period: Inclination: 98.2 deg Repeat cycle: LST: 13:00 Longitude (if geo): Asc/desc: Ascending URL: dsm.gsfc.nasa.gov/ace/science.html
ACRIMSAT Active Cavity Radiometer Irradiance Monitor NASA	Currently being flown	22 Dec 1999	Sep 2015	5-year nominal mission life, currently in extended operations. Will sustain long-term solar luminosity database by providing measurements of total solar irradiance and the solar constant.	ACRIM III	Type: Sun-synchronous Altitude: 716 km Period: 90 mins Inclination: 98.13 deg Repeat cycle: LST: 10:50 Longitude (if geo): Asc/desc: Descending URL: acrim.jpl.nasa.gov/
ADM-Aeolus Atmospheric Dynamics Mission (Earth Explorer Core Mission) ESA	Approved	Jul 2015	Jul 2019	Will provide wind profile measurements for global 3D wind field products used for study of atmospheric dynamics, including global transport of energy, water, aerosols, and chemicals.	ALADIN	Type: Sun-synchronous Altitude: 405 km Period: 92.5 mins Inclination: 97.01 deg Repeat cycle: 7 days LST: 18:00 Longitude (if geo): Asc/desc: Ascending URL: www.esa.int/export/esaLP/aeolus.html
AISSat-1 Automatic Identification System Satellite-1 NSC	Currently being flown	12 Jul 2010	Aug 2014	Demonstrate and extend access to AIS (Automatic Identification System) signals beyond the land-based AIS system operated by the Norwegian Coastal Administration today. Observe ship traffic in the High North.	SDR	Type: Sun-synchronous Altitude: 635 km Period: 97.4 mins Inclination: 97.71 deg Repeat cycle: LST: 9:30 Longitude (if geo): Asc/desc: Descending URL:
AISSat-2 Automatic Identification System Satellite-2 NSC	Approved	Mar 2014	Mar 2017	Demonstrate and extend access to AIS (Automatic Identification System) signals beyond the land-based AIS system operated by the Norwegian Coastal Administration today. Observe ship traffic in the High North.	SDR	Type: Sun-synchronous Altitude: Period: Inclination: Repeat cycle: LST: TBD Longitude (if geo): Asc/desc: Descending URL:
AISSat-3 Automatic Identification System Satellite-3 NSC	Considered	2014	2017	Demonstrate and extend access to AIS (Automatic Identification System) signals beyond the land-based AIS system operated by the Norwegian Coastal Administration today. Observe ship traffic in the High North.	SDR	Type: Sun-synchronous Altitude: Period: Inclination: Repeat cycle: LST: TBD Longitude (if geo): Asc/desc: Descending URL:
ALOS-2 Advanced Land Observing Satellite-2 JAXA	Approved	Mar 2014	Mar 2019	Environmental monitoring, disaster monitoring, civil planning, agriculture and forestry, Earth resources, land surface.	PALSAR-2 (ALOS-2), CIRC	Type: Sun-synchronous Altitude: 628 km Period: 100 mins Inclination: 97.9 deg Repeat cycle: 14 days LST: 12:00 Longitude (if geo): Asc/desc: Descending URL: www.jaxa.jp/projects/sat/alos2/index_e.html
ALOS-3 Advanced Land Observing Satellite-3 JAXA	Considered	2015	2020	Cartography, digital terrain models, environmental monitoring, disaster monitoring, civil planning, agriculture and forestry, Earth resources, land surface.	PRISM-2 (ALOS-3), HISUI	Type: Sun-synchronous Altitude: 618 km Period: Inclination: Repeat cycle: 60 days LST: 10:30 Longitude (if geo): Asc/desc: Descending URL:
AMAZONIA-1 Amazonia 1 INPE	Approved	Dec 2016	Dec 2019	Earth resources, environmental monitoring, land surface.	AWFI	Type: Sun-synchronous Altitude: 752 km Period: 99.9 mins Inclination: 98.4 deg Repeat cycle: 26 days LST: 10:30 Longitude (if geo): Asc/desc: Descending URL: www.inpe.br
Aqua Aqua (formerly EOS PM-1) NASA / JAXA / INPE	Currently being flown	06 May 2002	Oct 2015	6-year nominal mission life, currently in extended operations. Atmosphericdynamics/water and energy cycles, cloudformation, precipitationand radiativeproperties, air/seafluxes of energy andmoisture, sea ice extentand heat exchange with the atmosphere.	AIRS, MODIS, CERES, HSB, AMSR-E, AMSU-A	Type: Sun-synchronous Altitude: 705 km Period: 98.8 mins Inclination: 98.2 deg Repeat cycle: 16 days LST: 13:30 Longitude (if geo): Asc/desc: Ascending URL: www.gsfc.nasa.gov
Arctica ROSHYDROMET	Approved	Dec 2015	Dec 2018	Meteorology, oceanography, including ice cover monitoring and disaster monitoring in the Arctic region. The payload and design of the satellites is similar to the ones in the Electro-L series. Molniya orbit.	MSU-GS, DCS , GGAK-E	Type: Highly elliptical Altitude: Period: 718 mins Inclination: Repeat cycle: 1 days LST: Longitude (if geo): Asc/desc: N/A URL:
Arkon-2M ROSKOSMOS	Planned	2013	2018	Earth observations and weather information.	Arkon-2M SAR	Type: Sun-synchronous Altitude: 500 km Period: Inclination: Repeat cycle: LST: Longitude (if geo): Asc/desc: URL: www.federalspace.ru
ASCENDS Active Sensing of CO2 Emissions over Nights, Days, and Seasons NASA	Considered	2022	2025	Phase-2 DS Mission, launch order unknown, 3-year nominal mission. Day/night, all-latitude, all-season CO2 column integrals for climate emissions.	CO2 and O2 LIDAR (ASCENDS), CO Sensor (ASCENDS)	Type: Sun-synchronous Altitude: 450 km Period: 97.3 mins Inclination: Repeat cycle: LST: 10:30 Longitude (if geo): Asc/desc: Ascending URL: cce.nasa.gov/ascends/index.htm
Aura Aura (formerly EOS Chemistry) NASA / NSO / FMI / UKSA	Currently being flown	17 Jul 2004	Oct 2015	5-year nominal mission life, currently in extended operations. Chemistry and dynamics of Earth's atmosphere from the ground through the stratosphere.	MLS (EOS-Aura), TES, HIRDLS, OMI	Type: Sun-synchronous Altitude: 705 km Period: 98.8 mins Inclination: 98.2 deg Repeat cycle: 16 days LST: 13:38 Longitude (if geo): Asc/desc: Ascending URL: aura.gsfc.nasa.gov/
CALIPSO Cloud-Aerosol Lidar and Infrared Pathfinder Satellite Observations NASA / CNES	Currently being flown	30 Apr 2006	Oct 2015	3-year nominal mission life, currently in extended operations. Measurements of aerosol and cloud properties for climate predictions, using a 3 channel lidar and passive instruments in formation with Aqua and CloudSat for coincident observations of radiative fluxes and atmospheric state.	WFC, IIR, CALIOP	Type: Sun-synchronous Altitude: 705 km Period: 98.8 mins Inclination: 98.2 deg Repeat cycle: LST: 13:30 Longitude (if geo): Asc/desc: Ascending URL: www-calipso.larc.nasa.gov/

CARTOSAT-1 Cartography Satellite - 1 (IRS P5) ISRO	Currently being flown	05 May 2005	Dec 2014	High precision large-scale cartographic mapping of 1:10000 scale and thematic applications (with merged XS data) at 1:4000 scales.	PAN (Cartosat-1)	Type: Sun-synchronous Altitude: 618 km Period: 97 mins Inclination: 97.87 deg Repeat cycle: 5 days LST: 10:30 Longitude (if geo): Asc/desc: Descending URL: www.isro.org/
CARTOSAT-2 Cartography Satellite - 2 ISRO	Currently being flown	10 Jan 2007	Dec 2013	High precision large-scale cartographic mapping of 1:10000 scale and thematic applications (with merged XS data) at 1:4000 scales.	PAN (Cartosat-2)	Type: Sun-synchronous Altitude: 635 km Period: 97.4 mins Inclination: 97.87 deg Repeat cycle: 5 days LST: 9:30 Longitude (if geo): Asc/desc: Descending URL: www.isro.org/
CARTOSAT-2A Cartography Satellite - 2A ISRO	Currently being flown	28 Apr 2008	Apr 2014	High precision large-scale cartographic mapping of 1:10000 scale and thematic applications (with merged XS data) at 1:4000 scales.	PAN (Cartosat-2A/2B)	Type: Sun-synchronous Altitude: 635 km Period: 97.4 mins Inclination: 97.87 deg Repeat cycle: 5 days LST: 9:30 Longitude (if geo): Asc/desc: Descending URL:
CARTOSAT-2B Cartography Satellite - 2B ISRO	Currently being flown	12 Jul 2010	Jul 2015	High precision large-scale cartographic mapping of 1:10000 scale and thematic applications (with merged XS data) at 1:4000 scales.	PAN (Cartosat-2A/2B)	Type: Sun-synchronous Altitude: 635 km Period: 97.4 mins Inclination: 97.87 deg Repeat cycle: 5 days LST: 9:30 Longitude (if geo): Asc/desc: Descending URL:
CARTOSAT-2C Cartography Satellite - 2C ISRO	Considered	2014	2018	High precision large-scale cartographic mapping and thematic applications with MX data at 1:4000 scales.	HRMX, PAN (Cartosat-2C/2E)	Type: Sun-synchronous Altitude: 635 km Period: 97.4 mins Inclination: 97.87 deg Repeat cycle: 5 days LST: 9:30 Longitude (if geo): Asc/desc: Descending URL:
CARTOSAT-2E Cartography Satellite - 2E ISRO	Approved	Jul 2016	Jul 2022	High precision large-scale cartographic mapping and thematic applications with MX data at 1:4000 scales.	HRMX, PAN (Cartosat-2C/2E)	Type: Sun-synchronous Altitude: 635 km Period: 97.4 mins Inclination: 97.87 deg Repeat cycle: 5 days LST: 9:30 Longitude (if geo): Asc/desc: Descending URL:
CARTOSAT-3 Cartography Satellite - 3 ISRO	Planned	2017	2022	Suitable for cadastral and infrastructure mapping and analysis.	PAN (Cartosat-3), MX (Cartosat-3), HYSI (Cartosat-3/3A)	Type: Sun-synchronous Altitude: 635 km Period: Inclination: 97.9 deg Repeat cycle: LST: 9:30 Longitude (if geo): Asc/desc: Descending URL: www.isro.org/
CASSIOPE CSA	Currently being flown	29 Sep 2013	Sep 2015	The ePOP probe will observe the Earth's ionosphere, where space meets the upper atmosphere.	ePOP	Type: Inclined, non-sun-synchronous Altitude: Period: 103 mins Inclination: 80 deg Repeat cycle: LST: Longitude (if geo): Asc/desc: N/A URL:
CBERS-3 China Brazil Earth Resources Satellite - 3 INPE / CRESDA	Approved	Dec 2013	Dec 2016	Earth resources, environmental monitoring, land surface.	WFI-2, MUX, DCS , IRS, PAN (CBERS)	Type: Sun-synchronous Altitude: 778 km Period: 100.3 mins Inclination: 98.5 deg Repeat cycle: 26 days LST: 10:30 Longitude (if geo): Asc/desc: Descending URL: http://www.cresda.com/
CBERS-4 China Brazil Earth Resources Satellite - 4 INPE / CRESDA	Approved	Dec 2015	Dec 2018	Earth resources, environmental monitoring, land surface.	WFI-2, MUX, DCS , IRS, PAN (CBERS)	Type: Sun-synchronous Altitude: 778 km Period: 100.3 mins Inclination: 98.5 deg Repeat cycle: 26 days LST: 10:30 Longitude (if geo): Asc/desc: Descending URL: http://www.cresda.com/
CFOSAT Chinese-French Oceanic SATellite CNES	Planned	2014	2017	The primary objective of CFOSAT is to monitor at the global scale the wind and waves at the ocean surface.	SWIM, SCAT	Type: Altitude: Period: Inclination: Repeat cycle: LST: Longitude (if geo): Asc/desc: URL:
CloudSat NASA / DoD (USA) / CSA	Currently being flown	30 Apr 2006	Oct 2015	'22-month nominal mission life, currently in extended operations. CloudSat uses advanced radar to "slice" through clouds to see their vertical structure, providing a completely new observational capability from space. First use of active 94 GHz radar from space to study clouds on global basis. Flies in formation with Aqua and CALIPSO in the A-Train Constellation.	CPR (CloudSat)	Type: Sun-synchronous Altitude: 705 km Period: 98.8 mins Inclination: 98.2 deg Repeat cycle: LST: 13:30 Longitude (if geo): Asc/desc: Ascending URL: cloudsat.atmos.colostate.edu/
COMS Communication, Oceanographic, Meteorological Satellite KARI	Currently being flown	26 Jun 2010	Mar 2018	Korea's geostationary meteorological satellite series.	GOCI, MI	Type: Geostationary Altitude: 36000 km Period: Inclination: Repeat cycle: LST: Longitude (if geo): -128.2 Asc/desc: N/A URL:
COSMIC-1/FORMOSAT-3 FM1 Constellation Observing System for Meteorology, Ionosphere and Climate-1 NSPO / NOAA / UCAR	Currently being flown	14 Apr 2006	Mar 2014	Meteorology, ionosphere and climate.	GOX	Type: Inclined, non-sun-synchronous Altitude: 800 km Period: 100 mins Inclination: 72 deg Repeat cycle: LST: Longitude (if geo): Asc/desc: Ascending URL: www.cosmic.ucar.edu/
COSMIC-2/FORMOSAT-3 FM2 Constellation Observing System for Meteorology, Ionosphere and Climate-2 NSPO / NOAA / UCAR	Currently being flown	14 Apr 2006	Mar 2014	Meteorology, ionosphere and climate.	GOX	Type: Inclined, non-sun-synchronous Altitude: 800 km Period: 100 mins Inclination: 72 deg Repeat cycle: LST: Longitude (if geo): Asc/desc: Ascending URL: www.cosmic.ucar.edu/
COSMIC-4/FORMOSAT-3 FM4 Constellation Observing System for Meteorology, Ionosphere and Climate-4 NSPO / NOAA / UCAR	Currently being flown	14 Apr 2006	Mar 2014	Meteorology, ionosphere and climate.	GOX	Type: Inclined, non-sun-synchronous Altitude: 800 km Period: 100 mins Inclination: 72 deg Repeat cycle: LST: Longitude (if geo): Asc/desc: Ascending URL: www.cosmic.ucar.edu/

