

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	20 Dec 1999	Sep 2015	5-year nominal mission life, currently being decommissioned due to age-related degradation of batteries. Operational mission will end in 2014.	ACRIM III	Type: Sun-synchronous Altitude: 650 km Period: 98.5 mins Inclination: 97.81 deg Repeat cycle: 1 days LST: 18:00 Longitude (if geo): Asc/desc: Descending URL: acrim.jpl.nasa.gov/
ADM-Aeolus Atmospheric Dynamics Mission (Earth Explorer Core Mission) ESA	Approved	Nov 2015	Nov 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/exo/esaLP/aeolus.html
AISSat-1 Automatic Identification System Satellite-1 NSC	Currently being flown	12 Jul 2010	Dec 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	Currently being flown	08 Jul 2014	Jun 2017	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	Approved	Jul 2015	Jul 2018	Extend performance and 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	Currently being flown	24 May 2014	May 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
AMAZONIA-1 Amazonia 1 INPE	Approved	Dec 2017	Dec 2020	Earth resources, environmental monitoring, land surface.	WFI-2 (Amazonia-1)	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	04 May 2002	Oct 2015	6-year nominal mission life, currently in extended operations. Atmospheric dynamics/water and energy cycles, cloud formation, precipitation and radiative properties, air/seaflores of energy and moisture, sea ice extent and heat exchange with the atmosphere.	AIRS, HIRDLS, 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
Arctic-M N1 Hydro-meteorological Satellite Arctic-M N1 ROSKOSMOS / ROSHYDROMET	Approved	Jul 2015	Dec 2022	Meteorology, oceanography, including ice cover monitoring? environmental climate and disaster monitoring in the Arctic region.	GGAK-VE, MSU-GS/VE	Type: Highly elliptical Altitude: Period: 720 mins Inclination: 63 deg Repeat cycle: 1 days LST: Longitude (if geo): Asc/desc: Ascending URL: www.federspace.ru
Arctic-M N2 Hydro-meteorological Satellite Arctic-M N2 ROSKOSMOS / ROSHYDROMET	Approved	Dec 2018	Dec 2025	Meteorology, oceanography, including ice cover monitoring? environmental climate and disaster monitoring in the Arctic region.	GGAK-VE, MSU-GS/VE	Type: Highly elliptical Altitude: Period: 720 mins Inclination: 63 deg Repeat cycle: 1 days LST: Longitude (if geo): Asc/desc: Ascending URL: www.federspace.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: coe.nasa.gov/ascends/index.htm
Aura Aura (formerly EOS Chemistry) NASA / NSO / FMI / UKSA	Currently being flown	15 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: 13:36 Longitude (if geo): Asc/desc: Ascending URL: aura.gsfc.nasa.gov/
BIOMASS ESA	Planned	2020	2025	Will provide global maps of forest biomass and height (at 200 m resolution) and forest disturbance (at 50 m resolution) every 6 months	P-Band SAR	Type: Sun-synchronous Altitude: 660 km Period: 102.6 mins Inclination: 97.97 deg Repeat cycle: LST: 06:00 Longitude (if geo): Asc/desc: Ascending URL:
CALIPSO Cloud-Aerosol Lidar and Infrared Pathfinder Satellite Observations NASA / CNES	Currently being flown	28 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 ISRO	Currently being flown	05 May 2005	Dec 2015	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 2015	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 2016	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: www.isro.org/
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: www.isro.org/
CARTOSAT-2E Cartography Satellite - 2E ISRO	Approved	Jul 2016	Jul 2023	High precision large-scale cartographic mapping and thematic applications with MX data at 1:4000 scales.	HRMX, PAN (Cartosat-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: www.isro.org/
CARTOSAT-3 Cartography Satellite - 3 ISRO	Planned	2018	2023	Suitable for cadastral and infrastructure mapping and analysis.	PAN (Cartosat-3), MX (Cartosat-3), HYSI (Cartosat-3)	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/
CBERS-4 China Brazil Earth Resources Satellite - 4 INPE / CRESDA	Currently being flown	06 Dec 2014	Dec 2017	Earth resources, environmental monitoring, land surface.	WFI-2 (CBERS), 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	2018	2021	The primary objective of CFOSAT is to monitor at the global scale the wind and waves at the ocean surface.	SWIM, SCAT	Type: Sun-synchronous Altitude: 519 km Period: 94.7 mins Inclination: 97.5 deg Repeat cycle: LST: 7am Longitude (if geo): Asc/desc: Descending URL: www.cnes.fr
CloudSat NASA / DoD (USA) / CSA	Currently being flown	28 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. Files 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: www.kari.ac.kr
COSMIC-1/FORMOSAT-3 FM1 Constellation Observing System for Meteorology, Ionosphere and Climate-1 NSPO / NOAA / UCAR	Currently being flown	14 Apr 2006	Mar 2015	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 Constellation Observing System for Meteorology, Ionosphere and Climate-2 NOAA / NSPO / UCAR	Planned	2016	2018	This is a Radio occultation mission, consisting of 6 equatorial and 6 polar satellites in a constellation. TGRS will receive signals from GPS, Galileo, and Glonass.	TGRS	Type: Altitude: Period: Inclination: Repeat cycle: LST: Longitude (if geo): Asc/desc: URL:
COSMIC-2/FORMOSAT-3 FM2 Constellation Observing System for Meteorology, Ionosphere and Climate-2 NSPO / NOAA / UCAR	Currently being flown	14 Apr 2006	Mar 2015	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 2015	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 2015	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 2015	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 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 2 Constellation of small Satellites for Mediterranean basin Observation - 2 ASI / MoD (Italy)	Currently being flown	09 Dec 2007	Dec 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 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 2015	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.cnr.it/frs/diademe.html
