National Aeronautics and
Space Administration

SCIENCE PLAN

Steven W. Clarke
Director, Joint Agency Satellite Division

October 22, 2014
NASA Supply Chain Quality Assurance Conference

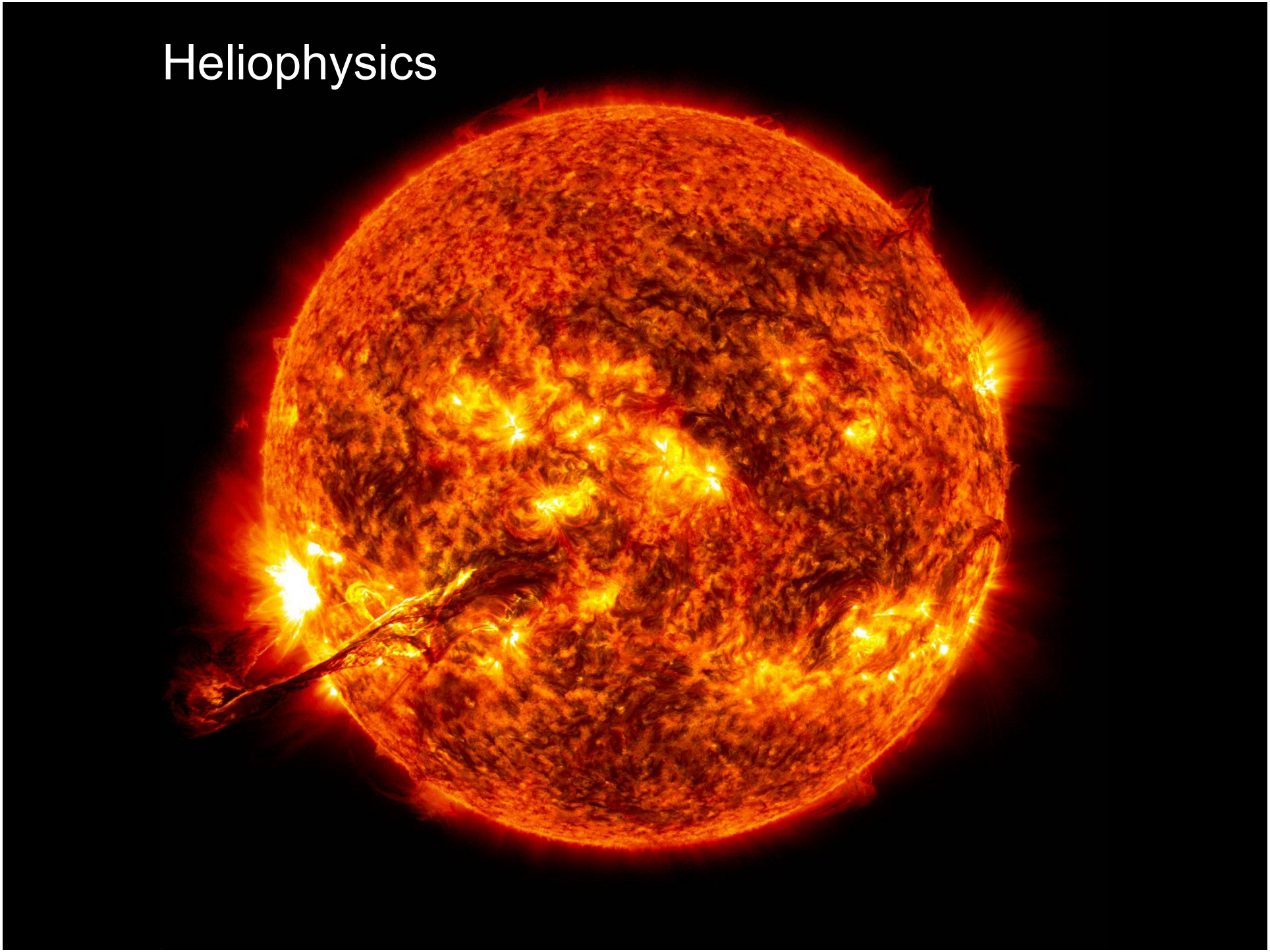