COSMIC-5/FORMOSAT-3 FM5 Constellation Observing System for Meteorology, Ionosphere and Climate-5 NSPO / NOAA / UCAR	Currently being flown	14 Apr 2006	Mar 2014	Meteorology, ionosphere and climate.	GOX	Type: Inclined, non-sun-synchronous Altitude: 800 km Period: 100 mins Inclination: 72 deg Repeat cycle: LST: Longitude (if geo): Asc/desc: Ascending URL: www.cosmic.ucar.edu/
COSMIC-6/FORMOSAT-3 FM6 Constellation Observing System for Meteorology, Ionosphere and Climate-6 NSPO / NOAA / UCAR	Currently being flown	14 Apr 2006	Mar 2014	Meteorology, ionosphere and climate.	GOX	Type: Inclined, non-sun-synchronous Altitude: 800 km Period: 100 mins Inclination: 72 deg Repeat cycle: LST: Longitude (if geo): Asc/desc: Ascending URL: www.cosmic.ucar.edu/
COSMO-SkyMed 1 COnstellation of small Satellites for Mediterranean basin Observation - 1 ASI / MoD (Italy)	Currently being flown	08 Jun 2007	Jun 2014	Environmental monitoring, surveillance and risk management applications, environmental resources management, maritime management, earth topographic mapping, law enforcement, informative / science applications.	SAR 2000	Type: Sun-synchronous Altitude: 620 km Period: 97.1 mins Inclination: 97.8 deg Repeat cycle: 16 days LST: 6:00 Longitude (if geo): Asc/desc: Ascending URL: www.asi.it/en/activity/earth_observation/cosmoskymed
COSMO-SkyMed 2 COnstellation of small Satellites for Mediterranean basin Observation - 2 ASI / MoD (Italy)	Currently being flown	09 Dec 2007	Dec 2014	Environmental monitoring, surveillance and risk management applications, environmental resources management, maritime management, earth topographic mapping, law enforcement, informative / science applications.	SAR 2000	Type: Sun-synchronous Altitude: 620 km Period: 97.1 mins Inclination: 97.8 deg Repeat cycle: 16 days LST: 6:00 Longitude (if geo): Asc/desc: Ascending URL: www.asi.it/en/activity/earth_observation/cosmoskymed
COSMO-SkyMed 3 COnstellation of small Satellites for Mediterranean basin Observation - 3 ASI / MoD (Italy)	Currently being flown	25 Oct 2008	Oct 2015	Environmental monitoring, surveillance and risk management applications, environmental resources management, maritime management, earth topographic mapping, law enforcement, informative / science applications.	SAR 2000	Type: Sun-synchronous Altitude: 620 km Period: 97.1 mins Inclination: 97.8 deg Repeat cycle: 16 days LST: 6:00 Longitude (if geo): Asc/desc: Ascending URL: www.asi.it/en/activity/earth_observation/cosmoskymed
COSMO-SkyMed 4 COnstellation of small Satellites for Mediterranean basin Observation - 4 ASI / MoD (Italy)	Currently being flown	06 Nov 2010	Nov 2017	Environmental monitoring, surveillance and risk management applications, environmental resources management, maritime management, earth topographic mapping, law enforcement, informative / science applications.	SAR 2000	Type: Sun-synchronous Altitude: 620 km Period: 97.1 mins Inclination: 97.8 deg Repeat cycle: 16 days LST: 6:00 Longitude (if geo): Asc/desc: Ascending URL: www.asi.it/en/activity/earth_observation/cosmoskymed
CryoSat-2 CryoSat-2 (Earth Explorer Opportunity Mission) ESA	Currently being flown	08 Apr 2010	Sep 2014	To determine fluctuations in the mass of the Earth's major land and marine ice fields.	DORIS-NG, SIRAL, Laser Reflectors (ESA)	Type: Inclined, non-sun-synchronous Altitude: 717 km Period: 100 mins Inclination: 92 deg Repeat cycle: 369 days LST: 0.25 degree nodal regression per day Longitude (if geo): Asc/desc: N/A URL: www.esa.int/cryosat
CSG-1 COSMO-SkyMed Seconda Generazione - 1 ASI / MoD (Italy)	Approved	Jun 2016	Jun 2023	Environmental monitoring, surveillance and risk management applications, environmental resources management, maritime management, earth topographic mapping, law enforcement, informative / science applications.	CSG SAR	Type: Sun-synchronous Altitude: 620 km Period: 97.1 mins Inclination: 97.8 deg Repeat cycle: 16 days LST: 6:00 Longitude (if geo): Asc/desc: Ascending URL: www.asi.it
CSG-2 COSMO-SkyMed Seconda Generazione - 2 ASI / MoD (Italy)	Approved	Jun 2017	Jun 2024	Environmental monitoring, surveillance and risk management applications, environmental resources management, maritime management, earth topographic mapping, law enforcement, informative / science applications.	CSG SAR	Type: Sun-synchronous Altitude: 620 km Period: 97.1 mins Inclination: 97.8 deg Repeat cycle: 16 days LST: 6:00 Longitude (if geo): Asc/desc: Ascending URL: www.asi.it
CYGNSS Cyclone Global Navigation Satellite System NASA / NOAA	Approved	Oct 2016	Dec 2018	To understand the coupling between ocean surface properties, moist atmospheric thermodynamics, radiation and convective dynamics in the inner core of a Tropical Cyclone (TC)	DDMI (CYGNSS)	Type: Inclined, non-sun-synchronous Altitude: 500 km Period: 94 mins Inclination: 35 deg Repeat cycle: LST: Longitude (if geo): Asc/desc: TBD URL: aoss-research.engin.umich.edu/missions/cygnss/
Diademe 1&2 CNES	Currently being flown	15 Feb 1967	Dec 2050	Geodetic measurements using satellite laser ranging.	RRA	Type: Inclined, non-sun-synchronous Altitude: 1200 km Period: 108 mins Inclination: 40 deg Repeat cycle: LST: Longitude (if geo): Asc/desc: TBD URL: galileo.crl.go.jp/ilrs/diademe.html
DMSP F-14 Defense Meteorological Satellite Program F-14 NOAA / USAF	Currently being flown	04 Apr 1997	Dec 2013	The long-term meteorological programme of the US Department of Defense (DoD) - with the objective to collect and disseminate worldwide atmospheric, oceanographic, solar-geophyscial, and cloud cover data on a daily basis.	OLS, SSM/I, SSM/T-1, SSM/T-2, SSB/X-2, SSI/ES-2, SSJ/4, SSM	Type: Sun-synchronous Altitude: 833 km Period: 101 mins Inclination: 98.7 deg Repeat cycle: LST: 20:29 Longitude (if geo): Asc/desc: Ascending URL: dmsp.ngdc.noaa.gov/dmsp.html
DMSP F-15 Defense Meteorological Satellite Program F-15 NOAA / USAF	Currently being flown	12 Dec 1999	May 2014	The long-term meteorological programme of the US Department of Defense (DoD) - with the objective to collect and disseminate worldwide cloud cover data on a daily basis. (Primary operational satellite).	OLS, SSM/I, SSM/T-1, SSM/T-2, SSI/ES-2, SSJ/4, SSM	Type: Sun-synchronous Altitude: 833 km Period: 101 mins Inclination: 98.9 deg Repeat cycle: LST: 20:29 Longitude (if geo): Asc/desc: Ascending URL: dmsp.ngdc.noaa.gov/dmsp.html
DMSP F-16 Defense Meteorological Satellite Program F-16 NOAA / USAF	Currently being flown	18 Oct 2003	Oct 2014	The long-term meteorological programme of the US Department of Defense (DoD) - with the objective to collect and disseminate worldwide cloud cover data on a daily basis.	OLS, SSM/IS, SSM, SSI/ES-3, SSJ/5, SSULI, SSUSI	Type: Sun-synchronous Altitude: 833 km Period: 101 mins Inclination: 98.9 deg Repeat cycle: LST: 21:32 Longitude (if geo): Asc/desc: Ascending URL: dmsp.ngdc.noaa.gov/dmsp.html
DMSP F-17 Defense Meteorological Satellite Program F-17 NOAA / USAF	Currently being flown	04 Nov 2006	Jun 2014	The long-term meteorological programme of the US Department of Defense (DoD) - with the objective to collect and disseminate worldwide cloud cover data on a daily basis.	OLS, SSM/IS, SSM, SSI/ES-3, SSULI, SSUSI	Type: Sun-synchronous Altitude: 850 km Period: 101 mins Inclination: 98.7 deg Repeat cycle: LST: 17:31 Longitude (if geo): Asc/desc: Ascending URL: dmsp.ngdc.noaa.gov/dmsp.html
DMSP F-18 Defense Meteorological Satellite Program F-18 NOAA / USAF	Currently being flown	18 Oct 2009	Apr 2014	The long-term meteorological programme of the US Department of Defense (DoD) - with the objective to collect and disseminate worldwide cloud cover data on a daily basis.	OLS, SSM/IS, SSM, SSI/ES-3, SSULI, SSUSI	Type: Sun-synchronous Altitude: 850 km Period: 101 mins Inclination: 98.7 deg Repeat cycle: LST: 17:31 Longitude (if geo): Asc/desc: Ascending URL: dmsp.ngdc.noaa.gov/dmsp.html

DMSP F-19 Defense Meteorological Satellite Program F-19 NOAA / USAF	Approved	Mar 2014	Mar 2019	The long-term meteorological programme of the US Department of Defense (DoD) - with the objective to collect and disseminate worldwide cloud cover data on a daily basis.	OLS, SSM/IS, SSM, SSI/ES-3, SSULI, SSUSI	Type: Sun-synchronous Altitude: 833 km Period: 101 mins Inclination: 98.7 deg Repeat cycle: LST: 17:31 Longitude (if geo): Asc/desc: Ascending URL: dmsp.ngdc.noaa.gov/dmsp.html
DMSP F-20 Defense Meteorological Satellite Program F-20 NOAA / USAF	Approved	Jan 2020	Jan 2025	Launch date is to be determined. Spacecraft is on call-up. The long-term meteorological programme of the US Department of Defense (DoD) - with the objective to collect and disseminate worldwide cloud cover data on a daily basis.	OLS, SSM/IS, SSM, SSI/ES-3, SSULI, SSUSI	Type: Sun-synchronous Altitude: 850 km Period: 101 mins Inclination: 98.7 deg Repeat cycle: LST: 19:00 Longitude (if geo): Asc/desc: Ascending URL: dmsp.ngdc.noaa.gov/dmsp.html
DSCOVR Deep Space Climate Observatory NOAA / USAF / NASA	Approved	Jun 2014	Jul 2019	Launch date under review. Measure a combination of solar phenomena and earth climate measurements. Provides 15 min warning for solar storms (CME) events. This mission is positioned at the Earth-Sun L-1 point.	NISTAR, EPIC, ES, PHA, Plasma-Mag	Type: Earth-Sun L-1 Altitude: Period: Inclination: Repeat cycle: 1 days LST: Longitude (if geo): Asc/desc: N/A URL:
EarthCARE ESA / JAXA	Approved	Nov 2016	Nov 2019	To Improve the understanding of atmospheric cloud–aerosol interactions and of the Earth's radiative balance towards enhancing climate and numerical weather prediction models. The 2 active and 2 passive instruments of EarthCARE make unique data product synergies possible.	CPR (EarthCARE), ATLID, BBR (EarthCARE), MSI (EarthCARE)	Type: Sun-synchronous Altitude: 393 km Period: Inclination: 97 deg Repeat cycle: 25 days LST: 14:00 Longitude (if geo): Asc/desc: Descending URL: www.esa.int/export/esaLP/earthcare.html
Elektro-L N1 Geostationary Operational Meteorological Satellite - 1 ROSHYDROMET / ROSKOSMOS	Currently being flown	20 Jan 2011	Dec 2018	Hydrometeorology, heliogeophysics, climatology, DCS, S&R.	MSU-GS, DCS , GGAK-E, S&R	Type: Geostationary Altitude: 36000 km Period: Inclination: Repeat cycle: LST: Longitude (if geo): -76 Asc/desc: N/A URL: planet.iitp.ru
Elektro-L N2 Geostationary Operational Meteorological Satellite - 2 ROSHYDROMET / ROSKOSMOS	Approved	Jun 2014	Jun 2019	Hydrometeorology, heliogeophysics, climatology, DCS, S&R.	MSU-GS, DCS , GGAK-E, S&R	Type: Geostationary Altitude: 36000 km Period: Inclination: Repeat cycle: LST: Longitude (if geo): -76 Asc/desc: N/A URL: planet.iitp.ru
Elektro-L N3 Geostationary Operational Meteorological Satellite - 3 ROSHYDROMET / ROSKOSMOS	Planned	2015	2022	Hydrometeorology, heliogeophysics, climatology, DCS, S&R.	MSU-GS, DCS , GGAK-E, S&R	Type: Geostationary Altitude: 36000 km Period: Inclination: Repeat cycle: LST: Longitude (if geo): 14.5 Asc/desc: N/A URL: planet.iitp.ru
EnMAP Environmental Mapping & Analysis Program DLR	Approved	Oct 2017	Oct 2022	Hyperspectral imaging, land surface, geological and environmental investigation.	HSI	Type: Sun-synchronous Altitude: 650 km Period: 97.5 mins Inclination: Repeat cycle: 21 days LST: 11:00 Longitude (if geo): Asc/desc: Descending URL: www.enmap.org/
EPS-SG-a EUMETSAT Polar System, Second Generation EUMETSAT / DLR / EC / CNES / ESA	Planned	2021	2028	Meteorology, climatology. EPS-SG-a carries the Sentinel-5 mission. 3 satellites.	METImage, IASI-NG, 3MI, RO, MWS	Type: Sun-synchronous Altitude: Period: Inclination: Repeat cycle: 29 days LST: Longitude (if geo): Asc/desc: N/A URL: www.eumetsat.int/website/home/Satellites/FutureSatellites/EUMETSATPolarSystemSecondGeneration/index.html
EPS-SG-b EUMETSAT Polar System, Second Generation EUMETSAT / CNES / ESA	Planned	2022	2030	Meteorology, climatology. 3 satellites.	A-DCS4, RO, MWI, SCA, ICI, MWS	Type: Sun-synchronous Altitude: Period: Inclination: Repeat cycle: LST: Longitude (if geo): Asc/desc: URL: www.eumetsat.int/website/home/Satellites/FutureSatellites/EUMETSATPolarSystemSecondGeneration/index.html
FY-2D FY-2D Geostationary Meteorological Satellite NSMC-CMA / NRSCC	Currently being flown	08 Dec 2006	Dec 2013	Meteorology and environmental monitoring; data collection and redistribution.	IVISSR (FY-2)	Type: Geostationary Altitude: 36000 km Period: Inclination: Repeat cycle: LST: Longitude (if geo): -86.5 Asc/desc: N/A URL: fy3.satellite.cma.gov.cn/arssen/
FY-2E FY-2E Geostationary Meteorological Satellite NSMC-CMA / NRSCC	Currently being flown	26 Dec 2008	Dec 2013	Meteorology and environmental monitoring; data collection and redistribution.	IVISSR (FY-2)	Type: Geostationary Altitude: 36000 km Period: Inclination: Repeat cycle: LST: Longitude (if geo): -105 Asc/desc: N/A URL: fy3.satellite.cma.gov.cn/arssen/
FY-2F FY-2F Geostationary Meteorological Satellite NSMC-CMA / NRSCC	Currently being flown	13 Jan 2012	Dec 2016	Meteorology and environmental monitoring; data collection and redistribution.	IVISSR (FY-2)	Type: Geostationary Altitude: 36000 km Period: Inclination: Repeat cycle: LST: Longitude (if geo): Asc/desc: N/A URL:
FY-2G FY-2G Geostationary Meteorological Satellite NSMC-CMA / NRSCC	Planned	2014	2017	Meteorology and environmental monitoring; data collection and redistribution.		Type: Geostationary Altitude: 36000 km Period: Inclination: Repeat cycle: LST: Longitude (if geo): Asc/desc: N/A URL:
FY-2H FY-2H Geostationary Meteorological Satellite NSMC-CMA / NRSCC	Planned	2015	2018	Meteorology and environmental monitoring; data collection and redistribution.		Type: Geostationary Altitude: 36000 km Period: Inclination: Repeat cycle: LST: Longitude (if geo): Asc/desc: N/A URL:
FY-3A FY-3A Polar-orbiting Meteorological Satellite NSMC-CMA / NRSCC	Currently being flown	27 May 2008	Dec 2013	Meteorology and environmental monitoring; data collection and redistribution.	IRAS, MWAS, MWHS, MWRI, VIRR, ERM, MERSI, MWTS, TOU/SBUS, SEM, SIM	Type: Sun-synchronous Altitude: 830 km Period: 101 mins Inclination: 98.753 deg Repeat cycle: LST: 10:10 Longitude (if geo): Asc/desc: Descending URL: fy3.satellite.cma.gov.cn/arssen/