DMSP F-14 Defense Meteorological Satellite Program F-14 NOAA / USAF	Currently being flown	04 Apr 1997	Dec 2015	The long-term meteorological programme of the US Department of Defense (DoD) - with the objective to collect and disseminate worldwide atmospheric, oceanographic, solar-geophysical, and cloud cover data on a daily basis.	OLS, SSM/I, SSM/T-1, SSM/T-2, SSB/X-2, SSI/ES-2, SSJ4, 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 2015	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, SSJ4, 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 2015	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, SSJ5, 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 2015	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 2015	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	Currently being flown	03 Apr 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: 17:30 Longitude (if geo): Asc/desc: Ascending URL: dmsp.ngdc.noaa.gov/dmsp.html

DISCOVR Deep Space Climate Observatory NOAA / USAF / NASA	Approved	Jan 2015	Jan 2020	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: www.osd.noaa.gov/DSCOVR/dscovr.html
EarthCARE ESA / JAXA	Approved	Nov 2017	Nov 2020	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
ECOSTRESS-on-ISS International Space Station/ECOSystem Spaceborne Thermal Radiometer Experiment on Space Station (ECOSTRESS) NASA	Planned			This project will use a high-resolution thermal infrared radiometer to measure plant evapotranspiration, the loss of water from growing leaves and evaporation from the soil. These data will reveal how ecosystems change with climate and provide a critical link between the water cycle and effectiveness of plant growth, both natural and agricultural.	ECOSTRESS	Type: Inclined, non-sun-synchronous Altitude: 407 km Period: 93 mins Inclination: 51.6 deg Repeat cycle: LST: Longitude (if geo): Asc/desc: Ascending URL:
Elektro-L N1 Geostationary Operational Meteorological Satellite ROSKOSMOS / ROSHYDROMET	Currently being flown	20 Jan 2011	Jan 2021	Hydrometeorology, heliogeophysics, climatology, cloud information.	MSU-GS, DCS, GGAK-E	Type: Geostationary Altitude: 36000 km Period: Inclination: Repeat cycle: LST: Longitude (if geo): -76 Asc/desc: N/A URL: planet.itp.ru/eng.nstomz.ru/ks_dzz/satellites
Elektro-L N2 Geostationary Operational Meteorological Satellite ROSHYDROMET / ROSKOSMOS	Approved	Dec 2014	Dec 2024	Hydrometeorology, heliogeophysics, climatology, cloud information.	MSU-GS, DCS, GGAK-E	Type: Geostationary Altitude: 36000 km Period: Inclination: Repeat cycle: LST: Longitude (if geo): 14.5 Asc/desc: N/A URL: planet.itp.ru/eng.nstomz.ru/ks_dzz/satellites
Elektro-L N3 Geostationary Operational Meteorological Satellite ROSHYDROMET / ROSKOSMOS	Planned	2018	2028	Hydrometeorology, heliogeophysics, climatology, cloud information.	MSU-GS, DCS, GGAK-E	Type: Geostationary Altitude: 36000 km Period: Inclination: Repeat cycle: LST: Longitude (if geo): Asc/desc: N/A URL: planet.itp.ru/eng.nstomz.ru/ks_dzz/satellites
EnMAP Environmental Mapping & Analysis Program DLR	Approved	Jan 2018	Jan 2023	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/
ePOP on CASSIOPE Enhanced Polar Outflow Probe on the Cascade SmallSat and Ionospheric Polar Explorer CSA	Currently being flown	29 Sep 2013	Sep 2015	The ePOP probe will observe the Earth's ionosphere, where space meets the upper atmosphere. The instruments will be used in conjunction with satellite and ground instruments to analyze radio wave propagation in the ionosphere, measure the particles densities and observe the aurora from space in response to space weather.	CER, SEI, FAI, RRI, GAP, IRM, MGF, NMS	Type: Inclined, non-sun-synchronous Altitude: Period: 103 mins Inclination: 80 deg Repeat cycle: LST: Longitude (if geo): Asc/desc: N/A URL: epp.phys.ucalgary.ca/
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.	ARGOS-4, 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 2014	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/arsen/
FY-2E FY-2E Geostationary Meteorological Satellite NSMC-CMA / NRSCC	Currently being flown	26 Dec 2008	Dec 2014	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/arsen/
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 2014	Meteorology and environmental monitoring; data collection and redistribution.	IRAS, MWAS, MWS, MWRI, VIRR, ERM, MERSI, MWTS, TOUSBUS, 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/arsen/

FY-3B FY-3B Polar-orbiting Meteorological Satellite NSMC-CMA / NRSCC	Currently being flown	05 Nov 2010	Dec 2014	Meteorology and environmental monitoring; data collection and redistribution. (Experimental pre-cursor to FY-3C).	IRAS, MWAS, MWHS, MWRI, VIRR, ERM, MERIS, 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/arsen/
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, MERIS, 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/arsen/
FY-3D FY-3D Polar-orbiting Meteorological Satellite NSMC-CMA / NRSCC	Approved	Dec 2015	Dec 2017	Meteorology and environmental monitoring; data collection and redistribution.	IMWAS, MIRAS, MWRI, ASI, GAMI, GNOS, MERIS-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/arsen/
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, MERIS-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/arsen/
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, MERIS-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/arsen/
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, MERIS-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/arsen/
FY-4A FY-4A Geostationary Meteorological Satellite NSMC-CMA / NRSCC	Approved	Dec 2015	Dec 2017	Meteorology and environmental monitoring; data collection and redistribution.	LM, MCS1	Type: Geostationary Altitude: 36000 km Period: Inclination: Repeat cycle: LST: Longitude (if geo): -105 Asc/Desc: N/A URL: fy3.satellite.cma.gov.cn/arsen/