Science Mission Directorate

NASA Headquarters

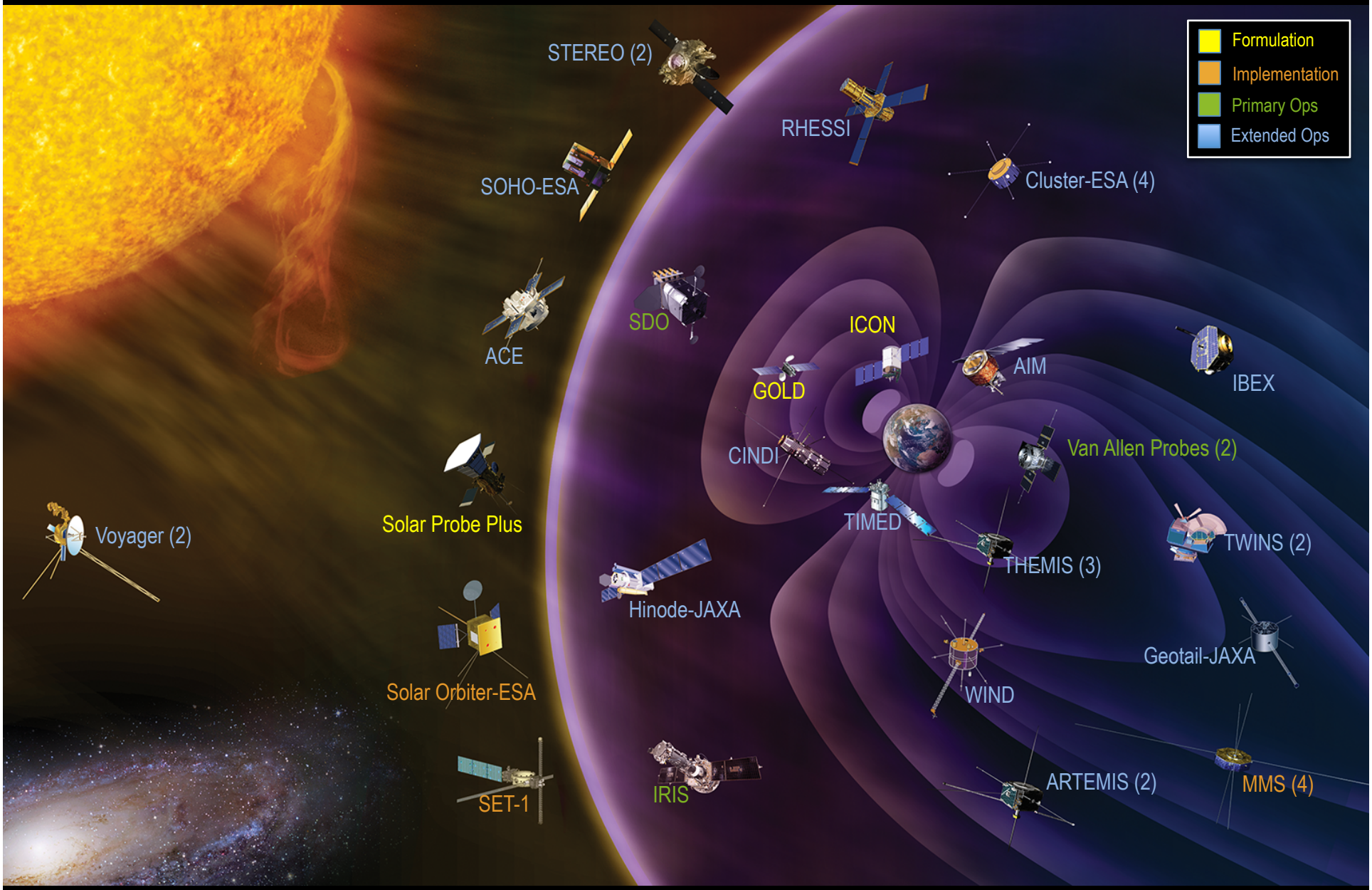
Our Journey of Discovery