FY-3B FY-3B Polar-orbiting Meteorological Satellite NSMC-CMA / NRSCC	Currently being flown	05 Nov 2010	Dec 2013	Meteorology and environmental monitoring; data collection and redistribution. (Experimental pre-cursor to FY-3C).	IRAS, MWAS, MWHS, MWRI, VIRR, ERM, MERSI, MWTS, TOU/SBUS, SEM, SIM	Type: Sun-synchronous Altitude: 830 km Period: 101 mins Inclination: 98.753 deg Repeat cycle: LST: 14:00 Longitude (if geo): Asc/desc: Ascending URL: fy3.satellite.cma.gov.cn/arssen/
FY-3C FY-3C Polar-orbiting Meteorological Satellite NSMC-CMA / NRSCC	Currently being flown	23 Sep 2013	Sep 2016	Meteorology and environmental monitoring; data collection and redistribution. (Operational follow-on to FY-3B).	IRAS, IMWAS, MIRAS, MWRI, VIRR, ERM, MERSI, TOU/SBUS, SIM, MWHS-2, MWTS-2, SES, SIM-2	Type: Sun-synchronous Altitude: 830 km Period: 101 mins Inclination: 98.753 deg Repeat cycle: LST: 10:00 Longitude (if geo): Asc/desc: Descending URL: fy3.satellite.cma.gov.cn/arssen/
FY-3D FY-3D Polar-orbiting Meteorological Satellite NSMC-CMA / NRSCC	Approved	Dec 2014	Dec 2017	Meteorology and environmental monitoring; data collection and redistribution.	IMWAS, MIRAS, MWRI, ASI, GAMI, GNOS, MERSI-2, MWHS-2, MWTS-2, SES	Type: Sun-synchronous Altitude: 830 km Period: 101 mins Inclination: 98.753 deg Repeat cycle: LST: 14:00 Longitude (if geo): Asc/desc: Ascending URL: fy3.satellite.cma.gov.cn/arssen/
FY-3E FY-3E Polar-orbiting Meteorological Satellite NSMC-CMA / NRSCC	Planned	2017	2020	Meteorology and environmental monitoring; data collection and redistribution.	IMWAS, MIRAS, SIM, ASI, ERM-2, GNOS, MERSI-2, MWHS-2, MWTS-2, OMS, SES, WindRAD, SIM-2	Type: Sun-synchronous Altitude: 830 km Period: 101 mins Inclination: 98.753 deg Repeat cycle: LST: 10:00 Longitude (if geo): Asc/desc: Descending URL: fy3.satellite.cma.gov.cn/arssen/
FY-3F FY-3F Polar-orbiting Meteorological Satellite NSMC-CMA / NRSCC	Planned	2019	2022	Meteorology and environmental monitoring; data collection and redistribution.	IMWAS, MIRAS, MVIRS, MWRI, ASI, GAMI, GNOS, MERSI-2, MWHS-2, MWTS-2, SES	Type: Sun-synchronous Altitude: 830 km Period: 101 mins Inclination: 98.753 deg Repeat cycle: LST: 14:00 Longitude (if geo): Asc/desc: Ascending URL: fy3.satellite.cma.gov.cn/arssen/
FY-3G FY-3G Polar-orbiting Meteorological Satellite NSMC-CMA / NRSCC	Considered	2021	2024	Meteorology and environmental monitoring; data collection and redistribution.	IMWAS, MIRAS, MVIRS, ASI, ERM-2, GNOS, MERSI-2, MWHS-2, MWTS-2, OMS, WindRAD, SIM-2	Type: Sun-synchronous Altitude: Period: Inclination: Repeat cycle: LST: 10:00 Longitude (if geo): Asc/desc: Descending URL: fy3.satellite.cma.gov.cn/arssen/
FY-4A FY-4A Geostationary Meteorological Satellite NSMC-CMA / NRSCC	Approved	Dec 2014	Dec 2017	Meteorology and environmental monitoring; data collection and redistribution.	LM, MCSI	Type: Geostationary Altitude: 36000 km Period: Inclination: Repeat cycle: LST: Longitude (if geo): -105 Asc/desc: N/A URL: fy3.satellite.cma.gov.cn/arssen/
FY-4B FY-4B Geostationary Meteorological Satellite NSMC-CMA / NRSCC	Planned	2017	2020	Meteorology and environmental monitoring; data collection and redistribution.	LM, MCSI	Type: Geostationary Altitude: 36000 km Period: Inclination: Repeat cycle: LST: Longitude (if geo): -105 Asc/desc: N/A URL: fy3.satellite.cma.gov.cn/arssen/
FY-4C FY-4C Geostationary Meteorological Satellite NSMC-CMA / NRSCC	Planned	2020	2023	Meteorology and environmental monitoring; data collection and redistribution.	LM, MCSI	Type: Geostationary Altitude: 36000 km Period: Inclination: Repeat cycle: LST: Longitude (if geo): -105 Asc/desc: N/A URL: fy3.satellite.cma.gov.cn/arssen/
FY-4D FY-4D Geostationary Meteorological Satellite NSMC-CMA / NRSCC	Planned	2023	2026	Meteorology and environmental monitoring; data collection and redistribution.	LM, MCSI	Type: Geostationary Altitude: 36000 km Period: Inclination: Repeat cycle: LST: Longitude (if geo): -105 Asc/desc: N/A URL: fy3.satellite.cma.gov.cn/arssen/
FY-4E FY-4E Geostationary Meteorological Satellite NSMC-CMA / NRSCC	Planned	2026	2029	Meteorology and environmental monitoring; data collection and redistribution.	LM, MCSI	Type: Geostationary Altitude: 36000 km Period: Inclination: Repeat cycle: LST: Longitude (if geo): -105 Asc/desc: N/A URL: fy3.satellite.cma.gov.cn/arssen/
GACM Global Atmospheric Composition Mission NASA	Considered	2030	2033	Phase-3 DS Mission, launch order unknown, 3-year nominal mission. Ozone and related gases for intercontinental air quality and stratospheric ozone layer prediction.	UV Spectrometer (GACM), IR Spectrometer(GACM), Microwave limb sounder (GACM)	Type: Sun-synchronous Altitude: Period: Inclination: Repeat cycle: LST: Longitude (if geo): Asc/desc: URL: decadal.gsfc.nasa.gov/gacm.html
GCOM-C1 Global Change Observation Mission-C1 JAXA	Approved	Dec 2015	Dec 2020	Understanding of climate change mechanism.	SGLI	Type: Sun-synchronous Altitude: 800 km Period: 98 mins Inclination: 98.6 deg Repeat cycle: LST: 10:30 Longitude (if geo): Asc/desc: Descending URL: www.jaxa.jp/projects/sat/gcom/index_e.html
GCOM-C2 Global Change Observation Mission-C2 JAXA	Considered	2019	2024	Understanding of climate change mechanism.	SGLI	Type: Sun-synchronous Altitude: 800 km Period: 98 mins Inclination: 98.6 deg Repeat cycle: LST: 10:30 Longitude (if geo): Asc/desc: Descending URL: www.jaxa.jp/projects/sat/gcom/index_e.html
GCOM-C3 Global Change Observation Mission-C3 JAXA	Considered	2023	2028	Understanding of climate change mechanism.	SGLI	Type: Sun-synchronous Altitude: 800 km Period: 98 mins Inclination: 98.6 deg Repeat cycle: LST: 10:30 Longitude (if geo): Asc/desc: Descending URL: www.jaxa.jp/projects/sat/gcom/index_e.html
GCOM-W1 Global Change Observation Mission-W1 JAXA	Currently being flown	18 May 2012	May 2017	Understanding of water circulation mechanism.	AMSR-2	Type: Sun-synchronous Altitude: 700 km Period: 98 mins Inclination: 98.2 deg Repeat cycle: LST: 13:30 Longitude (if geo): Asc/desc: Ascending URL: www.jaxa.jp/projects/sat/gcom/index_e.html

GCOM-W2 Global Climate Observation Mission-W2 JAXA	Considered	2016	2021	Understanding of water circulation mechanism.	AMSR-2	Type: Sun-synchronous Altitude: 700 km Period: 98 mins Inclination: 98.2 deg Repeat cycle: LST: 13:30 Longitude (if geo): Asc/desc: Ascending URL: www.jaxa.jp/projects/sat/gcom/index_e.html
GCOM-W3 Global Change Observation Mission-W3 JAXA	Considered	2020	2025	Understanding of water circulation mechanism.	AMSR-2	Type: Sun-synchronous Altitude: 700 km Period: 98 mins Inclination: 98.2 deg Repeat cycle: LST: 13:30 Longitude (if geo): Asc/desc: Ascending URL: www.jaxa.jp/projects/sat/gcom/index_e.html
GEO-CAPE Geostationary Coastal and Air Pollution Events NASA	Considered	2023	2026	Phase-2 DS Mission, launch order unknown, 3-year nominal mission. Atmospheric gas columns for air quality forecasts; ocean colour for coastal ecosystem health and climate emissions.	Event Imaging Spectrometer from GEO (GeoCape), IR Correlation Radiometer (GeoCape)	Type: Geostationary Altitude: 42000 km Period: Inclination: Repeat cycle: 1 days LST: Longitude (if geo): 80 Asc/desc: N/A URL: geo-cape.larc.nasa.gov/
GEO-KOMPSAT-2A Geostationary Korea Multi-Purpose Satellite-2A KARI	Approved	Dec 2017	Dec 2027	Korea's geostationary meteorological satellite series.	Advanced MI	Type: Geostationary Altitude: 36000 km Period: Inclination: Repeat cycle: LST: Longitude (if geo): -128.2 Asc/desc: N/A URL:
GEO-KOMPSAT-2B Geostationary Korea Multi-Purpose Satellite-2B KARI	Approved	May 2018	Apr 2025	Korea's geostationary oceanographic and environmental satellite.	Advanced GOCI, GEMS	Type: Geostationary Altitude: Period: Inclination: Repeat cycle: LST: Longitude (if geo): Asc/desc: URL:
GISAT GEO HR IMAGER ISRO	Approved	Dec 2016	Dec 2025	Crop assessment, vegetation dynamics, drought assessment; quick monitoring of disasters, natural hazard and calamities, episodic events and short term events.	HRMX-VNIR, HYSI-SWIR, HYSI-VNIR, HRMX-TIR	Type: Geostationary Altitude: 36000 km Period: Inclination: Repeat cycle: LST: Longitude (if geo): Asc/desc: N/A URL:
GOES-13 Geostationary Operational Environmental Satellite - 13 NOAA	Currently being flown	24 May 2006	Jun 2015	Meteorology (primary mission), search and rescue, space environment monitoring, data collection platform, data gathering, WEFAX.	S&R (GOES), SXI, Sounder, Imager, GOES Comms, SEM (GOES), A-DCS4, LRIT	Type: Geostationary Altitude: 36000 km Period: Inclination: Repeat cycle: LST: Longitude (if geo): 75 Asc/desc: N/A URL: www.oso.noaa.gov/goes
GOES-14 Geostationary Operational Environmental Satellite - 14 NOAA	Currently being flown	27 Jun 2009	Dec 2019	Meteorology (primary mission), search and rescue, space environment monitoring, data collection platform, data gathering, WEFAX. On-orbit spare.	S&R (GOES), Sounder, Imager, GOES Comms, SEM (GOES), A-DCS4, LRIT	Type: Geostationary Altitude: 36000 km Period: Inclination: Repeat cycle: LST: Longitude (if geo): 105 Asc/desc: N/A URL: www.oso.noaa.gov/goes/
GOES-15 Geostationary Operational Environmental Satellite - 15 NOAA	Currently being flown	04 Mar 2010	Jan 2017	Meteorology (primary mission), search and rescue, space environment monitoring, data collection platform, data gathering, WEFAX.	S&R (GOES), SXI, Sounder, Imager, GOES Comms, SEM (GOES), A-DCS4, LRIT	Type: Geostationary Altitude: 36000 km Period: Inclination: Repeat cycle: LST: Longitude (if geo): 135 Asc/desc: N/A URL: www.oso.noaa.gov/goes/
GOES-R Geostationary Operational Environmental Satellite - R NOAA / NASA	Approved	Oct 2015	Mar 2025	Launch date under review. Meteorology (primary mission), search and rescue, space environment monitoring, data collection platform, data gathering.	ABI, GLM, Magnetometer (NOAA), EXIS, SEISS, SUVI, DCS (GOES-R)	Type: Geostationary Altitude: 36000 km Period: Inclination: Repeat cycle: LST: Longitude (if geo): Asc/desc: N/A URL: www.goes-r.gov/
GOES-S Geostationary Operational Environmental Satellite - S NOAA / NASA	Approved	Feb 2017	Oct 2028	Launch date under review. Meteorology (primary mission), search and rescue, space environment monitoring, data collection platform, data gathering.	ABI, GLM, Magnetometer (NOAA), EXIS, SEISS, SUVI, DCS (GOES-R)	Type: Geostationary Altitude: 36000 km Period: Inclination: Repeat cycle: LST: Longitude (if geo): Asc/desc: N/A URL: www.goes-r.gov/
GOES-T Geostationary Operational Environmental Satellite - T NOAA / NASA	Approved	Apr 2019	Jul 2033	Launch date under review. Meteorology (primary mission), search and rescue, space environment monitoring, data collection platform, data gathering.	ABI, GLM, Magnetometer (NOAA), EXIS, SEISS, SUVI, DCS (GOES-R)	Type: Geostationary Altitude: 36000 km Period: Inclination: Repeat cycle: LST: Longitude (if geo): Asc/desc: N/A URL: www.goes-r.gov/
GOES-U Geostationary Operational Environmental Satellite - U NOAA / NASA	Approved	Oct 2024	Oct 2038	Launch date under review. Meteorology (primary mission), search and rescue, space environment monitoring, data collection platform, data gathering.	ABI, GLM, Magnetometer (NOAA), EXIS, SEISS, SUVI, DCS (GOES-R)	Type: Geostationary Altitude: 36000 km Period: Inclination: Repeat cycle: LST: Longitude (if geo): Asc/desc: N/A URL: www.goes-r.gov/
GOSAT Greenhouse gases Observing SATellite JAXA / MOE (Japan) / NIES (Japan)	Currently being flown	23 Jan 2009	Jan 2014	Observation of greenhouse gases.	TANSO-CAI, TANSO-FTS	Type: Sun-synchronous Altitude: 666 km Period: 98.18 mins Inclination: 98.06 deg Repeat cycle: 3 days LST: 13:00 Longitude (if geo): Asc/desc: Descending URL: www.jaxa.jp/projects/sat/gosat/index_e.html
GOSAT-2 Greenhouse gases Observing SATellite-2 JAXA / MOE (Japan) / NIES (Japan)	Considered	2018	2023	Observation of greenhouse gases.	TANSO-CAI-2, TANSO-FTS-2	Type: Altitude: 666 km Period: 98.18 mins Inclination: 98.06 deg Repeat cycle: LST: 13:00 Longitude (if geo): Asc/desc: Descending URL:
GPM Core Global Precipitation Measurement Mission Core spacecraft NASA / JAXA	Approved	Feb 2014	May 2017	3-year nominal mission life, 5-year goal. Study of global precipitation, evaporation, and cycling of water are changing. The mission comprises a primary spacecraft with active and passive microwave instruments, and a number of 'constellation spacecraft' with passive microwave instruments.	GMI, DPR	Type: Inclined, non-sun-synchronous Altitude: 407 km Period: 95 mins Inclination: 65 deg Repeat cycle: LST: Longitude (if geo): Asc/desc: TBD URL: gpm.gsfc.nasa.gov, www.eorc.jaxa.jp/GPM/