FY-4B FY-4B Geostationary Meteorological Satellite NSMC-CMA / NRSCC	Planned	2017	2020	Meteorology and environmental monitoring; data collection and redistribution.	LM, MCS1	Type: Geostationary Altitude: 36000 km Period: Inclination: Repeat cycle: LST: Longitude (if geo): -105 Asc/Desc: N/A URL: fy3.satellite.cma.gov.cn/arsen/
FY-4C FY-4C Geostationary Meteorological Satellite NSMC-CMA / NRSCC	Planned	2020	2023	Meteorology and environmental monitoring; data collection and redistribution.	LM, MCS1	Type: Geostationary Altitude: 36000 km Period: Inclination: Repeat cycle: LST: Longitude (if geo): -105 Asc/Desc: N/A URL: fy3.satellite.cma.gov.cn/arsen/
FY-4D FY-4D Geostationary Meteorological Satellite NSMC-CMA / NRSCC	Planned	2023	2026	Meteorology and environmental monitoring; data collection and redistribution.	LM, MCS1	Type: Geostationary Altitude: 36000 km Period: Inclination: Repeat cycle: LST: Longitude (if geo): -105 Asc/Desc: N/A URL: fy3.satellite.cma.gov.cn/arsen/
FY-4E FY-4E Geostationary Meteorological Satellite NSMC-CMA / NRSCC	Planned	2026	2029	Meteorology and environmental monitoring; data collection and redistribution.	LM, MCS1	Type: Geostationary Altitude: 36000 km Period: Inclination: Repeat cycle: LST: Longitude (if geo): -105 Asc/Desc: N/A URL: fy3.satellite.cma.gov.cn/arsen/
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-C Global Change Observation Mission-C1 JAXA	Approved	Dec 2016	Dec 2021	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-W 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

GC0M-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
GC0M-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
GEDI-on-ISS International Space Station/Global Ecosystem Dynamics Investigation (GEDI) Lidar NASA	Planned			This project will use a laser-based system to study a range of climates, including the observation of the forest canopy structure over the tropics, and the tundra in high northern latitudes. This data will help scientists better understand the changes in natural carbon storage within the carbon cycle from both human-influenced activities and natural climate variations.	GEDI	Type: Inclined, non-sun-synchronous Altitude: 407 km Period: 93 mins Inclination: 51.6 deg Repeat cycle: LST: Longitude (if geo): Asc/desc: Ascending URL:
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.	UV/Vis Near IR Wide Imaging Spectrometer (Geo-Cape), 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	Jun 2018	Dec 2028	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	Nov 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 2017	Dec 2026	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), ARGOS-4, LRT	Type: Geostationary Altitude: 36000 km Period: Inclination: Repeat cycle: LST: Longitude (if geo): 75 Asc/desc: N/A URL: www.ospo.noaa.gov/Operations/GOES/index.html
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), SXI, Sounder, Imager, GOES Comms, SEM (GOES), ARGOS-4, LRT	Type: Geostationary Altitude: 36000 km Period: Inclination: Repeat cycle: LST: Longitude (if geo): 105 Asc/desc: N/A URL: www.ospo.noaa.gov/Operations/GOES/index.html
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), ARGOS-4, LRT	Type: Geostationary Altitude: 36000 km Period: Inclination: Repeat cycle: LST: Longitude (if geo): 135 Asc/desc: N/A URL: www.ospo.noaa.gov/Operations/GOES/index.html
GOES-R Geostationary Operational Environmental Satellite - R NOAA / NASA	Approved	Mar 2016	Sep 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	Jun 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	Mar 2018	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)	Approved	Jan 2018	Jan 2023	Observation of greenhouse gases.	TANSO-CAI-2, TANSO-FTS-2	Type: Sun-synchronous Altitude: 613 km Period: 98.9 mins Inclination: 97.8 deg Repeat cycle: 6 days LST: 13:00 Longitude (if geo): Asc/desc: Descending URL:

GPM Core Global Precipitation Measurement Mission Core spacecraft NASA / JAXA	Currently being flown	27 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: N/A 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	17 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	Approved	Aug 2017	Nov 2022	5-year nominal mission life, 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: eosps.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: mscoweb.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: mscoweb.kishou.go.jp/himawari89/index.html
HU-1A Disaster and Environment Monitoring and Forecast Small Satellite Constellation A CRESDA / CAST	Currently being flown	06 Sep 2008	Dec 2014	Disaster and environment monitoring and forecasting.	CCD (HJ), HSI (HU-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/
HU-1B Disaster and Environment Monitoring and Forecast Small Satellite Constellation B CRESDA / CAST	Currently being flown	06 Sep 2008	Dec 2014	Disaster and environment monitoring and forecasting.	CCD (HJ), IR (HU-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/
HU-1C Disaster and Environment Monitoring and Forecast Small Satellite Constellation C CRESDA / CAST	Currently being flown	19 Nov 2012	Dec 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/
HRWS SAR High Resolution Wide Swath SAR DLR	Planned	2022	2028	Cartography, land surface, civil planning and mapping, digital terrain models, environmental monitoring.	HRWS X-Band Digital Beamforming SAR	Type: Altitude: Period: Inclination: Repeat cycle: LST: Longitude (if geo): Asc/desc:
HY-2A Ocean dynamics satellite A NSOAS / CAST	Currently being flown	16 Aug 2011	Dec 2014	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	2016	2019	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: TBD URL: hyspiri.jpl.nasa.gov/