NASA SCIENCE

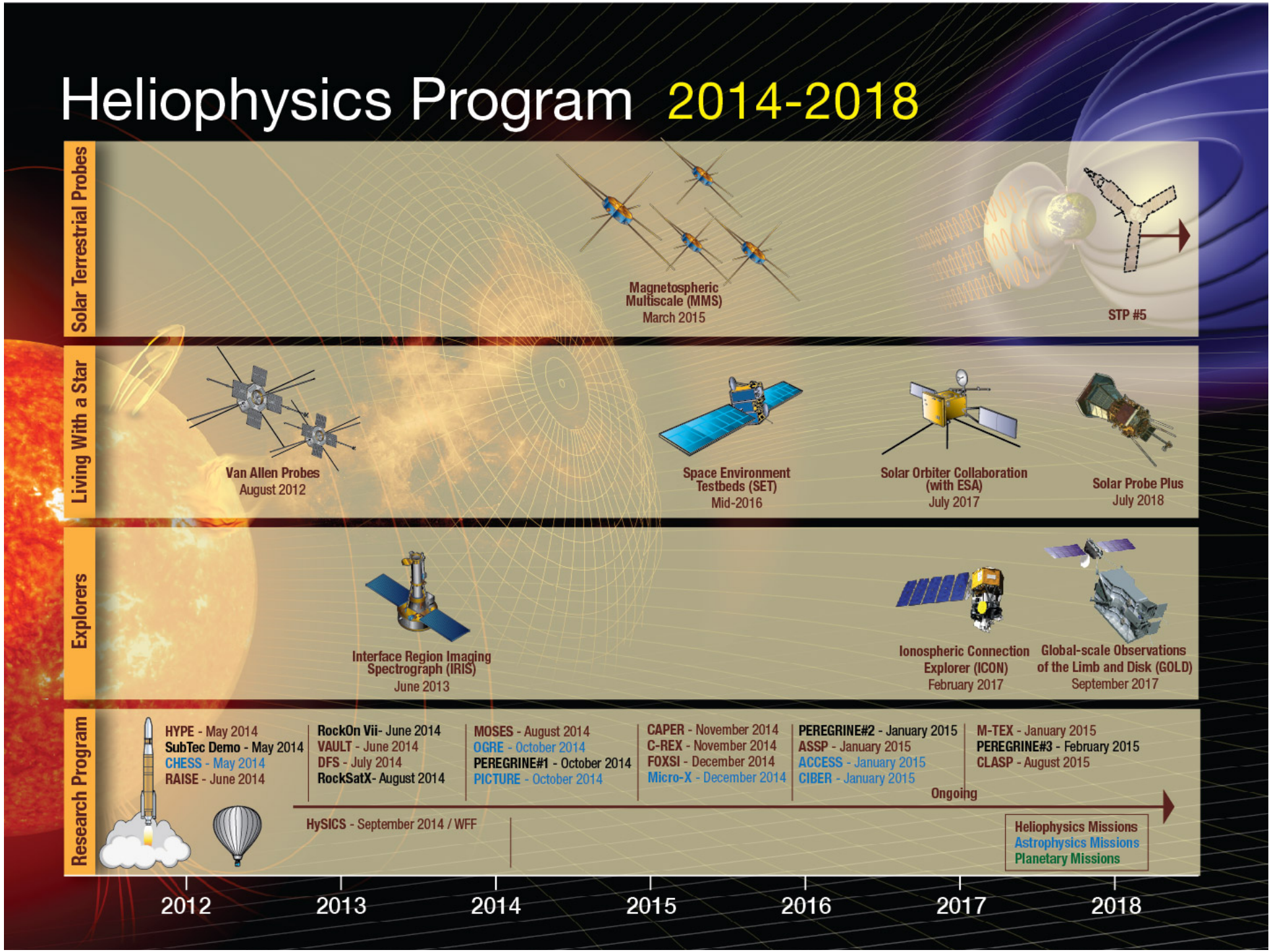
Heliophysics



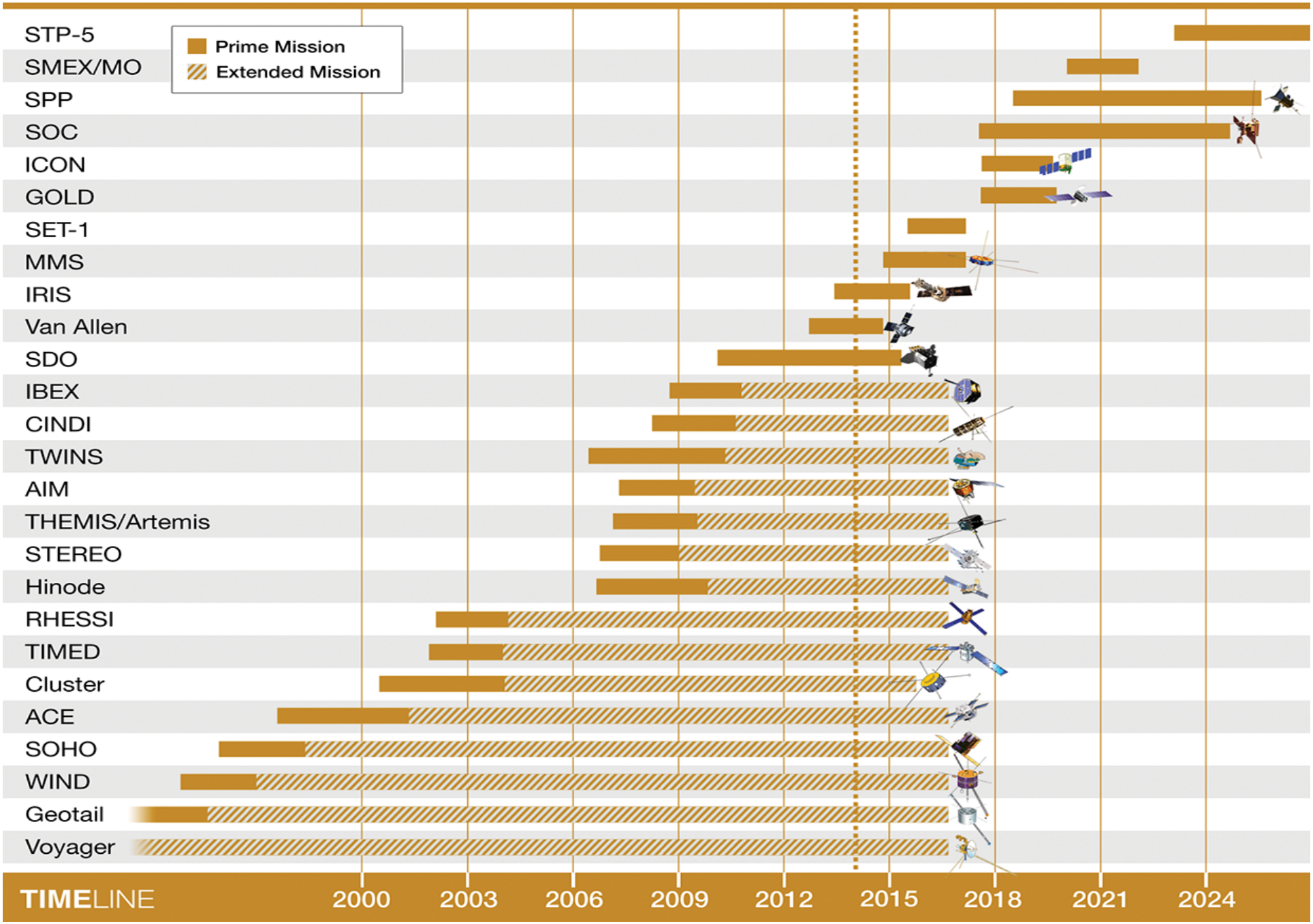