GRACE Gravity Recovery and Climate Experiment NASA / DLR	Currently being flown	19 Mar 2002	Oct 2015	5-year nominal mission life, currently in extended operations. Extremely high precision gravity measurements for use in construction of gravity field models. GRACE consists of two satellites (A, B) serving one mission.	GRACE instrument	Type: Inclined, non-sun-synchronous Altitude: 400 km Period: 94 mins Inclination: 89 deg Repeat cycle: LST: Longitude (if geo): Asc/desc: TBD URL: www.csr.utexas.edu/grace/
GRACE FO Gravity Recovery and Climate Experiment - Follow-on NASA	Planned	2017	2022	5-year nominal mission life, currently in extended operations. Extremely high precision gravity measurements for use in construction of gravity field models. GRACE consists of two satellites (A, B) serving one mission.	GRACE instrument, LRI, MWI	Type: Inclined, non-sun-synchronous Altitude: 500 km Period: 90 mins Inclination: 89 deg Repeat cycle: LST: Longitude (if geo): Asc/desc: TBD URL:
GRACE-II Gravity Recovery and Climate Experiment NASA	Considered	2030	2033	Phase-3 DS Mission, launch order unknown, 3-year nominal mission. High temporal resolution gravity fields for tracking large scale water movement.	GRACE instrument	Type: Inclined, non-sun-synchronous Altitude: Period: Inclination: Repeat cycle: LST: Longitude (if geo): Asc/desc: TBD URL: eospso.gsfc.nasa.gov/eos_homepage/mission_profiles/show_mission.php?id=83
Himawari-8 JMA	Planned	2014	2029	Meteorology, environmental monitoring	AHI, Himawari Comms, Himawari DCS	Type: Geostationary Altitude: 36000 km Period: Inclination: Repeat cycle: LST: Longitude (if geo): -140 Asc/desc: N/A URL: mscweb.kishou.go.jp/himawari89/index.html
Himawari-9 JMA	Planned	2016	2031	Meteorology, environmental monitoring	AHI, Himawari Comms, Himawari DCS	Type: Geostationary Altitude: 36000 km Period: Inclination: Repeat cycle: LST: Longitude (if geo): -140 Asc/desc: N/A URL: mscweb.kishou.go.jp/himawari89/index.html
HJ-1A Disaster and Environment Monitoring and Forecast Small Satellite Constellation A CRESDA / CAST	Currently being flown	06 Sep 2008	Sep 2014	Disaster and environment monitoring and forecasting.	CCD (HJ), HSI (HJ-1A)	Type: Sun-synchronous Altitude: 649 km Period: Inclination: 97.9 deg Repeat cycle: 31 days LST: 10:30 Longitude (if geo): Asc/desc: Descending URL: www.cresda.com/
HJ-1B Disaster and Environment Monitoring and Forecast Small Satellite Constellation B CRESDA / CAST	Currently being flown	06 Sep 2008	Sep 2014	Disaster and environment monitoring and forecasting.	CCD (HJ), IR (HJ-1B)	Type: Sun-synchronous Altitude: 649 km Period: Inclination: 97.9 deg Repeat cycle: 31 days LST: 10:30 Longitude (if geo): Asc/desc: Descending URL: www.cresda.com/
HJ-1C Disaster and Environment Monitoring and Forecast Small Satellite Constellation C CRESDA / CAST	Currently being flown	19 Nov 2012	Nov 2014	Disaster and environment monitoring and forecasting.	S-Band SAR	Type: Sun-synchronous Altitude: 499 km Period: Inclination: 97.3 deg Repeat cycle: 31 days LST: 6:00 Longitude (if geo): Asc/desc: Descending URL: http://www.cresda.com/
HY-2A Ocean dynamics satellite A NSOAS / CAST	Currently being flown	16 Aug 2011	Dec 2013	Detecting ocean surface temperature, wind field, wave and topography.	DORIS-NG, RAD, SCAT, ALT	Type: Sun-synchronous Altitude: 963 km Period: 104 mins Inclination: 99.3 deg Repeat cycle: 14 days LST: 6:00 Longitude (if geo): Asc/desc: Descending URL: www.naoas.gov.cn/
HY-2B Ocean dynamics satellite B NSOAS / CAST	Planned	2014	2017	Detecting ocean surface temperature, wind field, wave and topography.	RAD, SCAT, ALT	Type: Sun-synchronous Altitude: 963 km Period: Inclination: 99.3 deg Repeat cycle: 14 days LST: 6:00 Longitude (if geo): Asc/desc: Descending URL: www.naoas.gov.cn/
HY-2C Ocean dynamics satellite C NSOAS / CAST	Planned	2015	2018	Detecting ocean surface temperature, wind field, wave and topography.	RAD, SCAT, ALT	Type: Sun-synchronous Altitude: 963 km Period: Inclination: 99.3 deg Repeat cycle: 14 days LST: 6:00 Longitude (if geo): Asc/desc: Descending URL: www.naoas.gov.cn/
HY-2D Ocean dynamics satellite D NSOAS / CAST	Planned	2019	2022	Detecting ocean surface temperature, wind field, wave and topography.	RAD, SCAT, ALT	Type: Sun-synchronous Altitude: 963 km Period: Inclination: 99.3 deg Repeat cycle: 14 days LST: 6:00 Longitude (if geo): Asc/desc: Descending URL: www.naoas.gov.cn/
HY-3A NSOAS / CAST	Planned	2015	2020	Ocean monitoring, environmental protection, coastal zone survey, etc.	WSAR	Type: Sun-synchronous Altitude: Period: Inclination: Repeat cycle: LST: Longitude (if geo): Asc/desc: URL:
HY-3B NSOAS / CAST	Planned	2017	2022	Ocean monitoring, environmental protection, coastal zone survey, etc.	WSAR	Type: Sun-synchronous Altitude: Period: Inclination: Repeat cycle: LST: Longitude (if geo): Asc/desc: URL:
HY-3C NSOAS / CAST	Planned	2022	2027	Ocean monitoring, environmental protection, coastal zone survey, etc.	WSAR	Type: Sun-synchronous Altitude: Period: Inclination: Repeat cycle: LST: Longitude (if geo): Asc/desc: URL:
HyspIRI Hyperspectral Infrared Imager NASA	Considered	2020	2023	Phase-2 DS Mission, launch order unknown, 3-year nominal mission. Land surface composition for agriculture and mineral characterization; vegetation types for ecosystem health.	Visible imaging spectrometer (HyspIRI), Multi-spectral thermal infrared imager (HyspIRI)	Type: Sun-synchronous Altitude: 626 km Period: Inclination: 98 deg Repeat cycle: 19 days LST: 11:00 Longitude (if geo): Asc/desc: URL: hyspiri.jpl.nasa.gov/

ICESat-II Ice, Cloud, and Land Elevation Satellite II NASA	Approved	Jul 2016	Oct 2019	Mid-2016 launch expected (after SMAP), 3-year nominal mission life. Continue the assessment of polar ice changes and measure vegetation canopy heights, allowing estimates of biomass and carbon in aboveground vegetation in conjunction with related missions, and allow measurements of solid earth properties.	ATLAS	Type: Inclined, non-sun-synchronous Altitude: 500 km Period: 97 mins Inclination: 92 deg Repeat cycle: 183 days LST: Longitude (if geo): Asc/desc: TBD URL: icesat.gsfc.nasa.gov/index.php
Ingenio CDTI / ESA	Approved	Sep 2015	Sep 2022	Cartography, land use, urban management, water management, agriculture and environmental monitoring, risk management and security.	PAN+MS (RGB+NIR), UVAS	Type: Sun-synchronous Altitude: 685 km Period: 98 mins Inclination: 98 deg Repeat cycle: 49 days LST: 10:30 Longitude (if geo): Asc/desc: Descending URL:
INSAT-3A Indian National Satellite - 3A ISRO	Currently being flown	04 Apr 2003	Apr 2014	Meteorology, data collection and communication, search and rescue.	VHRR, DRT-S&R, CCD camera	Type: Geostationary Altitude: 36000 km Period: Inclination: Repeat cycle: LST: Longitude (if geo): -94 Asc/desc: N/A URL: www.isro.org/
INSAT-3D Indian National Satellite - 3D ISRO	Currently being flown	26 Jul 2013	Jul 2020	Meteorology, data collection and communication, search and rescue.	Imager (INSAT), Sounder (INSAT)	Type: Geostationary Altitude: 36000 km Period: Inclination: Repeat cycle: LST: Longitude (if geo): -93.5 Asc/desc: N/A URL: www.isro.org/
INSAT-3DR Indian National Satellite - 3DR ISRO	Approved	Jun 2019	Jun 2026	Meteorology, data collection and communication, search and rescue.	Imager (INSAT), Sounder (INSAT)	Type: Geostationary Altitude: 36000 km Period: Inclination: Repeat cycle: LST: Longitude (if geo): -93.5 Asc/desc: N/A URL: www.isro.org/
INSAT-3DS Indian National Satellite - 3DS ISRO	Approved	Dec 2022	Dec 2029	Meteorology, data collection and communication, search and rescue.	Imager (INSAT), Sounder (INSAT)	Type: Geostationary Altitude: 36000 km Period: Inclination: Repeat cycle: LST: Longitude (if geo): -93.5 Asc/desc: N/A URL: www.isro.org/
Jason-3 NASA / NOAA / CNES / EUMETSAT	Approved	Mar 2015	Jun 2018	3-year nominal mission life, currently in extended operations. Physical oceanography, geodesy/gravity, climate monitoring, marine meteorology.	LRA, AMR, GPSP, POSEIDON-3B Altimeter	Type: Inclined, non-sun-synchronous Altitude: 1336 km Period: 112.4 mins Inclination: 66 deg Repeat cycle: 10 days LST: Longitude (if geo): Asc/desc: N/A URL:
JPSS-1 Joint Polar Satellite System - 1 NOAA / EUMETSAT / NASA	Approved	Jan 2017	Mar 2024	Launch date under review. Meteorological, climatic, terrestrial, oceanographic, and solar-geophysical applications; global and regional environmental monitoring, search and rescue, data collection.	CrIS, CERES, VIIRS, ATMS, OMPS	Type: Sun-synchronous Altitude: 824 km Period: 101 mins Inclination: 98.75 deg Repeat cycle: 16 days LST: 13:30 Longitude (if geo): Asc/desc: Ascending URL: www.nesdis.noaa.gov/jpss/
JPSS-2 Joint Polar Satellite System - 2 NOAA / EUMETSAT / NASA	Approved	Oct 2021	Jul 2027	Launch date under review. Meteorological, climatic, terrestrial, oceanographic, and solar-geophysical applications; global and regional environmental monitoring, search and rescue, data collection. Note that free-flyer options are being considered for the A-DCS4 and SARSAT instruments, though these are considered part of the JPSS system.	CrIS, VIIRS, ATMS, OMPS	Type: Sun-synchronous Altitude: 833 km Period: 101 mins Inclination: 98.75 deg Repeat cycle: 16 days LST: 13:30 Longitude (if geo): Asc/desc: Ascending URL: www.nesdis.noaa.gov/jpss/
KALPANA-1 Meteorological Satellite ISRO	Currently being flown	12 Sep 2002	Dec 2013	Meteorological applications.	VHRR, DRT-S&R	Type: Geostationary Altitude: 36000 km Period: Inclination: Repeat cycle: LST: Longitude (if geo): -83 Asc/desc: N/A URL: www.isro.org/insat2b.htm
Kanopus-V N1 Kanopus-V Environmental Satellite N1 ROSKOSMOS / ROSHYDROMET	Currently being flown	22 Jul 2012	Jul 2019	Land surface, disaster monitoring.	PSS, MSS (Kanonpus), MSU-200	Type: Sun-synchronous Altitude: 600 km Period: 98 mins Inclination: 98 deg Repeat cycle: 17 days LST: Longitude (if geo): Asc/desc: Ascending URL: planet.iitp.ru
Kanopus-V N2 Kanopus-V Environmental Satellite N2 ROSKOSMOS / ROSHYDROMET	Considered	2014	2018	Land surface, disaster monitoring.	PSS, MSS (Kanonpus), MSU-200	Type: Sun-synchronous Altitude: 600 km Period: Inclination: 98 deg Repeat cycle: LST: Longitude (if geo): Asc/desc: Ascending URL: planet.iitp.ru
KOMPSAT-2 Korea Multi-Purpose Satellite -2 KARI	Currently being flown	27 Jul 2006	Jul 2015	Cartography, land use and planning, disaster monitoring.	MSC	Type: Sun-synchronous Altitude: 685 km Period: 98.5 mins Inclination: 98.1 deg Repeat cycle: 28 days LST: 10:50 Longitude (if geo): Asc/desc: Ascending URL: kompsat.kari.re.kr/english/index.asp
KOMPSAT-3 Korea Multi-Purpose Satellite -3 KARI / DLR	Currently being flown	18 May 2012	May 2016	Cartography, land use and planning, disaster monitoring.	AEISS	Type: Sun-synchronous Altitude: 685 km Period: 98.5 mins Inclination: Repeat cycle: 28 days LST: 10:50 Longitude (if geo): Asc/desc: Ascending URL: kompsat.kari.re.kr/english/index.asp
KOMPSAT-3A Korea Multi-Purpose Satellite -3A KARI / DLR	Approved	May 2014	May 2018	Cartography, land use and planning, disaster monitoring.	AEISS-A	Type: Sun-synchronous Altitude: 528 km Period: 98.5 mins Inclination: Repeat cycle: 28 days LST: Longitude (if geo): Asc/desc: Ascending URL:
KOMPSAT-5 Korea Multi-Purpose Satellite -5 KARI	Currently being flown	22 Aug 2013	Aug 2017	Cartography, land use and planning, disaster monitoring.	COSI	Type: Sun-synchronous Altitude: 550 km Period: 98.5 mins Inclination: Repeat cycle: 28 days LST: 6:00 Longitude (if geo): Asc/desc: Ascending URL: kompsat.kari.re.kr/english/index.asp