ICESat-II Ice, Cloud, and Land Elevation Satellite II NASA	Approved	Oct 2017	Dec 2020	3-year nominal mission life, 5-year goal. 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	Feb 2016	Feb 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	Nov 2015	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 2015	Jun 2022	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	May 2018	3-year nominal mission life, 5 year Goal. 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: sealevel.jpl.nasa.gov/missions/jason3/
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.jpss.noaa.gov
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, RBI, OMPS-L	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.jpss.noaa.gov
KALPANA-1 Meteorological Satellite ISRO	Currently being flown	12 Sep 2002	Dec 2016	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 Environmental Satellite Kanopus-V ROSKOSMOS / ROSHYDROMET	Currently being flown	22 Jul 2012	Jul 2017	Disaster monitoring, forest fire detection, land surface, environmental monitoring.	PSS, MSS	Type: Sun-synchronous Altitude: 510 km Period: 94.7 mins Inclination: 97.4 deg Repeat cycle: 5 days LST: Longitude (if geo): Asc/desc: Ascending URL: www.federspace.ru; eng.ntsomz.ru/ks_dzz/satellites; planet.itp.ru
Kanopus-V-IR Environmental Satellite Kanopus-V-IR ROSKOSMOS / ROSHYDROMET	Planned	2015	2020	Disaster monitoring, forest fire detection, land surface, environmental monitoring.	PSS, MSS, MSU-IK-SR	Type: Sun-synchronous Altitude: 510 km Period: 94.7 mins Inclination: 97.4 deg Repeat cycle: 5 days LST: Longitude (if geo): Asc/desc: Ascending URL: www.federspace.ru; eng.ntsomz.ru/ks_dzz/satellites; planet.itp.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	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	Approved	Dec 2014	May 2018	Cartography, land use and planning, disaster monitoring.	AEISS-A	Type: Sun-synchronous Altitude: 685 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
KOMPSAT-6 Korea Multi-Purpose Satellite -6 KARI	Approved	Jun 2019	Jun 2024	Cartography, land use and planning, disaster monitoring	SAR Payload	Type: Altitude: Period: Inclination: Repeat cycle: LST: Longitude (if geo): Asc/desc: URL:
LAGEOS-1 Laser Geodynamics Satellite - 1 NASA / 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 / NASA	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	15 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, ldcn.nasa.gov/
Landsat 8 USGS / NASA	Currently being flown	11 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, ldcn.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: 98.1 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
LOTUSat 1 VAST	Planned	2017	2020		LOTUSat 1 SAR	Type: Altitude: Period: Inclination: Repeat cycle: LST: Longitude (if geo): Asc/desc: URL:
LOTUSat 2 VAST	Planned	2020	2023		LOTUSat 2 SAR	Type: Altitude: Period: Inclination: Repeat cycle: LST: Longitude (if geo): Asc/desc: URL:
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: smec.cnec.fr/MEGHAT/
MERLIN Methane Remote Sensing Lidar Mission CNES / DLR	Planned	2019	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 Meteorological Satellite Meteor-M N1 ROSHYDROMET / ROSKOSMOS	Currently being flown	17 Sep 2009	Sep 2015	Hydrometeorology, climatology, heliogeophysics, Earth resources and environmental monitoring.	MTVZA, MSU-MR, DCS, KMSS, GGAK-M, BRLK	Type: Sun-synchronous Altitude: 832 km Period: 101 mins Inclination: 98.8 deg Repeat cycle: LST: 09:30 Longitude (if geo): Asc/desc: Ascending URL: planet.itp.ru, eng.ntsomz.ru/ks_dzz/satellites;
Meteor-M N2 Meteorological Satellite Meteor-M N2 ROSHYDROMET / ROSKOSMOS	Currently being flown	08 Jul 2014	Dec 2019	Hydrometeorology, climatology, heliogeophysics, Earth resources and environmental monitoring.	MTVZA, IKFS, MSU-MR, DCS, KMSS, GGAK-M, BRLK	Type: Sun-synchronous Altitude: 835 km Period: 101 mins Inclination: 98.8 deg Repeat cycle: LST: 09:30 Longitude (if geo): Asc/desc: Ascending URL: planet.itp.ru, eng.ntsomz.ru/ks_dzz/satellites;
Meteor-M N2-1 Meteorological Satellite Meteor-M N2-1 ROSHYDROMET / ROSKOSMOS	Approved	Dec 2015	Dec 2020	Hydrometeorology, climatology, heliogeophysics, Earth resources and environmental monitoring.	MTVZA, IKFS, MSU-MR, DCS, KMSS, GGAK-M, BRLK	Type: Sun-synchronous Altitude: 835 km Period: 101 mins Inclination: 98.8 deg Repeat cycle: LST: TBD Longitude (if geo): Asc/desc: Ascending URL: planet.itp.ru, eng.ntsomz.ru/ks_dzz/satellites;
Meteor-M N2-2 Meteorological Satellite Meteor-M N2-2 ROSHYDROMET / ROSKOSMOS	Approved	Dec 2015	Dec 2020	Hydrometeorology, climatology, heliogeophysics, Earth resources and environmental monitoring.	MTVZA, IKFS, MSU-MR, DCS, KMSS, GGAK-M, BRLK	Type: Sun-synchronous Altitude: 835 km Period: 101 mins Inclination: 98.8 deg Repeat cycle: LST: TBD Longitude (if geo): Asc/desc: Ascending URL: planet.itp.ru, eng.ntsomz.ru/ks_dzz/satellites;

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.itp.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 GKAK-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.itp.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 GKAK-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.itp.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 GKAK-M, TGSP	Type: Sun-synchronous Altitude: Period: Inclination: Repeat cycle: LST: Longitude (if geo): Asc/desc: URL: planet.itp.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	Aug 2015	Aug 2025	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	Aug 2018	Meteorology, climatology.	SEM (POES), ARGOS-3, S&R (NOAA), MHS, IASI, GRAS, GOME-2, ASCAT, AMSU-A, AVHRR/3, HIRS/4	Type: Sun-synchronous Altitude: 840 km Period: 101.1 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-3, 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	Feb 2018	Dec 2021	Meteorology, climatology.	SEM (POES), ARGOS-3, MHS, IASI, GRAS, GOME-2, ASCAT, AMSU-A, AVHRR/3, ARGOS-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?
