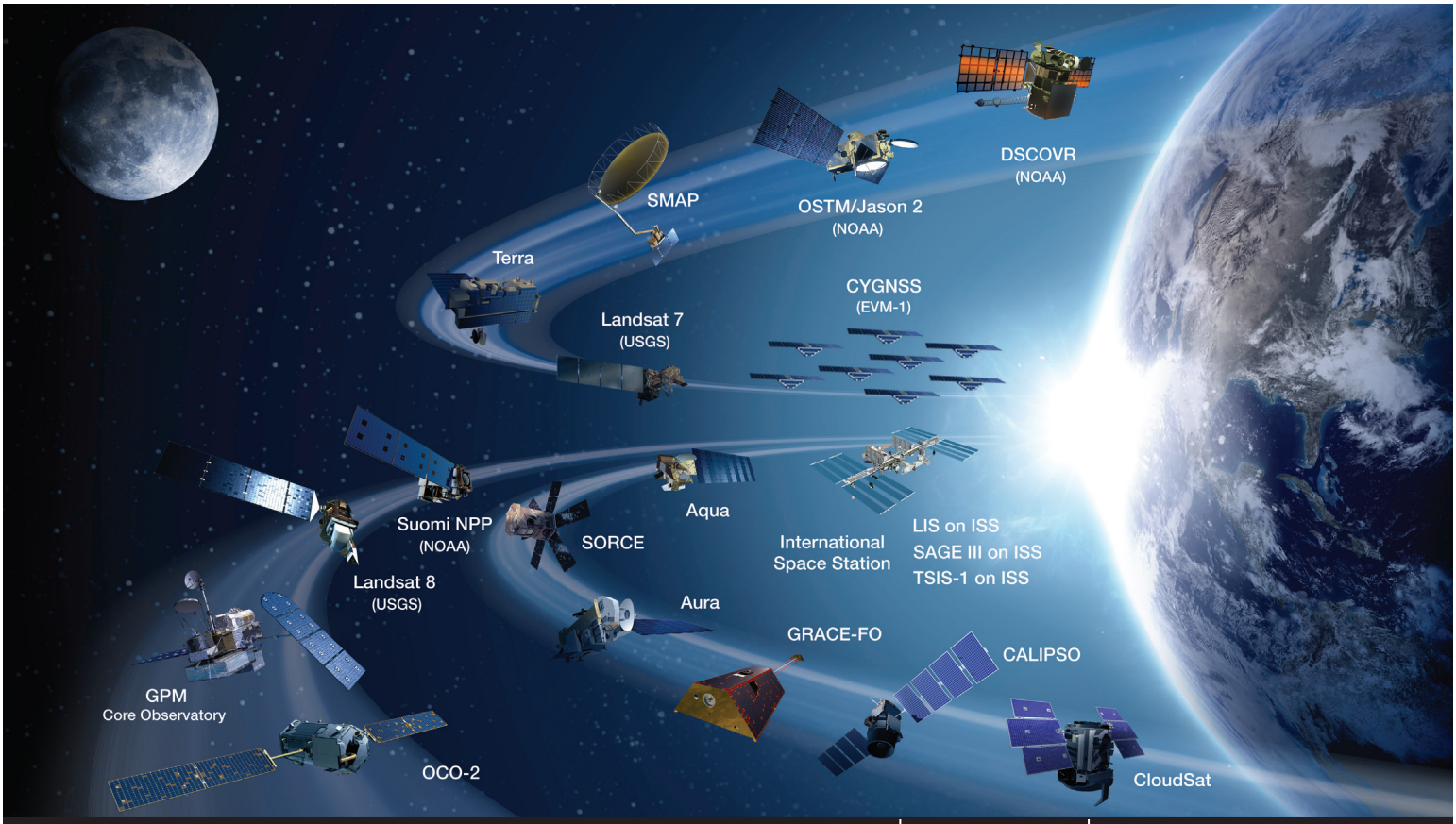
NASA's Operating Earth Science Satellite Missions