L-band SAR NASA / CSA / ISRO	Considered	2021	2024	3-year mission to study solid earth deformation (earthquakes, volcanoes, landslides), changes in ice (glaciers, sea ice) and changes in vegetation biomass	L-band SAR, S-band SAR	Type: Sun-synchronous Altitude: Period: 100 mins Inclination: Repeat cycle: 12 days LST: Longitude (if geo): Asc/desc: Ascending URL: desdyni.jpl.nasa.gov
LAGEOS-1 Laser Geodynamics Satellite - 1 ASI	Currently being flown	04 May 1976	May 2052	Geodesy, crustal motion and gravity field measurements by laser ranging.	LRA (LAGEOS)	Type: Inclined, non-sun-synchronous Altitude: 5900 km Period: 226 mins Inclination: 110 deg Repeat cycle: LST: Longitude (if geo): Asc/desc: N/A URL: www.asi.it
LAGEOS-2 Laser Geodynamics Satellite - 2 ASI	Currently being flown	22 Oct 1992	Oct 2052	Geodesy, crustal motion and gravity field measurements by laser ranging.	LRA (LAGEOS)	Type: Inclined, non-sun-synchronous Altitude: 5800 km Period: 223 mins Inclination: 52.6 deg Repeat cycle: LST: Longitude (if geo): Asc/desc: N/A URL: www.asi.it
Landsat 7 USGS / NASA	Currently being flown	17 Apr 1999	Jan 2017	5-year nominal mission life, currently in extended operations. Earth resources, land surface, environmental monitoring, agriculture and forestry, disaster monitoring and assessment, ice and snow cover.	ETM+	Type: Sun-synchronous Altitude: 705 km Period: 98.9 mins Inclination: 98.2 deg Repeat cycle: 16 days LST: 10:05 Longitude (if geo): Asc/desc: Descending URL: landsat.usgs.gov/, ldcm.nasa.gov/
Landsat 8 USGS / NASA	Currently being flown	13 Feb 2013	May 2023	5-year nominal mission life. Earth resources, land surface, environmental monitoring, agriculture and forestry, disaster monitoring and assessment, ice and snow cover.	OLI, TIRS	Type: Sun-synchronous Altitude: 705 km Period: 99 mins Inclination: 98.2 deg Repeat cycle: 16 days LST: 10:00 Longitude (if geo): Asc/desc: Descending URL: landsat.usgs.gov/, ldcm.nasa.gov/
LARES LAser RElativity Satellite ASI	Currently being flown	13 Feb 2012	Feb 2052	Scientific objectives are the measurement of the dragging of inertial frames due to the Earth's angular momentum, or Lense-Thirring effect, and a high precision test of the Earth's gravitomagnetic field with accuracy of the order of a few percent. Gravitomagnetic field and dragging of inertial frames are predictions of Einstein's theory of General Relativity. In addition, LARES will allow other measurements in geodesy and geodynamics.	LCCRA	Type: Inclined, non-sun-synchronous Altitude: 1450 km Period: 99.1 mins Inclination: 71 deg Repeat cycle: LST: Not defined Longitude (if geo): Asc/desc: Ascending URL: www.asi.it
LIST Lidar Surface Topography NASA	Considered	2030	2033	Phase-3 DS Mission, launch order unknown, 3-year nominal mission. Land surface topography for landslide hazards and water runoff.	Laser altimeter (LIST)	Type: Sun-synchronous Altitude: Period: Inclination: Repeat cycle: 365 days LST: Longitude (if geo): Asc/desc: URL: decadal.gsfc.nasa.gov/list.html
MEGHA-TROPIQUES CNES / ISRO	Currently being flown	12 Oct 2011	Jan 2015	Study of the inter-tropical zone and its convective systems (water and energy cycles).	ScaRaB, SAPHIR, MADRAS, ROSA	Type: Inclined, non-sun-synchronous Altitude: 867 km Period: 102.16 mins Inclination: 20 deg Repeat cycle: LST: Longitude (if geo): Asc/desc: Ascending URL: smsc.cnes.fr/MEGHAT/
MERLIN Methane Remote Sensing Lidar Mission CNES / DLR	Planned	2017	2020	Global atmospheric methane concentration.	IPDA LIDAR	Type: Sun-synchronous Altitude: 500 km Period: 90 mins Inclination: Repeat cycle: 28 days LST: Longitude (if geo): Asc/desc: Ascending URL: www.dlr.de/rd/desktopdefault.aspx/tabid-2440/3586_read-31672/
Meteor-M N1 Meteor-M N1 Meteorological Satellite ROSHYDROMET / ROSKOSMOS	Currently being flown	17 Sep 2009	Sep 2014	Hydrometeorology, climatology, heliogeophysics, DCS.	MTVZA, MSU-MR, DCS , KMSS, GGAK-M, Severjanin	Type: Sun-synchronous Altitude: 820 km Period: 102 mins Inclination: 98.79 deg Repeat cycle: 37 days LST: 09:30 Longitude (if geo): Asc/desc: Ascending URL: planet.iitp.ru
Meteor-M N2 Meteor-M Meteorological Satellite N2 ROSHYDROMET / ROSKOSMOS	Approved	Mar 2014	Mar 2019	Hydrometeorology, climatology, heliogeophysics, DCS.	MTVZA, IKFS-2, MSU-MR, DCS , KMSS, GGAK-M, Severjanin	Type: Sun-synchronous Altitude: 835 km Period: 102 mins Inclination: 98.7 deg Repeat cycle: 37 days LST: 09:30 Longitude (if geo): Asc/desc: Ascending URL: planet.iitp.ru
Meteor-M N2-1 Meteor-M Meteorological Satellite N2-1 ROSHYDROMET / ROSKOSMOS	Approved	Dec 2014	Dec 2019	Hydrometeorology, climatology, heliogeophysics, DCS.	MTVZA, IKFS-2, MSU-MR, DCS , KMSS, GGAK-M, Severjanin	Type: Sun-synchronous Altitude: 835 km Period: 102 mins Inclination: 98.7 deg Repeat cycle: 37 days LST: TBD Longitude (if geo): Asc/desc: Ascending URL: planet.iitp.ru
Meteor-M N2-2 Meteor-M Meteorological Satellite N2-2 ROSHYDROMET / ROSKOSMOS	Approved	Dec 2015	Dec 2020	Hydrometeorology, climatology, heliogeophysics, DCS.	MTVZA, IKFS-2, MSU-MR, DCS , KMSS, GGAK-M, Severjanin	Type: Sun-synchronous Altitude: 835 km Period: 102 mins Inclination: 98.7 deg Repeat cycle: 37 days LST: TBD Longitude (if geo): Asc/desc: Ascending URL: planet.iitp.ru
Meteor-M N3 Meteor-M Oceanographical Satellite N3 ROSHYDROMET / ROSKOSMOS	Approved	Dec 2016	Dec 2021	Oceanography, hydrometeorology, climatology.	DCS , SAR, Radiomet, OCS, CZS, Scatterometer (Meteor)	Type: Sun-synchronous Altitude: 835 km Period: 102 mins Inclination: 98.7 deg Repeat cycle: 37 days LST: TBD Longitude (if geo): Asc/desc: Ascending URL: planet.iitp.ru
Meteor-MP N1 Meteor-MP Meteorological Satellite N1 ROSHYDROMET / ROSKOSMOS	Planned	2017	2022	Hydrometeorology, climatology, heliogeophysics, DCS.	Advanced MSU-MR, Advanced KMSS, Advanced IKFS-2, Advanced MTVZA, Advanced Scatterometer , Advanced SAR , Advanced Radiomet, Advanced DCS , Advanced GGAK-M, TGSP	Type: Sun-synchronous Altitude: 830 km Period: Inclination: 98.7 deg Repeat cycle: LST: 21:30 Longitude (if geo): Asc/desc: URL: planet.iitp.ru
Meteor-MP N2 Meteor-MP Meteorological Satellite N2 ROSHYDROMET / ROSKOSMOS	Planned	2018	2023	Hydrometeorology, climatology, heliogeophysics, DCS.	Advanced MSU-MR, Advanced KMSS, Advanced IKFS-2, Advanced MTVZA, Advanced Scatterometer , Advanced SAR , Advanced Radiomet, Advanced DCS , Advanced GGAK-M, TGSP	Type: Sun-synchronous Altitude: 836 km Period: Inclination: 98.7 deg Repeat cycle: LST: 9:30 Longitude (if geo): Asc/desc: URL: planet.iitp.ru

Meteor-MP N3 Meteor-MP Meteorological Satellite N3 ROSHYDROMET / ROSKOSMOS	Planned	2019	2024	Hydrometeorology, climatology, heliogeophysics, DCS.	Advanced MSU-MR, Advanced KMSS, Advanced IKFS-2, Advanced MTVZA, Advanced Scatterometer , Advanced SAR , Advanced Radiomet, Advanced DCS , Advanced GGAK-M, TGSP	Type: Sun-synchronous Altitude: Period: Inclination: Repeat cycle: LST: Longitude (if geo): Asc/desc: URL: planet.iitp.ru
Meteosat-10 Meteosat Second Generation-3 EUMETSAT / ESA	Currently being flown	05 Jul 2012	Jun 2022	Meteorology, climatology, atmospheric dynamics/water and energy cycles. Meteosat 1-7 are first generation. Meteosat 8-11 are second generation and known as MSG in the development phase.	MSG Comms, SEVIRI, GERB	Type: Geostationary Altitude: 36000 km Period: Inclination: Repeat cycle: LST: Longitude (if geo): 0 Asc/desc: N/A URL: www.eumetsat.int/Home/Main/Satellites/index.htm?l=en?
Meteosat-11 Meteosat Second Generation-4 EUMETSAT / ESA	Approved	Jan 2015	Jan 2023	Meteorology, climatology, atmospheric dynamics/water and energy cycles. Meteosat 1-7 are first generation. Meteosat 8-11 are second generation and known as MSG in the development phase.	MSG Comms, SEVIRI, GERB	Type: Geostationary Altitude: 36000 km Period: Inclination: Repeat cycle: LST: Longitude (if geo): 0 Asc/desc: N/A URL: www.eumetsat.int/Home/Main/Satellites/index.htm?l=en?
Meteosat-7 EUMETSAT / ESA	Currently being flown	02 Sep 1997	Dec 2016	Meteorology, climatology, atmospheric dynamics/water and energy cycles. Meteosat 1-7 are first generation. Meteosat 8-11 are second generation and known as MSG in the development phase.	Meteosat Comms, MVIRI	Type: Geostationary Altitude: 36000 km Period: Inclination: Repeat cycle: LST: Longitude (if geo): 0 Asc/desc: N/A URL: www.eumetsat.int/Home/Main/Satellites/index.htm?l=en?
Meteosat-8 Meteosat Second Generation-1 EUMETSAT / ESA	Currently being flown	22 Aug 2002	Dec 2019	Meteorology, climatology, atmospheric dynamics/water and energy cycles. Meteosat 1-7 are first generation. Meteosat 8-11 are second generation and known as MSG in the development phase.	MSG Comms, SEVIRI, GERB	Type: Geostationary Altitude: 36000 km Period: Inclination: Repeat cycle: LST: Longitude (if geo): 0 Asc/desc: N/A URL: www.eumetsat.int/Home/Main/Satellites/index.htm?l=en?
Meteosat-9 Meteosat Second Generation-2 EUMETSAT / ESA	Currently being flown	22 Dec 2005	Dec 2021	Meteorology, climatology, atmospheric dynamics/water and energy cycles. Meteosat 1-7 are first generation. Meteosat 8-11 are second generation and known as MSG in the development phase.	MSG Comms, SEVIRI, GERB	Type: Geostationary Altitude: 36000 km Period: Inclination: Repeat cycle: LST: Longitude (if geo): 0 Asc/desc: N/A URL: www.eumetsat.int/Home/Main/Satellites/index.htm?l=en?
Metop-A Meteorological Operational Polar Satellite - A EUMETSAT / NOAA / CNES / ESA	Currently being flown	19 Oct 2006	Dec 2013	Meteorology, climatology.	SEM (POES), ARGOS, S&R (NOAA), MHS, IASI, GRAS, GOME-2, ASCAT, AMSU-A, AVHRR/3, HIRS/4	Type: Sun-synchronous Altitude: 840 km Period: 107.1 mins Inclination: 98.8 deg Repeat cycle: 29 days LST: 9:30 Longitude (if geo): Asc/desc: Descending URL: www.eumetsat.int/Home/Main/Satellites/index.htm?l=en?
Metop-B Meteorological Operational Polar Satellite - B EUMETSAT / NOAA / CNES / ESA	Currently being flown	17 Sep 2012	Sep 2017	Meteorology, climatology.	SEM (POES), ARGOS, S&R (NOAA), MHS, IASI, GRAS, GOME-2, ASCAT, AMSU-A, AVHRR/3, HIRS/4	Type: Sun-synchronous Altitude: 840 km Period: 101.7 mins Inclination: 98.8 deg Repeat cycle: 29 days LST: 9:30 Longitude (if geo): Asc/desc: N/A URL: www.eumetsat.int/Home/Main/Satellites/index.htm?l=en?
Metop-C Meteorological Operational Polar Satellite - C EUMETSAT / NOAA / CNES / ESA	Approved	Oct 2017	Dec 2021	Meteorology, climatology.	SEM (POES), ARGOS, MHS, IASI, GRAS, GOME-2, ASCAT, AMSU-A, AVHRR/3, A-DCS4	Type: Sun-synchronous Altitude: 840 km Period: 101.7 mins Inclination: 98.8 deg Repeat cycle: 29 days LST: 9:30 Longitude (if geo): Asc/desc: N/A URL: www.eumetsat.int/Home/Main/Satellites/index.htm?l=en?
MTG-I1 (imaging) Meteosat Third Generation - Imaging Satellite 1 EUMETSAT / ESA	Approved	Dec 2018	Jun 2027	Meteorology, climatology, Atmospheric dynamics/water and energy cycles.	FCI, LI	Type: Geostationary Altitude: 36000 km Period: Inclination: Repeat cycle: LST: Longitude (if geo): 0 Asc/desc: N/A URL: www.eumetsat.int/Home/Main/Satellites/index.htm?l=en?
MTG-I2 (imaging) Meteosat Third Generation - Imaging Satellite 2 EUMETSAT / ESA	Approved	Jun 2023	Dec 2031	Meteorology, climatology, Atmospheric dynamics/water and energy cycles.	FCI, LI	Type: Geostationary Altitude: 36000 km Period: Inclination: Repeat cycle: LST: Longitude (if geo): 0 Asc/desc: N/A URL: www.eumetsat.int/Home/Main/Satellites/index.htm?l=en?
MTG-I3 (imaging) Meteosat Third Generation - Imaging Satellite 3 EUMETSAT / ESA	Approved	Jun 2026	Dec 2034	Meteorology, climatology, Atmospheric dynamics/water and energy cycles.	FCI, LI	Type: Geostationary Altitude: 36000 km Period: Inclination: Repeat cycle: LST: Longitude (if geo): 0 Asc/desc: N/A URL: www.eumetsat.int/Home/Main/Satellites/index.htm?l=en?
MTG-I4 (imaging) Meteosat Third Generation - Imaging Satellite 4 EUMETSAT / ESA	Approved	Jun 2031	Dec 2039	Meteorology, climatology, Atmospheric dynamics/water and energy cycles.	FCI, LI	Type: Geostationary Altitude: 36000 km Period: Inclination: Repeat cycle: LST: Longitude (if geo): 0 Asc/desc: N/A URL: www.eumetsat.int/Home/Main/Satellites/index.htm?l=en?
MTG-S1 (sounding) Meteosat Third Generation S1 Sounding Satellite 1 EUMETSAT / EC / ESA	Approved	Dec 2020	Jun 2029	Supporting European atmospheric composition and air quality monitoring services. MTG S1 carries the Sentinel-4 A mission.	UVN, IRS	Type: Geostationary Altitude: Period: Inclination: Repeat cycle: LST: Longitude (if geo): 0 Asc/desc: N/A URL: www.eumetsat.int/Home/Main/Satellites/index.htm?l=en?
MTG-S2 (sounding) Meteosat Third Generation S2 Sounding Satellite 2 EUMETSAT / EC / ESA	Approved	Dec 2028	Jun 2037	Supporting European atmospheric composition and air quality monitoring services. MTG S2 carries the Sentinel-4 B mission.	UVN, IRS	Type: Geostationary Altitude: 36000 km Period: Inclination: Repeat cycle: LST: Longitude (if geo): 0 Asc/desc: N/A URL: www.eumetsat.int/Home/Main/Satellites/index.htm?l=en?