MTG-I1 (imaging) Meteosat Third Generation - Imaging Satellite 1 EUMETSAT / ESA	Approved	Jan 2019	Jul 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	Dec 2026	Jul 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-14 (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	Jul 2021	Dec 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	Jul 2029	Dec 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: www.eumetsat.int/Home/Main/Satellites/index.htm?l=en?
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: desdyn1.gis.nasa.gov
NISAR NASA ISRO - Synthetic Aperture Radar NASA / ISRO	Planned	2020	2025	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 (NISAR), S-band SAR (NISAR)	Type: Sun-synchronous Altitude: 747 km Period: 100 mins Inclination: 98 deg Repeat cycle: 12 days LST: 6:00 Longitude (if geo): Asc/desc: Ascending
NMP EO-1 New Millennium Program Earth Observing-1 NASA	Currently being flown	23 Nov 2000	Sep 2015	1.5-year nominal mission life, currently in extended operations. Land surface, earth resources. NMP EO-1 completion of science is planned for 30 September 2015 with passivation planned for 20 March 2016.	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.gisfc.nasa.gov/
NOAA-15 National Oceanic and Atmospheric Administration - 15 NOAA	Currently being flown	01 May 1998	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.	ARGOS-3, 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.ospo.noaa.gov/Operations/POES/index.html
NOAA-18 National Oceanic and Atmospheric Administration - 18 NOAA	Currently being flown	20 May 2005	Dec 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-3, 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.ospo.noaa.gov/Operations/POES/index.html
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-3, S&R (NOAA), MHS, SBUV/2, AVHRR/3, NOAA Comms, HIRS/4, ARGOS-4, 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.ospo.noaa.gov/Operations/POES/index.html
Norsat-1 NSC	Approved	Aug 2016	Aug 2019	Enhanced AIS performance; total solar irradiance; langmuir probe	Norsat-1 Instrument, AIS, Langmuir Probe, TSI	Type: Altitude: Period: Inclination: Repeat cycle: LST: Longitude (if geo): Asc/desc: URL:
Obzor-O N1 Operative Monitoring Satellite Obzor-O N1 ROSKOSMOS	Planned	2016	2023	Operative environmental and disaster monitoring for Russian Federation and neighboring states territories.	GSA (2), IK-radiometer (1), MSA (1)	Type: Sun-synchronous Altitude: 700 km Period: Inclination: 98.2 deg Repeat cycle: 30 days LST: Longitude (if geo): Asc/desc: Descending URL: www.federspace.ru
Obzor-O N2 Operative Monitoring Satellite Obzor-O N2 ROSKOSMOS	Planned	2017	2024	Operative environmental and disaster monitoring for Russian Federation and neighboring states territories.	GSA (2), IK-radiometer (1), MSA (1)	Type: Sun-synchronous Altitude: 700 km Period: Inclination: 98.2 deg Repeat cycle: 30 days LST: Longitude (if geo): Asc/desc: TBD URL: www.federspace.ru
Obzor-O N3 Operative Monitoring Satellite Obzor-O N3 ROSKOSMOS	Planned	2018	2025	Operative environmental and disaster monitoring for Russian Federation and neighboring states territories.	MSA (2)	Type: Sun-synchronous Altitude: 700 km Period: Inclination: 98.2 deg Repeat cycle: 7 days LST: Longitude (if geo): Asc/desc: TBD URL: www.federspace.ru

Obzor-O N4 Operative Monitoring Satellite Obzor-O N4 ROSKOSMOS	Planned	2019	2026	Operative environmental and disaster monitoring for Russian Federation and neighboring states territories.	MSA (2)	Type: Sun-synchronous Altitude: 700 km Period: Inclination: 98.2 deg Repeat cycle: 7 days LST: Longitude (if geo): Asc/desc: TBD URL: www.federspace.ru
Obzor-R N1 SAR Operative Monitoring Satellite Obzor-R N1 ROSKOSMOS	Planned	2018	2023	Operative Earth and disaster monitoring.	BRK	Type: Sun-synchronous Altitude: 650 km Period: Inclination: 98 deg Repeat cycle: 2 days LST: Longitude (if geo): Asc/desc: TBD URL: www.federspace.ru
Obzor-R N2 SAR Operative Monitoring Satellite Obzor-R N2 ROSKOSMOS	Planned	2019	2024	Operative Earth and disaster monitoring.	BRK	Type: Sun-synchronous Altitude: 650 km Period: Inclination: 98 deg Repeat cycle: 2 days LST: Longitude (if geo): Asc/desc: TBD URL: www.federspace.ru
Obzor-R N3 SAR Operative Monitoring Satellite Obzor-R N3 ROSKOSMOS	Planned	2020	2025	Operative Earth and disaster monitoring.	BRK	Type: Sun-synchronous Altitude: 650 km Period: Inclination: 98 deg Repeat cycle: 2 days LST: Longitude (if geo): Asc/desc: TBD URL: www.federspace.ru
Obzor-R N4 SAR Operative Monitoring Satellite Obzor-R N4 ROSKOSMOS	Planned	2022	2027	Operative Earth and disaster monitoring.	BRK	Type: Sun-synchronous Altitude: 650 km Period: Inclination: 98 deg Repeat cycle: 2 days LST: TBD Longitude (if geo): Asc/desc: TBD URL: www.federspace.ru