(including partnerships, as of May 2018)

National Aeronautics and Space Administration



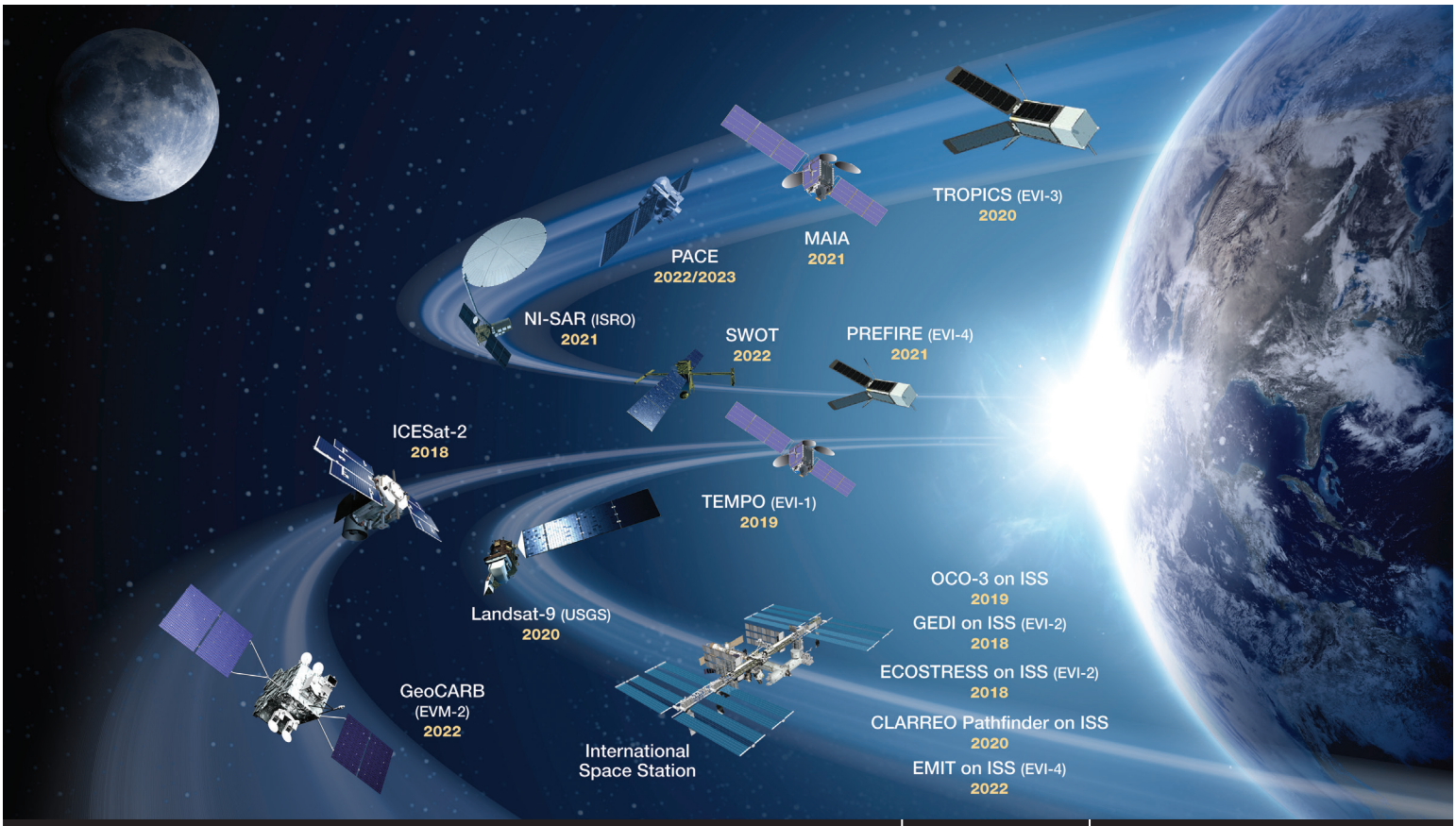
This graphic depicts NASA's operating Earth science satellite missions as of May 2018. Image credit: NASA