MTSAT-1R Multi-functional Transport Satellite JMA / JCAB	Currently being flown	26 Feb 2005	Jan 2015	Meteorology, aeronautical applications. As of 2010 satellite on stand-by operational.	MTSAT Comms, JAMI/MTSAT-1R, MTSAT DCS	Type: Geostationary Altitude: 36000 km Period: Inclination: Repeat cycle: LST: Longitude (if geo): -140 Asc/desc: N/A URL:
MTSAT-2 Multi-functional Transport Satellite JMA / JCAB	Currently being flown	18 Feb 2006	Jan 2017	Meteorology, aeronautical applications.	IMAGER/MTSAT-2, MTSAT Comms, MTSAT DCS	Type: Geostationary Altitude: 36000 km Period: Inclination: Repeat cycle: LST: Longitude (if geo): -145 Asc/desc: N/A URL:
NigeriaSat-2 NASRDA	Currently being flown	17 Aug 2011	Aug 2018	Small satellite mission with technical and scientific objectives (environmental) monitoring.	NigeriaSat Medium and High Resolution	Type: Sun-synchronous Altitude: 700 km Period: 97 mins Inclination: 98 deg Repeat cycle: 4 days LST: Longitude (if geo): Asc/desc: Descending URL: www.nasrda.net
NigeriaSat-X NASRDA	Currently being flown	17 Aug 2011	Aug 2018	Small satellite mission with technical and scientific objectives (capability demonstration).	NigeriaSat Medium Resolution	Type: Sun-synchronous Altitude: 700 km Period: 97 mins Inclination: 98 deg Repeat cycle: LST: 10:15 Longitude (if geo): Asc/desc: Descending URL: www.nasrda.net
NMP EO-1 New Millenium Program Earth Observing-1 NASA	Currently being flown	23 Nov 2000	Oct 2014	1.5-year nominal mission life, currently in extended operations. Land surface, earth resources.	ALI, Hyperion, LEISA AC	Type: Sun-synchronous Altitude: 690 km Period: 99 mins Inclination: 98.2 deg Repeat cycle: 16 days LST: 10:00 Longitude (if geo): Asc/desc: Descending URL: eo1.gsfc.nasa.gov/
NOAA-15 National Oceanic and Atmospheric Administration - 15 NOAA	Currently being flown	01 May 1998	Dec 2013	Meteorology, agriculture and forestry, environmental monitoring, climatology, physical oceanography, volcanic eruption monitoring, ice and snow cover, total ozone studies, space environment, solar flux analysis, search and rescue.	ARGOS, S&R (NOAA), ATOVS (HIRS/3 + AMSU + AVHRR/3), AMSU A, HIRS/3, AMSU-B, AVHRR/3, NOAA Comms	Type: Sun-synchronous Altitude: 813 km Period: 101.4 mins Inclination: 98.6 deg Repeat cycle: LST: 7:08 Longitude (if geo): Asc/desc: Descending URL: www.oso.noaa.gov/poes/
NOAA-16 National Oceanic and Atmospheric Administration - 16 NOAA	Currently being flown	21 Sep 2000	Dec 2013	Meteorology, agriculture and forestry, environmental monitoring, climatology, physical oceanography, volcanic eruption monitoring, ice and snow cover, total ozone studies, space environment, solar flux analysis, search and rescue.	SEM (POES), ARGOS, S&R (NOAA), ATOVS (HIRS/3 + AMSU + AVHRR/3), AMSU-A, HIRS/3, SBUV/2, AMSU-B, AVHRR/3, NOAA Comms	Type: Sun-synchronous Altitude: 870 km Period: 102 mins Inclination: 98.8 deg Repeat cycle: LST: 13:54 Longitude (if geo): Asc/desc: Ascending URL: www.oso.noaa.gov/poes/
NOAA-18 National Oceanic and Atmospheric Administration - 18 NOAA	Currently being flown	20 May 2005	Dec 2015	Meteorology, agriculture and forestry, environmental monitoring, climatology, physical oceanography, volcanic eruption monitoring, ice and snow cover, total ozone studies, space environment, solar flux analysis, search and rescue.	SEM (POES), ARGOS, S&R (NOAA), MHS, AMSU-A, SBUV/2, AVHRR/3, NOAA Comms, HIRS/4	Type: Sun-synchronous Altitude: 870 km Period: 102.1 mins Inclination: 98.75 deg Repeat cycle: LST: 14:00 Longitude (if geo): Asc/desc: Ascending URL: www.oso.noaa.gov/poes/
NOAA-19 National Oceanic and Atmospheric Administration - 19 NOAA	Currently being flown	04 Feb 2009	Mar 2016	Meteorology, agriculture and forestry, environmental monitoring, climatology, physical oceanography, volcanic eruption monitoring, ice and snow cover, total ozone studies, space environment, solar flux analysis, search and rescue.	SEM (POES), ARGOS, S&R (NOAA), MHS, SBUV/2, AVHRR/3, NOAA Comms, HIRS/4, A-DCS4, LRIT	Type: Sun-synchronous Altitude: 870 km Period: 102.1 mins Inclination: 98.75 deg Repeat cycle: LST: 14:00 Longitude (if geo): Asc/desc: Ascending URL: www.oso.noaa.gov/poes/
Norsat-1 NSC	Considered	2016	2019		Norsat-1 Instrument	Type: Altitude: Period: Inclination: Repeat cycle: LST: Longitude (if geo): Asc/desc: URL:
OCEANSAT-2 Ocean Satellite-2 ISRO	Currently being flown	24 Sep 2009	Sep 2014	Ocean and atmosphere applications.	OCM, Scatterometer (OCEANSAT), ROSA	Type: Sun-synchronous Altitude: 720 km Period: 99.31 mins Inclination: 98.28 deg Repeat cycle: 2 days LST: 12:00 Longitude (if geo): Asc/desc: Descending URL: www.isro.org/
OCEANSAT-3 Ocean Satellite-3 ISRO	Considered	2017	2022	Ocean and atmosphere applications.	TIR (Oceansat-3/3A), OCM (Oceansat-3/3A)	Type: Sun-synchronous Altitude: 720 km Period: 99.31 mins Inclination: 98.28 deg Repeat cycle: 2 days LST: 12:00 Longitude (if geo): Asc/desc: Descending URL: www.isro.org/
OCEANSAT-3A Ocean Satellite-3A ISRO	Considered	2020	2025	Ocean and atmosphere applications.	TIR (Oceansat-3/3A), OCM (Oceansat-3/3A)	Type: Sun-synchronous Altitude: 720 km Period: 99.31 mins Inclination: 98.28 deg Repeat cycle: 2 days LST: Longitude (if geo): Asc/desc: Descending URL: www.isro.org/
OCO-2 Orbiting Carbon Observatory-2 NASA	Approved	Jul 2014	Oct 2017	High resolution carbon dioxide measurements to characterize sources and sinks on regional scales and quantify their variability over the seasonal cycle.	Spectrometer (OCO-2)	Type: Sun-synchronous Altitude: 705 km Period: 98.8 mins Inclination: 98.2 deg Repeat cycle: LST: 13:25 Longitude (if geo): Asc/desc: Ascending URL: oco.jpl.nasa.gov/
OCO-3 Orbiting Carbon Observatory-3 NASA	Planned	2016	2020	High resolution carbon dioxide measurements to characterize sources and sinks on regional scales and quantify their variability over the seasonal cycle.	Spectrometer (OCO-3)	Type: Altitude: 410 km Period: 93 mins Inclination: 51.6 deg Repeat cycle: LST: Longitude (if geo): Asc/desc: Ascending URL:
Odin SNSB / TEKES / CNES / CSA	Currently being flown	20 Feb 2001	Dec 2014	Atmospheric research, stratospheric ozone chemistry, mesospheric ozone science, summer mesospheric science.	OSIRIS, SMR	Type: Sun-synchronous Altitude: 590 km Period: 97.6 mins Inclination: 97.8 deg Repeat cycle: LST: 18:00 Longitude (if geo): Asc/desc: Ascending URL: www.ohb-sweden.se/odin

OPSIS OPtical System for Imagery and Surveillance ASI	Planned	2017	2022	Land use, risk, agriculture and forestry, topographic mapping and cartography, vegetation and agriculture, natural resources, security, cultural heritage.	VHR PAN Camera and MS Camera	Type: Sun-synchronous Altitude: Period: Inclination: Repeat cycle: LST: Longitude (if geo): Asc/desc: TBD URL:
Ørsted (Oersted) DNSC / CNES	Currently being flown	21 Nov 1999	Dec 2013	Earth magnetic field mapping.	Overhauser Magnetometer, CSC FVM, SI, GPSRO (Oersted)	Type: Inclined, non-sun-synchronous Altitude: 655 km Period: 100 mins Inclination: 96.5 deg Repeat cycle: LST: Longitude (if geo): Asc/desc: TBD URL: web.dmi.dk/projects/oersted/
OSTM (Jason-2) Ocean Surface Topography Mission NASA / NOAA / CNES / EUMETSAT	Currently being flown	22 Jun 2008	Oct 2015	3-year nominal mission life. Physical oceanography, geodesy/gravity, climate monitoring, marine meteorology.	LRA, JMR, DORIS-NG, POSEIDON-3, AMR, GPSP	Type: Inclined, non-sun-synchronous Altitude: 1336 km Period: 112.4 mins Inclination: 66 deg Repeat cycle: 10 days LST: Longitude (if geo): Asc/desc: N/A URL: sealevel.jpl.nasa.gov/mission/ostm.html
PACE Pre-Aerosol, Cloud, and ocean Ecosystems NASA	Considered	2019	2022	Phase-2 DS Mission, launch order unknown, 3-year nominal mission. Aerosol and cloud profiles for climate and water cycle; ocean colour for open ocean biogeochemistry.	Next Gen APS (ACE), Ocean Color Spectrometer, Polarimeter	Type: Sun-synchronous Altitude: 705 km Period: Inclination: 98 deg Repeat cycle: 16 days LST: 12:00 Longitude (if geo): Asc/desc: Ascending URL: decadal.gsfc.nasa.gov/PACE.html
PARASOL Polarization and Anisotropy of Reflectances for Atmospheric Science coupled with Observations from a LIDAR CNES	Currently being flown	18 Dec 2004	Dec 2013	Micro-satellite with the aim of characterisation of the clouds and aerosols microphysical and radiative properties, needed to understand and model the radiative impact of clouds and aerosols.	POLDER-P	Type: Sun-synchronous Altitude: 705 km Period: 98.8 mins Inclination: 98.2 deg Repeat cycle: 16 days LST: 13:30 Longitude (if geo): Asc/desc: TBD URL: smsc.cnes.fr/PARASOL/index.htm
PATH Precipitation and All-weather Temperature and Humidity NASA	Considered	2030	2033	Phase-3 DS Mission, launch order unknown, 3-year nominal mission. High frequency, all-weather temperature and humidity soundings for weather forecasting and SST.	GeoSTAR	Type: Geostationary Altitude: 42000 km Period: Inclination: Repeat cycle: LST: Longitude (if geo): 0 Asc/desc: N/A URL: decadal.gsfc.nasa.gov/path.html
PAZ CDTI	Approved	Oct 2014	Oct 2019	Security, land use, urban management, environmental monitoring, risk management.	Paz SAR-X	Type: Sun-synchronous Altitude: 514 km Period: 95 mins Inclination: 97.44 deg Repeat cycle: 11 days LST: 18:00 Longitude (if geo): Asc/desc: Ascending URL: www.hisdesat.es
PCW-1 Polar Communications and Weather-1 CSA	Planned	2018	2028	Continuous meteorological observation and communications service to the Arctic.	PCWMP, PCW PHEOS - Solar-Terrestrial, PCW PHEOS - Atmospheric	Type: Highly elliptical Altitude: Period: 718 mins Inclination: 63.4 deg Repeat cycle: 1 days LST: N/A Longitude (if geo): Asc/desc: N/A URL: www.asc-csa.gc.ca/eng/satellites/pcw/default.asp
PCW-2 Polar Communications and Weather-2 CSA	Planned	2018	2028	Continuous meteorological observation and communications service to the Arctic.	PCWMP, PCW PHEOS - Solar-Terrestrial, PCW PHEOS - Atmospheric	Type: Highly elliptical Altitude: Period: 718 mins Inclination: 63.4 deg Repeat cycle: 1 days LST: N/A Longitude (if geo): Asc/desc: N/A URL: www.asc-csa.gc.ca/eng/satellites/pcw/default.asp
PICARD CNES	Currently being flown	15 Jun 2010	Dec 2013	Simultaneous measurements of solar diameter, differential rotation, solar constant, and variability.	SODISM, SOVAP, PREMOS	Type: TBD Altitude: 725 km Period: 99 mins Inclination: 98 deg Repeat cycle: LST: 6:00 Longitude (if geo): Asc/desc: TBD URL: smsc.cnes.fr/PICARD/
Pleiades 1A CNES	Currently being flown	17 Dec 2011	Dec 2016	Cartography, land use, risk, agriculture and forestry, civil planning and mapping, digital terrain models, defence.	HiRI	Type: Sun-synchronous Altitude: 694 km Period: Inclination: Repeat cycle: 26 days LST: 10:15 Longitude (if geo): Asc/desc: Descending URL: smsc.cnes.fr/PLEIADES/Fr/index.htm
Pleiades 1B CNES	Currently being flown	02 Dec 2012	Dec 2017	Cartography, land use, risk, agriculture and forestry, civil planning and mapping, digital terrain models, defence.	HiRI	Type: Sun-synchronous Altitude: 694 km Period: Inclination: Repeat cycle: LST: 10:15 Longitude (if geo): Asc/desc: Descending URL: smsc.cnes.fr/PLEIADES/Fr/index.htm
Polar Free Flyer NOAA / NASA	Planned	2016	2021	Launch date under review. Spacecraft carrying TSIS and user services payloads not accomodated on JPSS 1 or 2	S&R (NOAA), TSIS, A-DCS4	Type: Sun-synchronous Altitude: Period: Inclination: Repeat cycle: LST: Longitude (if geo): Asc/desc: Ascending URL: 'www.nesdis.noaa.gov/jpss/
PRISMA PRecursore IperSpettrale della Missione Applicativa ASI	Approved	Jun 2017	Jun 2022	Land surface, agriculture and forestry, regional geology, land use studies, water resources, vegetation studies, coastal studies and soils.	HYC, PAN CAMERA	Type: Sun-synchronous Altitude: 615 km Period: 97 mins Inclination: 97.9 deg Repeat cycle: 29 days LST: 10:30 Longitude (if geo): Asc/desc: Descending URL: www.asi.it/en/activity/earth_observation/prisma_
PROBA Project for On-Board Autonomy ESA	Currently being flown	22 Oct 2001	Dec 2013	PROBA is a technology experiment to demonstrate the on-board autonomy of a generic platform suitable for small scientific or application missions. A number of earth observation instruments are included. CHRIS - a hyperspectral imager provides data related to Earth Resources science and applications.	CHRIS	Type: Sun-synchronous Altitude: 615 km Period: 96.97 mins Inclination: 97.9 deg Repeat cycle: 7 days LST: 10:30 Longitude (if geo): Asc/desc: Descending URL: earth.esa.int/proba/
PROBA-V ESA / BELSPO	Currently being flown	07 May 2013	May 2016	The PROBA-V mission's main multispectral imager extends the 15-year dataset of Spot-4 & Spot-5's Vegetation instrument, delivering global coverage every two days for uses including climate impact assessments, surface water resource management, agricultural monitoring, and food security estimates.	Vegetation	Type: Sun-synchronous Altitude: 820 km Period: Inclination: 98.73 deg Repeat cycle: 2 days LST: 10:30 to 11:30 Longitude (if geo): Asc/desc: Descending URL: esa.int/proba_missions