OCEANSAT-2 Ocean Satellite-2 ISRO	Currently being flown	24 Sep 2009	Sep 2016	Ocean and atmosphere applications.	OCM, Scatterometer (OCEANSAT-2), ROSA	Type: Sun-synchronous Altitude: 720 km Period: 98.31 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	Planned	2018	2023	Ocean and atmosphere applications.	TIR (Oceansat-3), OCM (Oceansat-3)	Type: Sun-synchronous Altitude: 720 km Period: 98.31 mins Inclination: 98.28 deg Repeat cycle: 2 days LST: 12:00 Longitude (if geo): Asc/desc: Descending URL: www.isro.org/
OCO-2 Orbiting Carbon Observatory-2 NASA	Currently being flown	02 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: 98.6 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	Considered	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 2015	Atmospheric research, stratospheric ozone chemistry, mesospheric ozone science, summer mesospheric science.	OSIRIS, SMR	Type: Sun-synchronous Altitude: 570 km Period: 97.6 mins Inclination: 97.65 deg Repeat cycle: LST: 18:00 Longitude (if geo): Asc/desc: Ascending URL: www.ohb-sweden.se/odin
OPISIS 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: 691 km Period: 98.6 mins Inclination: 98.2 deg Repeat cycle: 28 days LST: 10:30 Longitude (if geo): Asc/desc: Descending URL: www.asi.it
Oersted (Oersted) DNES / CNES	Currently being flown	21 Nov 1999	Dec 2015	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	20 Jun 2008	Oct 2017	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	2020	2024	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
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	Mar 2015	Mar 2020	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.hidesat.es

PCW-1 Polar Communications and Weather-1 CSA / DND / EnvCan	Planned	2021	2036	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 / DND / EnvCan	Planned	2021	2036	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
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: smc.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: smc.cnes.fr/PLEIADES/Fr/index.htm
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 2014	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: 620 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	19 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. Mission is scheduled for decommissioning in 2014, but may be extended for cross-calibration activities with RapidScat.	SeaWinds	Type: Sun-synchronous Altitude: 603 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 / NRCAN / DND / DFO / AAFC / EnvCan / PSC	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 / NRCAN / DND / DFO / AAFC / EnvCan / PSC	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 / NRCAN / DND / DFO / AAFC / EnvCan / PSC	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: 796 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 2015	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/
RESCOURCESAT-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/
RESCOURCESAT-2A Resource Satellite-2A ISRO	Approved	Jan 2016	Jan 2021	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/

RESOURCE SAT-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 Environmental Satellite Resurs-DK N1 ROSKOSMOS / ROSHYDROMET	Currently being flown	15 Jun 2006	Dec 2015	Earth resources, environmental and disaster monitoring, cartography.	Geoton-L1 (1), Pamela, Arina	Type: Inclined, non-sun-synchronous Altitude: Period: 94 mins Inclination: 70 deg Repeat cycle: 6 days LST: Longitude (if geo): Asc/Desc: Ascending URL: www.federspace.ru: eng.ntsomz.ru/ks_dzz/satellites
Resurs-P N1 Environmental Satellite Resurs-P N1 ROSKOSMOS / ROSHYDROMET	Currently being flown	25 Jun 2013	Jun 2018	Earth resources, environmental and disaster monitoring, cartography.	Geoton-L1 (2), GSA (1), SHMSA-SR, SHMSA-VR	Type: Sun-synchronous Altitude: 475 km Period: Inclination: 97 deg Repeat cycle: 3 days LST: Longitude (if geo): Asc/Desc: Descending URL: www.federspace.ru: eng.ntsomz.ru/ks_dzz/satellites
Resurs-P N2 Environmental Satellite Resurs-P N2 ROSKOSMOS / ROSHYDROMET	Approved	Dec 2014	Dec 2019	Earth resources, environmental and disaster monitoring, cartography.	Geoton-L1 (2), GSA (1), SHMSA-SR, SHMSA-VR	Type: Sun-synchronous Altitude: 475 km Period: Inclination: 97 deg Repeat cycle: 3 days LST: Longitude (if geo): Asc/Desc: TBD URL: www.federspace.ru
Resurs-P N3 Environmental Satellite Resurs-P N3 ROSKOSMOS	Planned	2015	2020	Earth resources, environmental and disaster monitoring, cartography.	Geoton-L1 (2), GSA (1), SHMSA-SR, SHMSA-VR	Type: Sun-synchronous Altitude: 475 km Period: Inclination: 97.3 deg Repeat cycle: 3 days LST: Longitude (if geo): Asc/Desc: TBD URL: www.federspace.ru