OPERATING MISSIONS		LAUNCH DATE	SCIENCE FOCUS
Aqua	*aqua.nasa.gov*	2002	Water Cycle
Aura	*aura.gsfc.nasa.gov*	2004	Atmospheric Chemistry
CALIPSO[1]	*www-calipso.larc.nasa.gov*	2006	Clouds and Aerosols
CloudSat	*cloudsat.atmos.colostate.edu*	2006	Cloud Structure
CYGNSS[3] (EVM[8]-1)	*clasp-research.engin.umich.edu/missions/cygnss*	2016	Ocean Winds, Extreme Weather Prediction
DSCOVR[4] (NOAA[19])	*www.nesdis.noaa.gov/DSCOVR*	2015	Space Weather and Earth Observations
GPM[11] Core Observatory	*pmm.nasa.gov/GPM*	2014	Precipitation
GRACE-FO[12]	*gracefo.jpl.nasa.gov*	2018	Earth's Gravity Field
Landsat 7 (USGS[33])	*landsat.gsfc.nasa.gov*	1999	Land Imaging
Landsat 8 (USGS[33])	*landsat.gsfc.nasa.gov*	2013	Land Imaging
LIS[16] on ISS[15]	*www.nasa.gov/mission_pages/station/research/experiments/2011.html*	2017	Lightning Distribution and Variability
OCO-2[20]	*oco.jpl.nasa.gov*	2014	Atmospheric Carbon Dioxide
OSTM/Jason-2[22] (NOAA[19])	*sealevel.jpl.nasa.gov/missions/ostmjason2*	2008	Ocean Surface Topography
SAGE III[28] on ISS[15]	*www.nasa.gov/mission_pages/station/research/experiments/1004.html*	2017	Stratospheric Ozone and Aerosols
SMAP[25]	*smap.jpl.nasa.gov*	2014	Soil Moisture
SORCE[26]	*lasp.colorado.edu/sorce/index.htm*	2003	Solar Radiation
Suomi NPP[27] (NOAA[19])	*npp.gsfc.nasa.gov*	2011	EOS Data Continuity and Operational Uses
Terra	*terra.nasa.gov*	1999	Land Processes
TSIS-1[32] on ISS[15]	*www.nasa.gov/mission_pages/station/research/experiments/2171.html*	2017	Sun's Energy Input to Earth

NASA's Future Earth Science Satellite Missions

(including partnerships, as of May 2018)

National Aeronautics and Space Administration



This graphic depicts the majority of NASA's planned (i.e., future) Earth science missions as of May 2018, extending out to 2023. Image credit: NASA