QuikSCAT Quick Scatterometer NASA	Currently being flown	21 Jun 1999	Oct 2015	The 3-year nominal QuikSCAT mission life is complete, and it is currently in extended operations. Due to technical failure (the antenna stopped rotating in November 2009), and the instrument no longer collects ocean wind vector data. However it still provides calibration data for other on-orbit scatterometers, which enables the continuation of a climate-quality wind vector dataset. The 2011 NASA Senior Review panel strongly endorsed the continuation of the mission with these modified objectives through 2013.	SeaWinds	Type: Sun-synchronous Altitude: 803 km Period: 101 mins Inclination: 98.6 deg Repeat cycle: LST: 6:00 Longitude (if geo): Asc/desc: Ascending URL: winds.jpl.nasa.gov/missions/quikscat/index.cfm
RADARSAT C-1 RADARSAT CONSTELLATION-1 CSA	Approved	Jul 2018	Nov 2025	Ecosystem monitoring, maritime surveillance, disaster management.	SAR (RCM), AIS (RCM)	Type: Sun-synchronous Altitude: 600 km Period: 96.4 mins Inclination: 97.7 deg Repeat cycle: 12 days LST: 18:00 Longitude (if geo): Asc/desc: Ascending URL: www.asc-csa.gc.ca/eng/satellites/radarsat/default.asp
RADARSAT C-2 RADARSAT CONSTELLATION-2 CSA	Approved	Jul 2018	Nov 2025	Ecosystem monitoring, maritime surveillance, disaster management.	SAR (RCM), AIS (RCM)	Type: Sun-synchronous Altitude: 600 km Period: 96.4 mins Inclination: 97.7 deg Repeat cycle: 12 days LST: 18:00 Longitude (if geo): Asc/desc: Ascending URL: www.asc-csa.gc.ca/eng/satellites/radarsat/default.asp
RADARSAT C-3 RADARSAT CONSTELLATION-3 CSA	Approved	Jul 2018	Nov 2025	Ecosystem monitoring, maritime surveillance, disaster management.	SAR (RCM), AIS (RCM)	Type: Sun-synchronous Altitude: 600 km Period: 96.4 mins Inclination: 97.7 deg Repeat cycle: 12 days LST: 18:00 Longitude (if geo): Asc/desc: Ascending URL: www.asc-csa.gc.ca/eng/satellites/radarsat/default.asp
RADARSAT-2 CSA	Currently being flown	14 Dec 2007	Apr 2015	Environmental monitoring, physical oceanography, ice and snow, land surface. Note: Ownership of RADARSAT-2 has been transferred to MDA Corporation. CSA investment in the project is paid back with the data generated by the satellite since it entered operations.	SAR (RADARSAT-2)	Type: Sun-synchronous Altitude: 798 km Period: 100.7 mins Inclination: 98.6 deg Repeat cycle: 24 days LST: 18:00 Longitude (if geo): Asc/desc: Ascending URL: www.asc-csa.gc.ca/eng/satellites/radarsat2/default.asp
RapidEye DLR	Currently being flown	29 Aug 2008	Aug 2019	System of 5 satellites for cartography, land surface, digital terrain models, disaster management, environmental monitoring.	MSI	Type: Sun-synchronous Altitude: 622 km Period: 97 mins Inclination: 98.7 deg Repeat cycle: 1 days LST: 11:00 Longitude (if geo): Asc/desc: Descending URL: www.rapideye.de/
RASAT RASAT Remote Sensing Satellite TUBITAK	Currently being flown	17 Aug 2011	Aug 2014	Cartography, land cover/land use, city planning, disaster mitigation/monitoring, environmental monitoring.	RASAT VIS Panchromatic, RASAT VIS Multispectral	Type: Sun-synchronous Altitude: 700 km Period: 98.8 mins Inclination: 98.21 deg Repeat cycle: 4 days LST: 10:30 Longitude (if geo): Asc/desc: Ascending URL: www.uzay.tubitak.gov.tr/
RESOURCESAT-1 Resource Satellite-1 ISRO	Currently being flown	17 Oct 2003	Dec 2013	Natural resources management, agricultural applications, forestry, etc.	AWiFS, LISS-IV, LISS-III (Resourcesat)	Type: Sun-synchronous Altitude: 817 km Period: 102 mins Inclination: 98.72 deg Repeat cycle: 26 days LST: 10:30 Longitude (if geo): Asc/desc: Descending URL: www.isro.org/
RESOURCESAT-2 Resource Satellite-2 ISRO	Currently being flown	20 Apr 2011	Apr 2016	Natural resources management, agricultural applications, forestry, etc.	AWiFS, LISS-IV, LISS-III (Resourcesat)	Type: Sun-synchronous Altitude: 817 km Period: 102 mins Inclination: 98.72 deg Repeat cycle: 26 days LST: 10:30 Longitude (if geo): Asc/desc: Descending URL: www.isro.org/
RESOURCESAT-2A Resource Satellite-2A ISRO	Considered	2015	2020	Natural resources management, agricultural applications, forestry, etc.	AWiFS, LISS-IV, LISS-III (Resourcesat)	Type: Sun-synchronous Altitude: 817 km Period: 102 mins Inclination: 98.72 deg Repeat cycle: 26 days LST: Longitude (if geo): Asc/desc: Descending URL: www.isro.org/
RESOURCESAT-3 Resource Satellite-3 ISRO	Considered	2021	2025	Natural resources management, agricultural applications, forestry, etc.	ALISS III, ATCOR	Type: Sun-synchronous Altitude: 817 km Period: 102 mins Inclination: 98.72 deg Repeat cycle: 26 days LST: 10:30 Longitude (if geo): Asc/desc: Descending URL: www.isro.org/
Resurs DK 1 Resurs DK Environmental Satellite 1 ROSKOSMOS / ROSHYDROMET	Currently being flown	15 Jun 2006	Dec 2013	Land surface.	Geoton-L1, Pamela, Arina	Type: Inclined, non-sun-synchronous Altitude: 600 km Period: 92 mins Inclination: 70 deg Repeat cycle: 17 days LST: Longitude (if geo): Asc/desc: Ascending URL: planet.iitp.ru
Resurs P N1 Resurs P Environmental Satellite N1 ROSKOSMOS / ROSHYDROMET	Currently being flown	25 Jun 2013	May 2018	Land surface.	Geoton-L1, Pamela, Arina	Type: Altitude: 600 km Period: Inclination: Repeat cycle: LST: Longitude (if geo): Asc/desc: URL:
Resurs P N2 Resurs P Environmental Satellite N2 ROSKOSMOS / ROSHYDROMET	Planned	2015	2020	Land surface.	Geoton-L1, Pamela, Arina	Type: Altitude: 600 km Period: Inclination: Repeat cycle: LST: Longitude (if geo): Asc/desc: URL:
RISAT-1 Radar Imaging Satellite ISRO	Currently being flown	26 Apr 2012	Apr 2017	Land surface, agriculture and forestry, regional geology, land use studies, water resources, vegetation studies, coastal studies and soils - especially during cloud season.	SAR (RISAT)	Type: Sun-synchronous Altitude: 610 km Period: 96.5 mins Inclination: 97.844 deg Repeat cycle: 12 days LST: 6:00 Longitude (if geo): Asc/desc: Descending URL: www.isro.org/
RISAT-1A Radar Imaging Satellite ISRO	Considered	2019	2023	Land surface, agriculture and forestry, regional geology, land use studies, water resources, vegetation studies, coastal studies and soils - especially during cloud season.	SAR (RISAT)	Type: Sun-synchronous Altitude: 610 km Period: 96.5 mins Inclination: 97.844 deg Repeat cycle: 12 days LST: 6:00 Longitude (if geo): Asc/desc: Descending URL: www.isro.org/

RISAT-2 Radar Imaging Satellite ISRO	Currently being flown	20 Apr 2009	Apr 2014	For research and disaster management applications purpose.	SAR-X	Type: Sun-synchronous Altitude: 609 km Period: 97.6 mins Inclination: 96 deg Repeat cycle: LST: 6:00 Longitude (if geo): Asc/desc: Ascending URL: www.isro.org/
SAC-C CONAE	Currently being flown	21 Nov 2000	Jan 2014	Earth observation, studies the structure and dynamics of the Earth's surface, atmosphere, ionosphere and geomagnetic field.	MMRS, HRTC, HSTC, MMP, GOLPE, IST, INES, ICARE, WTE, DCS (SAC-C)	Type: Sun-synchronous Altitude: 705 km Period: 98 mins Inclination: 98.2 deg Repeat cycle: 9 days LST: 10:25 Longitude (if geo): Asc/desc: Descending URL: www.conae.gov.ar/
SAC-D/Aquarius CONAE / NASA	Currently being flown	12 Jun 2011	Jun 2017	Earth observation studies; measurement of ocean surface salinity; atmospheric and environmental parameters.	Lagrange, MWR, HSC, CARMEN-1 (SODAD), NIRST, CARMEN-1 (ICARE), DCS (SAC-D), ROSA, TDP, Aquarius L-Band radiometer, Aquarius L-Band Scatterometer	Type: Sun-synchronous Altitude: 657 km Period: 98 mins Inclination: 98 deg Repeat cycle: 7 days LST: 18:00 Longitude (if geo): Asc/desc: Ascending URL: www.conae.gov.ar/
SAC-E/SABIA_MAR-A CONAE	Planned	2018	2023	Ocean colour measurement (open ocean, coastal and in-land waters) (low & medium spatial resolution), SST, Sea surveillance, urban lights, polar auroras, fires, data collection system.	DCS (SABIA_MAR), HSC, MUS-swir	Type: Sun-synchronous Altitude: 645 km Period: 97.6 mins Inclination: 97.96 deg Repeat cycle: 4 days LST: Longitude (if geo): Asc/desc: Descending URL: www.conae.gov.ar/
SAC-E/SABIA_MAR-B CONAE	Planned	2019	2024	Ocean colour measurement (open ocean, coastal and in-land waters) (low & medium spatial resolution), SST, Sea surveillance, urban lights, polar auroras, fires, data collection system.	DCS (SABIA_MAR), HSC, MUS-uv_vis_nir	Type: Sun-synchronous Altitude: 645 km Period: 97.6 mins Inclination: 97.96 deg Repeat cycle: 4 days LST: Longitude (if geo): Asc/desc: Descending URL: www.conae.gov.ar/
SAGE-III Stratospheric Aerosol and Gas Experiment NASA	Approved	Sep 2014	Jan 2018	Refurbishment of the SAGE-III instrument and of a hexapod pointing platform, and accommodation studies. This mission flies on the ISS.	SAGE-III	Type: Inclined, non-sun-synchronous Altitude: 425 km Period: Inclination: 51 deg Repeat cycle: LST: Longitude (if geo): Asc/desc: URL: www-sage3.larc.nasa.gov/missions/
SAOCOM 1A CONAE / ASI	Approved	Sep 2015	Dec 2019	Earth observation and emergency management with an L-band SAR.	SAR-L	Type: Sun-synchronous Altitude: 620 km Period: 97.2 mins Inclination: 97.89 deg Repeat cycle: 16 days LST: 6:12 Longitude (if geo): Asc/desc: Ascending URL: www.conae.gov.ar/
SAOCOM 1B CONAE / ASI	Approved	Sep 2016	Dec 2020	Earth observation and emergency management with an L-band SAR.	SAR-L	Type: Sun-synchronous Altitude: 620 km Period: 97.2 mins Inclination: 97.89 deg Repeat cycle: 16 days LST: 6:12 Longitude (if geo): Asc/desc: Ascending URL: www.conae.gov.ar/
SAOCOM-2A CONAE	Planned	2019	2024	Earth observation and emergency management with an L-band SAR.	SAR-L	Type: Sun-synchronous Altitude: 620 km Period: Inclination: 98 deg Repeat cycle: 16 days LST: 6:00 Longitude (if geo): Asc/desc: Descending URL: www.conae.gov.ar/
SAOCOM-2B CONAE	Planned	2020	2025	Earth observation and emergency management with an L-band SAR.	SAR-L	Type: Sun-synchronous Altitude: 620 km Period: Inclination: 98 deg Repeat cycle: 16 days LST: 6:00 Longitude (if geo): Asc/desc: Descending URL: www.conae.gov.ar/
SARAL Satellite with ARgos and ALtiKa CNES / ISRO	Currently being flown	25 Feb 2012	Feb 2015	This will provide precise, repetitive global measurements of sea surface height, significant wave heights and wind speed.	ARGOS, AltiKa	Type: Sun-synchronous Altitude: 799 km Period: 100.59 mins Inclination: 98.55 deg Repeat cycle: 35 days LST: 18:00 Longitude (if geo): Asc/desc: Descending URL: smsc.cnes.fr/SARAL/
SARE-1B SARE-1 CONAE	Planned	2014	2017	Segmented architecture development.	SAR components testing	Type: Altitude: Period: Inclination: Repeat cycle: LST: Longitude (if geo): Asc/desc: URL:
SCD-1 Data Collecting Satellite 1 INPE	Currently being flown	09 Feb 1993	Dec 2013	Data collection and communication.	DCS	Type: Inclined, non-sun-synchronous Altitude: 750 km Period: 100 mins Inclination: 25 deg Repeat cycle: LST: Longitude (if geo): Asc/desc: TBD URL: www.inpe.br
SCD-2 Data Collecting Satellite 2 INPE	Currently being flown	22 Oct 1998	Dec 2013	Data collection and communication.	DCS	Type: Inclined, non-sun-synchronous Altitude: 750 km Period: 100 mins Inclination: 25 deg Repeat cycle: LST: Longitude (if geo): Asc/desc: TBD URL: www.inpe.br
SCISAT-1 SCISAT-I/ACE CSA	Currently being flown	12 Aug 2003	Mar 2015	To improve our understanding of the depletion of the ozone layer, particularly over Canada and the Arctic.	ACE-FTS, MAESTRO	Type: Inclined, non-sun-synchronous Altitude: 650 km Period: 97.7 mins Inclination: 74 deg Repeat cycle: 365 days LST: Longitude (if geo): Asc/desc: N/A URL: www.asc-csa.gc.ca/eng/satellites/scisat/default.asp
SCLP Snow and Cold Land Processes NASA	Considered	2030	2033	Phase-3 DS Mission, launch order unknown, 3-year nominal mission. Snow accumulation for fresh water availability.	Ku and X-band radars (SCLP), K band radiometers (SCLP)	Type: Sun-synchronous Altitude: Period: Inclination: Repeat cycle: 15 days LST: Longitude (if geo): Asc/desc: URL: decadal.gsfc.nasa.gov/sclp.html