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 2015	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-D/Aquarius CONAE / NASA	Currently being flown	10 Jun 2011	Jun 2017	Earth observation studies; measurement of ocean surface salinity; atmospheric and environmental parameters.	Lagrange, MWR, HSC (SAC-D/Aquarius), CARMEN-1 (SODAD), NIRST, CARMEN-1 (CARE), DC3 (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 & Coastal surveillance, urban lights, polar auroras, fires, data collection system.	DCS (SABIA_MAR), HSC (SABIA_MAR), UV-VIS, NIR-SWIR, HRTPC, TIR, MAC	Type: Sun-synchronous Altitude: 645 km Period: 97.6 mins Inclination: 97.98 deg Repeat cycle: 4 days LST: *11:45 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 & Coastal surveillance, urban lights, polar auroras, fires, data collection system.	DCS (SABIA_MAR), HSC (SABIA_MAR), UV-VIS, NIR-SWIR, HRTPC, TIR, MAC	Type: Sun-synchronous Altitude: 645 km Period: 97.6 mins Inclination: 97.98 deg Repeat cycle: 4 days LST: *11:45 Longitude (if geo): Asc/Desc: Descending URL: www.conae.gov.ar/
SAGE-III Stratospheric Aerosol and Gas Experiment NASA	Approved	Feb 2016	May 2017	1-year design life, 3 year goal. refurbishment of the SAGE-III instrument and of a hexapod pointing platform, and accommodation studies. This mission flies on the ISS. Objective is to monitor the vertical distribution of aerosols, ozone, and other trace gases in the Earth's stratosphere and troposphere to enhance our understanding of ozone recovery and climate change processes in the upper atmosphere.	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 Satélite Argentino de Observación Con Microondas 1A CONAE / ASI	Approved	Sep 2015	Dec 2020	Earth observation and emergency management with an L-band SAR, soil moisture for agriculture and hydrology (main driver), interferometry.	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 Satélite Argentino de Observación Con Microondas 1B CONAE / ASI	Approved	Sep 2016	Dec 2021	Earth observation and emergency management with an L-band SAR, soil moisture for agriculture and hydrology (main driver), interferometry.	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 Satélite Argentino de Observación Con Microondas 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 Satélite Argentino de Observación Con Microondas 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-3, 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	2016	2019	Segmented architecture development.	SAR components testing	Type: Altitude: Period: Inclination: Repeat cycle: LST: Longitude (if geo): Asc/desc: URL:
SCATSAT-1 ISRO	Planned	2015	2020	Observe the sea roughness, wind velocity vector	Scatterometer (Scatsat-1)	Type: Sun-synchronous Altitude: Period: Inclination: Repeat cycle: LST: 12:00 Longitude (if geo): Asc/desc: Descending URL:
SCD-1 Data Collecting Satellite 1 INPE	Currently being flown	09 Feb 1993	Dec 2014	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: Ascending URL: www.inpe.br
SCD-2 Data Collecting Satellite 2 INPE	Currently being flown	22 Oct 1998	Dec 2014	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: Ascending URL: www.inpe.br
SCISAT-1 SCISAT-IJACE 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/scip.html
Sentinel-1 A ESA / EC	Currently being flown	03 Apr 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/esaPL/PLPgmes.html
Sentinel-1 B ESA / EC	Approved	Nov 2015	Apr 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/esaPL/PLPgmes.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/esaPL/PLPgmes.html
Sentinel-2 A ESA / EC	Approved	Apr 2015	Jul 2022	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/esaPL/PLPgmes.html
Sentinel-2 B ESA / EC	Approved	Feb 2016	May 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/esaPL/PLPgmes.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/esaPL/PLPgmes.html
Sentinel-3 A ESA / EUMETSAT / EC	Approved	May 2015	Sep 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/esaPL/PLPgmes.html
Sentinel-3 B ESA / EUMETSAT / EC	Approved	Sep 2015	Jan 2024	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/esaPL/PLPgmes.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/esaPL/PLPgmes.html

Sentinel-4 A ESA / EC	Planned	2021	2029	Supporting European atmospheric composition and air quality monitoring services. The Sentinel-4 A mission is carried on MTG S1.	UVN (Sentinel-4)	Type: Geostationary Altitude: Period: Inclination: Repeat cycle: LST: Longitude (if geo): 0 Asc/desc: N/A URL: www.esa.int/esa/L/PLPgmes.html
Sentinel-4 B ESA / EC	Planned	2029	2037	Supporting European atmospheric composition and air quality monitoring services. The Sentinel-4 B mission is carried on MTG S2.	UVN (Sentinel-4)	Type: Geostationary Altitude: Period: Inclination: Repeat cycle: LST: Longitude (if geo): 0 Asc/desc: N/A URL: www.esa.int/esa/L/PLPgmes.html
Sentinel-5 ESA	Planned	2021	2028	In early stages of mission definition. Other payloads will be added. The Sentinel-5 mission is carried on EPS-SG-a.	UVNS (Sentinel-5)	Type: Sun-synchronous Altitude: Period: Inclination: Repeat cycle: LST: Longitude (if geo): Asc/desc: N/A URL: www.esa.int/esa/L/PLPgmes.html