FUTURE MISSIONS		LAUNCH DATE/ INSTRUMENT DELIVERY	SCIENCE FOCUS
CLARREO[2] Pathfinder on ISS[15]	*clarreo.larc.nasa.gov/about-pathfinder.html*	2020	Solar Reflectance
ECOSTRESS[5] on ISS[15] (EVI[7]-2)	*ecostress.jpl.nasa.gov*	2018	Evapotranspiration
EMIT[6] on ISS[15] (EVI[7]-4)	*eospso.gsfc.nasa.gov/missions/earth-surface-mineral-dust-source-investigation-evi-4*	2022	Aerosol Mineral Composition
GEDI[9] on ISS[15] (EVI[7]-2)	*gedi.umd.edu*	2018	Vegetation Canopy
GeoCARB[10] (EVM[8]-2)	*eospso.gsfc.nasa.gov/missions/geostationary-carbon-cycle-observatory-evm-2*	2022	Greenhouse Gases from Geostationary Orbit
ICESat-2[13]	*icesat-2.gsfc.nasa.gov*	2018	Polar Ice
Landsat 9 (USGS[33])	*landsat.gsfc.nasa.gov*	2020	Land Imaging
MAIA[17] (EVI[7]-3)	*www.jpl.nasa.gov/missions/multi-angle-imager-for-aerosols-maia*	2021	Atmospheric Pollution and Human Health
NI-SAR[18] (ISRO[14])	*nisar.jpl.nasa.gov*	2021	Synthetic Aperature Radar: L-Band and S-Band
OCO-3[21] on ISS[15]	*www.jpl.nasa.gov/missions/orbiting-carbon-observatory-3-oco-3*	2019	Atmospheric Carbon Dioxide
PACE[23]	*pace.oceansciences.org/mission.htm*	2022/2023	Ocean Biology and Ecology
PREFIRE[24] (EVI[7]-4)	*eospso.gsfc.nasa.gov/missions/polar-radiant-energy-far-infrared-experiment-evi-4*	2021	Arctic Radiant Energy
SWOT[29]	*swot.jpl.nasa.gov*	2022	Wide-Swath Ocean and Hydrology Altimeter
TEMPO[30] (EVI[7]-1)	*science.nasa.gov/missions/tempo*	2019	Atmospheric Pollution from Geostationary Orbit
TROPICS[31] (EVI[7]-3)	*tropics.ll.mit.edu/CMS/tropics*	2020	Cubesats for Precipitation and Storm Intensity

1 CALIPSO: Cloud-Aerosol Lidar and Infrared Pathfinder Satellite Observation
2 CLARREO Pathfinder: Climate Absolute Radiance and Refractivity Observatory Pathfinder
3 CYGNSS: Cyclone Global Navigation Satellite System
4 DSCOVR: Deep Space Climate Observatory
5 ECOSTRESS: ECOsystem Spaceborne Thermal Radiometer Experiment on Space Station.
6 EMIT: Earth Surface Mineral Dust Source Investigation
7 EVI: Earth Venture Instrument series (e.g., TEMPO is EVI-1; ECOSTRESS and GEDI are EVI-2; MAIA and TROPICS are EVI-3; EMIT and PREFIRE are EVI-4)
8 EVM: Earth Venture Full Orbital Mission series (e.g., CYGNSS is EVM-1; GeoCARB is EVM-2)
9 GEDI: Global Ecosystem Dynamics Investigation
10 GeoCARB: Geostationary Carbon Cycle Observatory
11 GPM: Global Precipitation Measurement
12 GRACE-FO: Gravity Recovery and Climate Experiment Follow-On
13 ICESat-2: Ice, Cloud, and land Elevation Satellite-2
14 ISRO: Indian Space Research Organization
15 ISS: International Space Station
16 LIS: Lightning Image Sensor
17 MAIA: Multi-Angle Imager for Aerosols
18 NI-SAR: NASA-ISRO Synthetic Aperture Radar
19 NOAA: National Oceanic and Atmospheric Administration
20 OCO-2: Orbiting Carbon Observatory 2
21 OCO-3: Orbiting Carbon Observatory 3
22 OSTM/Jason-2: Ocean Surface Topography Mission on Jason-2
23 PACE: Pre-Aerosol, Clouds, and ocean Ecosystem
24 PREFIRE: Polar Radiant Energy in the Far Infrared Experiment
25 SMAP: Soil Moisture Active Passive
26 SORCE: Solar Radiation and Climate Experiment
27 Suomi NPP: Suomi National Polar-orbiting Partnership
28 SAGE III: Stratospheric Aerosol and Gas Experiment III
29 SWOT: Surface Water and Ocean Topography
30 TEMPO: Tropospheric Emissions: Monitoring of Pollution
31 TROPICS: Time-Resolved Observations of Precipitation structure and storm Intensity with a Constellation of Smallsats
32 TSIS-1: Total and Spectral Solar Irradiance Sensor
33 USGS: United States Geological Survey

NP-2018-06-214-GSFC