Sentinel-1 A ESA / EC	Approved	Mar 2014	Jan 2021	Providing continuity of C-band SAR data for operational applications notably in the following areas: monitoring of sea ice zones and the arctic environment, surveillance of marine environment, monitoring of land surface motion risks and mapping in support of humanitarian aid in crisis situations.	C-Band SAR	Type: Sun-synchronous Altitude: 693 km Period: 98.74 mins Inclination: 98.19 deg Repeat cycle: 12 days LST: 18:00 Longitude (if geo): Asc/desc: Ascending URL: www.esa.int/esaLP/LPgmes.html
Sentinel-1 B ESA / EC	Approved	Dec 2015	May 2023	Providing continuity of C-band SAR data for operational applications notably in the following areas: monitoring of sea ice zones and the arctic environment, surveillance of marine environment, monitoring of land surface motion risks and mapping in support of humanitarian aid in crisis situations.	C-Band SAR	Type: Sun-synchronous Altitude: 693 km Period: 98.74 mins Inclination: 98.19 deg Repeat cycle: 12 days LST: 18:00 Longitude (if geo): Asc/desc: Ascending URL: www.esa.int/esaLP/LPgmes.html
Sentinel-1 C ESA / EC	Considered	2019	2026	Providing continuity of C-band SAR data for operational applications notably in the following areas: monitoring of sea ice zones and the arctic environment, surveillance of marine environment, monitoring of land surface motion risks and mapping in support of humanitarian aid in crisis situations.	C-Band SAR	Type: Sun-synchronous Altitude: 693 km Period: 98.74 mins Inclination: 98.19 deg Repeat cycle: 12 days LST: 18:00 Longitude (if geo): Asc/desc: Ascending URL: www.esa.int/esaLP/LPgmes.html
Sentinel-2 A ESA / EC	Approved	Sep 2014	Dec 2021	Supporting land monitoring related services, including: generation of generic land cover maps, risk mapping and fast images for disaster relief, generation of leaf coverage leaf chlorophyll content and leaf water content.	MSI (Sentinel-2)	Type: Sun-synchronous Altitude: 786 km Period: 100.7 mins Inclination: 98.62 deg Repeat cycle: 10 days LST: 10:30 Longitude (if geo): Asc/desc: Descending URL: www.esa.int/esaLP/LPgmes.html
Sentinel-2 B ESA / EC	Approved	Mar 2016	Jun 2023	Supporting land monitoring related services, including: generation of generic land cover maps, risk mapping and fast images for disaster relief, generation of leaf coverage leaf chlorophyll content and leaf water content.	MSI (Sentinel-2)	Type: Sun-synchronous Altitude: 786 km Period: 100.7 mins Inclination: 98.62 deg Repeat cycle: 10 days LST: 10:30 Longitude (if geo): Asc/desc: Descending URL: www.esa.int/esaLP/LPgmes.html
Sentinel-2 C ESA / EC	Considered	2020	2027	Supporting land monitoring related services, including: generation of generic land cover maps, risk mapping and fast images for disaster relief, generation of leaf coverage, leaf chlorophyll content and leaf water content.	MSI (Sentinel-2)	Type: Sun-synchronous Altitude: 786 km Period: 100.7 mins Inclination: 98.62 deg Repeat cycle: 10 days LST: 10:30 Longitude (if geo): Asc/desc: Descending URL: www.esa.int/esaLP/LPgmes.html
Sentinel-3 A ESA / EUMETSAT / EC	Approved	Dec 2014	Apr 2022	Supporting global land and ocean monitoring services, in particular: sea/land colour data and surface temperature; sea surface and land ice topography; coastal zones, inland water and sea ice topography; vegetation products.	OLCI, SLSTR, SRAL	Type: Sun-synchronous Altitude: 814 km Period: 100 mins Inclination: 98.65 deg Repeat cycle: 27 days LST: 10:00 Longitude (if geo): Asc/desc: Descending URL: www.esa.int/esaLP/LPgmes.html
Sentinel-3 B ESA / EUMETSAT / EC	Approved	Aug 2015	Dec 2022	Supporting global land and ocean monitoring services, in particular: sea/land colour data and surface temperature; sea surface and land ice topography; coastal zones, inland water and sea ice topography; vegetation products.	OLCI, SLSTR, SRAL	Type: Sun-synchronous Altitude: 814 km Period: 100 mins Inclination: 98.65 deg Repeat cycle: 27 days LST: 10:00 Longitude (if geo): Asc/desc: Ascending URL: www.esa.int/esaLP/LPgmes.html
Sentinel-3 C ESA / EUMETSAT / EC	Considered	2020	2027	Supporting global land and ocean monitoring services, in particular: sea/land colour data and surface temperature; sea surface and land ice topography; coastal zones, inland water and sea ice topography; vegetation products.	OLCI, SLSTR, SRAL	Type: Sun-synchronous Altitude: 814 km Period: 100 mins Inclination: 98.65 deg Repeat cycle: 27 days LST: 10:00 Longitude (if geo): Asc/desc: Ascending URL: www.esa.int/esaLP/LPgmes.html
Sentinel-4 A ESA / EC	Planned	2018	2027	Supporting European atmospheric composition and air quality monitoring services. The Sentinel-4 A mission is carried on MTG S1.	UVN (Sentinel-4), IRS	Type: Geostationary Altitude: Period: Inclination: Repeat cycle: LST: Longitude (if geo): 0 Asc/desc: N/A URL: www.esa.int/esaLP/LPgmes.html
Sentinel-4 B ESA / EC	Planned	2024	2033	Supporting European atmospheric composition and air quality monitoring services. The Sentinel-4 B mission is carried on MTG S2.	UVN (Sentinel-4), IRS	Type: Geostationary Altitude: Period: Inclination: Repeat cycle: LST: Longitude (if geo): 0 Asc/desc: N/A URL: www.esa.int/esaLP/LPgmes.html
Sentinel-5 ESA	Planned	2019	2026	In early stages of mission definition. Other payloads will be added. The Sentinel-5 mission is carried on EPS-SG-a.	IRS, METimage, UVNS (Sentinel-5)	Type: Sun-synchronous Altitude: Period: Inclination: Repeat cycle: LST: Longitude (if geo): Asc/desc: N/A URL: www.esa.int/esaLP/LPgmes.html
Sentinel-5 precursor ESA / NSO	Approved	Sep 2015	Sep 2020	Supporting global atmospheric composition and air quality monitoring services.	UVNS (Sentinel-5 precursor)	Type: Sun-synchronous Altitude: 824 km Period: 17 mins Inclination: 98.742 deg Repeat cycle: LST: 13:30 Longitude (if geo): Asc/desc: Ascending URL: www.esa.int/esaLP/LPgmes.html
Sich-2 NSAU	Currently being flown	17 Aug 2011	Aug 2015	Land observation.	MSS (Sich), MIRS	Type: Sun-synchronous Altitude: 668 km Period: 98 mins Inclination: 98 deg Repeat cycle: 5 days LST: 10:50 Longitude (if geo): Asc/desc: Descending URL:
SJ-9A CRESDA / CAST	Currently being flown	14 Oct 2012	Sep 2015	Earth resources, environmental monitoring, land surface.	MUX (SJ-9A), PAN (SJ-9A)	Type: Sun-synchronous Altitude: 645 km Period: 97.5 mins Inclination: 97.982 deg Repeat cycle: 69 days LST: 10:30 Longitude (if geo): Asc/desc: Descending URL: http:/www.cresda.com/
SJ-9B CRESDA / CAST	Currently being flown	14 Oct 2012	Sep 2015	Earth resources, environmental monitoring, land surface.	IRS (SJ-9B)	Type: Sun-synchronous Altitude: 645 km Period: 97.5 mins Inclination: 97.982 deg Repeat cycle: 69 days LST: 10:30 Longitude (if geo): Asc/desc: Descending URL: http:/www.cresda.com/

SMAP Soil Moisture Active Passive NASA / CSA	Approved	Nov 2014	Mar 2018	Late 2014 launch expected, 3-year nominal mission life. Global soil moisture and freeze-thaw state mapping.	L-band Radar (SMAP), L-band Radiometer (SMAP)	Type: Sun-synchronous Altitude: 685 km Period: 98.46 mins Inclination: 98.12 deg Repeat cycle: LST: 18:00 Longitude (if geo): Asc/desc: Ascending URL: smap.jpl.nasa.gov/
SMOS Soil Moisture and Ocean Salinity (Earth Explorer Opportunity Mission) ESA / CDTI / CNES	Currently being flown	02 Nov 2009	Apr 2014	Overall objectives are to provide global observations of two crucial variables for modelling the weather and climate, soil moisture and ocean salinity. It will also monitor the vegetation water content, snow cover and ice structure.	MIRAS (SMOS)	Type: Sun-synchronous Altitude: 758 km Period: 100.075 mins Inclination: 98.44 deg Repeat cycle: 23 days LST: 6:00 Longitude (if geo): Asc/desc: Ascending URL: earth.esa.int/SMOS/
SORCE Solar Radiation and Climate Experiment NASA	Currently being flown	27 Jan 2003	Oct 2015	5-year nominal mission life, currently in extended operations. Continues the precise, long-term measurements of total solar irradiance at UV and VNIR wavelengths. Daily measurements of solar UV. Precise measurements of visible solar irradiance for climate studies.	SOLSTICE, SIM, TIM, XPS	Type: Inclined, non-sun-synchronous Altitude: 600 km Period: 90 mins Inclination: 40 deg Repeat cycle: LST: Longitude (if geo): Asc/desc: URL: lasp.colorado.edu/sorce/
SPOT-5 Satellite Pour l'Observation de la Terre - 5 CNES	Currently being flown	04 May 2002	Dec 2014	Cartography, land surface, agriculture and forestry, civil planning and mapping, digital terrain models, environmental monitoring.	HRG, VEGETATION, HRS, DORIS-NG (SPOT)	Type: Sun-synchronous Altitude: 832 km Period: 101 mins Inclination: 98.7 deg Repeat cycle: 26 days LST: 10:30 Longitude (if geo): Asc/desc: Descending URL: www.spotimage.fr/home/system/future/spot5/welcome.htm
STARLETTE CNES	Currently being flown	06 Feb 1975	Dec 2050	Geodesy/gravity study of the Earth's gravitational field and its temporal variations.	Laser Reflectors	Type: Inclined, non-sun-synchronous Altitude: 812 km Period: 104 mins Inclination: 49.83 deg Repeat cycle: LST: Longitude (if geo): Asc/desc: N/A URL:
STELLA CNES	Currently being flown	30 Sep 1993	Dec 2050	Geodesy/gravity study of the Earth's gravitational field and its temporal variations.	Laser Reflectors	Type: Inclined, non-sun-synchronous Altitude: 830 km Period: 101 mins Inclination: 98 deg Repeat cycle: LST: Longitude (if geo): Asc/desc: N/A URL:
Suomi NPP Suomi National Polar-orbiting Partnership NASA / NOAA	Currently being flown	30 Oct 2011	Mar 2017	5-year nominal mission life. Operational polar weather and climate measurements.	CrIS, CERES, VIIRS, ATMS, OMPS	Type: Sun-synchronous Altitude: 824 km Period: 101 mins Inclination: 98.7 deg Repeat cycle: 16 days LST: 13:30 Longitude (if geo): Asc/desc: Ascending URL: jointmission.gsfc.nasa.gov/
Swarm Earth's Magnetic Field and Environment Explorers ESA / CNES / CSA	Approved	Nov 2013	Nov 2016	To provide the best ever survey of the geomagnetic field and its temporal evolution, and gain new insights into improving our knowledge of the Earth's interior and climate.	Laser Reflectors (ESA), ASM, VFM, STR, EFI, ACC, GPS Receiver (Swarm)	Type: Inclined, non-sun-synchronous Altitude: 450 km Period: Inclination: Repeat cycle: LST: Longitude (if geo): Asc/desc: N/A URL: www.esa.int/export/esaLP/swarm.html
SWOT Surface Water Ocean Topography NASA / CNES / CSA	Planned	2020	2023	Phase-2 DS Mission, launch order unknown, 3.3-year nominal mission. Characterize ocean mesoscale and sub-mesoscale circulation at spatial resolutions = 10 km and inventory all terrestrial water bodies with surface area > 250 m2 and rivers with width > 100 m	LRA, AMR, GPSP, Ka-band Radar INterferometer (KaRIN)	Type: Inclined, non-sun-synchronous Altitude: 873 km Period: Inclination: 78 deg Repeat cycle: 22 days LST: Longitude (if geo): Asc/desc: URL: swot.jpl.nasa.gov
TanDEM-X TerraSAR-X Add-on for Digital Elevation Measurements DLR	Currently being flown	21 Jun 2010	Dec 2015	Cartography, land surface, civil planning and mapping, digital terrain models, environmental monitoring.	X-Band SAR	Type: Sun-synchronous Altitude: 514 km Period: 94.85 mins Inclination: 97.4 deg Repeat cycle: 11 days LST: 18:00 Longitude (if geo): Asc/desc: Ascending URL: www.dlr.de/hr/desktopdefault.aspx/tabid-2317/3669_read-5488/
TCTE Total Solar Irradiance (TSI) Calibration Transfer NOAA / NASA	Approved	Nov 2013	Nov 2014		TIM	Type: Altitude: Period: Inclination: Repeat cycle: LST: Longitude (if geo): Asc/desc: URL:
TEMPO Tropospheric Emissions: Monitoring of Pollution NASA	Approved	Nov 2018	Nov 2020	Hourly measurements of air pollution over North America, from Mexico City to the Canadian oil sands, at high spatial resolution. Measurements in ultraviolet and visible wavelengths will provide a suite of products including the key elements of tropospheric air pollution chemistry. Uses a commercial geostationary host spacecraft. Will be part of the first global geostationary constellation for pollution monitoring, along with European and Korean missions now in development.	Spectrometer (TEMPO)	Type: Geostationary Altitude: 35786 km Period: 1436 mins Inclination: Repeat cycle: LST: Longitude (if geo): Asc/desc: N/A URL:
Terra Terra (formerly EOS AM-1) NASA / METI / CSA	Currently being flown	20 Dec 1999	Oct 2015	6-year nominal mission life, currently in extended operations. Atmospheric dynamics/water and energy cycles, atmospheric chemistry, physical and radiative properties of clouds, air-land exchanges of energy, carbon and water, vertical profiles of CO and methane vulcanology.	MOPITT, MODIS, MISR, CERES, ASTER	Type: Sun-synchronous Altitude: 705 km Period: 99 mins Inclination: 98.2 deg Repeat cycle: 16 days LST: 10:30 Longitude (if geo): Asc/desc: Descending URL: terra.nasa.gov/
TerraSAR-X DLR	Currently being flown	15 Jun 2007	Dec 2015	Cartography, land surface, civil planning and mapping, digital terrain models, environmental monitoring.	X-Band SAR, GPSRO (Terra-SAR)	Type: Sun-synchronous Altitude: 514 km Period: 94.85 mins Inclination: 97.4 deg Repeat cycle: 11 days LST: 18:00 Longitude (if geo): Asc/desc: Ascending URL: www.terrasar.de/
THEOS Thailand Earth Observation System GISTDA	Currently being flown	01 Oct 2008	Oct 2014	Earth resources, land surface and disaster monitoring, civil planning.	PAN (GISTDA), MS (GISTDA)	Type: Sun-synchronous Altitude: 822 km Period: 101 mins Inclination: 98.7 deg Repeat cycle: 26 days LST: 10:00 Longitude (if geo): Asc/desc: Descending URL: www.gistda.or.th
TRMM Tropical Rainfall Measuring Mission NASA / JAXA	Currently being flown	29 Nov 1997	Oct 2015	3-year nominal mission life, currently in extended operations. Atmospheric dynamics/water and energy cycles.	LIS, PR, CERES, VIRS, TMI	Type: Inclined, non-sun-synchronous Altitude: 405 km Period: 93.5 mins Inclination: 35 deg Repeat cycle: LST: Longitude (if geo): Asc/desc: N/A URL: trmm.gsfc.nasa.gov/, www.eorc.jaxa.jp/TRMM/

TSX-NG TerraSAR Next Generation DLR	Planned	2017	2024	Commercial follow-on mission to TerraSAR-X operated by Infoterra. Cartography, land surface, civil planning and mapping, digital terrain models, environmental monitoring.	X-Band SAR	Type: Sun-synchronous Altitude: 514 km Period: 94.85 mins Inclination: 97.4 deg Repeat cycle: LST: 18:00 Longitude (if geo): Asc/desc: Ascending URL:
UK-DMC2 UK Disaster Monitoring Constellation 2 UKSA	Currently being flown	29 Jul 2009	Jul 2014	Wide area, medium resolution optical imaging for mapping, crop monitoring, environmental resource and disaster management.	SLIM-6-22	Type: Sun-synchronous Altitude: 660 km Period: 98.5 mins Inclination: 98.14 deg Repeat cycle: 5 days LST: 10:45 Longitude (if geo): Asc/desc: Ascending URL: www.dmcii.com
VENUS Vegetation and Environment monitoring on a New Micro-Satellite CNES / ISA	Approved	Dec 2015	Dec 2018	Vegetation, agriculture monitoring, water management.	VSC	Type: Sun-synchronous Altitude: 720 km Period: Inclination: 98.27 deg Repeat cycle: 2 days LST: Longitude (if geo): Asc/desc: Descending URL: smsc.cnes.fr/VENUS/index.htm
ZY-02C Earth Resources Satellite CRESDA	Currently being flown	22 Nov 2011	Dec 2015	Earth resources, environmental monitoring, land surface.	CCD (ZY-02C and ZY-3), PAN (ZY-02C)	Type: Sun-synchronous Altitude: 778 km Period: 100.3 mins Inclination: 98.5 deg Repeat cycle: 26 days LST: 10:30 Longitude (if geo): Asc/desc: Descending URL: http://www.cresda.com/
ZY-3 Mapping satellites CRESDA	Currently being flown	09 Jan 2012	Jun 2017	Earth resources, land surface,stereo mapping	CCD (ZY-02C and ZY-3), MUX (ZY-3)	Type: Sun-synchronous Altitude: 505 km Period: 97.7 mins Inclination: 98.5 deg Repeat cycle: 59 days LST: 10:30 Longitude (if geo): Asc/desc: Descending URL: http://www.cresda.com/