Sentinel-5 precursor ESA / NSO	Approved	Dec 2015	Dec 2020	Supporting global atmospheric composition and air quality monitoring services.	UVNS (Sentinel-5 precursor)	Type: Sun-synchronous Altitude: 624 km Period: 17 mins Inclination: 98.742 deg Repeat cycle: LST: 13:30 Longitude (if geo): Asc/desc: Ascending URL: www.esa.int/esa/L/PLPgmes.html
Sentinel-6 A ESA / EUMETSAT / NASA / NOAA / EC / CNES	Planned	2020	2025	To provide continuity of the reference, high-precision ocean topography service after Jason-3	DORIS-NG, AMR-C, GNSS POD Receiver, LRA (Sentinel-6), Poseidon 4 Altimeter, TrIG	Type: Inclined, non-sun-synchronous Altitude: 1336 km Period: 112 mins Inclination: 66 deg Repeat cycle: LST: Longitude (if geo): Asc/desc: URL:
Sentinel-6 B ESA / EUMETSAT / NASA / NOAA / EC / CNES	Planned	2025	2030	To provide continuity of the reference, high-precision ocean topography service after Jason-3	DORIS-NG, AMR-C, GNSS POD Receiver, LRA (Sentinel-6), Poseidon 4 Altimeter, TrIG	Type: Inclined, non-sun-synchronous Altitude: 1336 km Period: 112 mins Inclination: 66 deg Repeat cycle: LST: Longitude (if geo): Asc/desc: URL:
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:
SIDAR Solar Irradiance Data and Rescue NOAA / NASA	Planned	2017	2021	Launch date under review. Spacecraft carrying TSIS and user services payloads not accommodated on JPSS 1 or 2	S&R (NOAA), TSIS-1, ARGOS-4	Type: Sun-synchronous Altitude: Period: Inclination: Repeat cycle: LST: Longitude (if geo): Asc/desc: Ascending URL: www.nesdis.noaa.gov/jps/
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	Feb 2015	Jun 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: http://www.cresda.com/
SMOS Soil Moisture and Ocean Salinity (Earth Explorer Opportunity Mission) ESA / CDTI / CNES	Currently being flown	02 Nov 2009	Feb 2017	Overall objectives are to provide global observations of two crucial variables for modeling 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: smap.jpl.nasa.gov/
SORCE Solar Radiation and Climate Experiment NASA	Currently being flown	25 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	Mar 2015	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	28 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	Currently being flown	22 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. Canada contributes the electric field instrument that is required to correctly separate the measured magnetic field into its different sources.	Laser Reflectors (ESA), ASM, VFM, STR, CEFI, 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/Our_Activities/Observing_the_Earth/The_Living_Planet_Programme/Earth_Explorers/Swarm
SWOT Surface Water Ocean Topography NASA / UKSA / CNES / CSA	Planned	2020	2024	3.5-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, DORIS-NG, AMR, GPSP, Ka-band Radar Interferometer (KaRIN)	Type: Inclined, non-sun-synchronous Altitude: 891 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-231773669_read-548/
TCTE Total Solar Irradiance (TSI) Calibration Transfer NOAA / NASA	Currently being flown	19 Nov 2013	Dec 2014	Hosted on USAF STPSat-3 spacecraft	TIM	Type: Period: Inclination: Repeat cycle: LST: Longitude (if geo): Asc/desc: URL: asp.colorado.edu/home/missions-projects/quick-facts-tcte/
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	18 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 2015	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	27 Nov 1997	Feb 2016	3-year nominal mission life, currently in extended operations. NASA has ceased station keeping maneuvers and TRMM has begun its drift downward from its operating altitude of 402 km. 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: N/A Longitude (if geo): Asc/desc: N/A URL: trmm.gsfc.nasa.gov/ , www.eorc.jaxa.jp/TRMM/
TSIS-on-ISS International Space Station/Total Solar and Spectral Irradiance Sensor Mission NOAA / NASA	Planned				TSIS-1	Type: Inclined, non-sun-synchronous Altitude: 407 km Period: 93 mins Inclination: 51.6 deg Repeat cycle: LST: Longitude (if geo): Asc/desc: Ascending URL:
TSX-NG TerraSAR Next Generation DLR	Planned	2018	2025	Commercial follow-on mission to TerraSAR-X operated by Infoterra. Cartography, land surface, civil planning and mapping, digital terrain models, environmental monitoring.	TSX-NG 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 2016	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: 10:36 Longitude (if geo): Asc/desc: Ascending URL: www.dmc1.com
VENUS Vegetation and Environment monitoring on a New Micro-Satellite CNES / ISA	Approved	Dec 2016	Dec 2019	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: smc.cnes.fr/VENUS/index.htm
VNREDSat 1 VAST	Currently being flown	07 May 2013	Jul 2018	Land cover mapping	VNREDSat 1 MS	Type: Sun-synchronous Altitude: 680 km Period: Inclination: Repeat cycle: LST: Dec 30 1899 10:30AM Longitude (if geo): Asc/desc: URL:
VNREDSat 1b VAST	Planned	2017	2020		VNREDSat 1 HS	Type: Altitude: Period: Inclination: Repeat cycle: LST: Longitude (if geo): Asc/desc: URL:

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/