Heliophysics Missions



Heliophysics Program 2014-2018

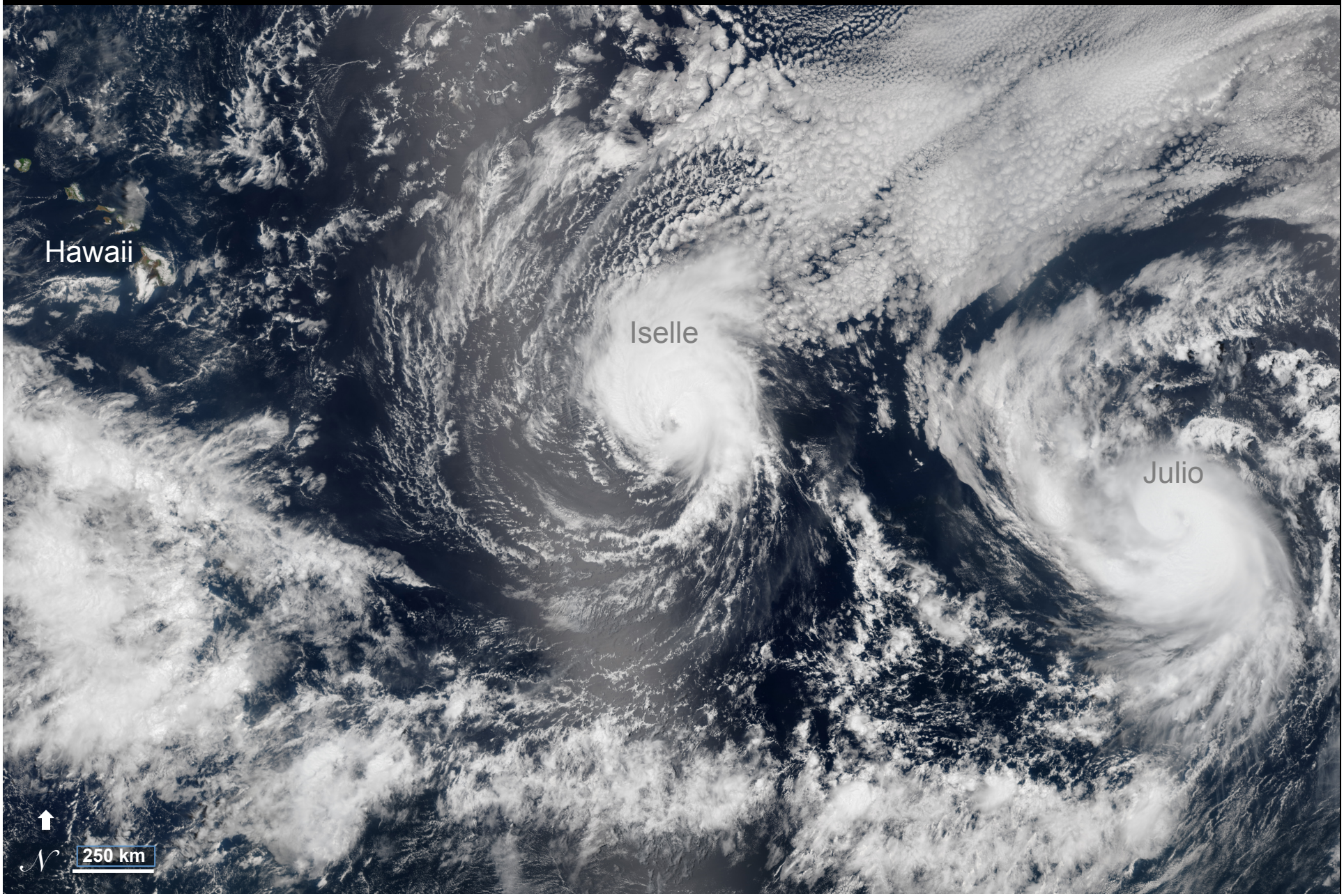


Heliophysics Timeline

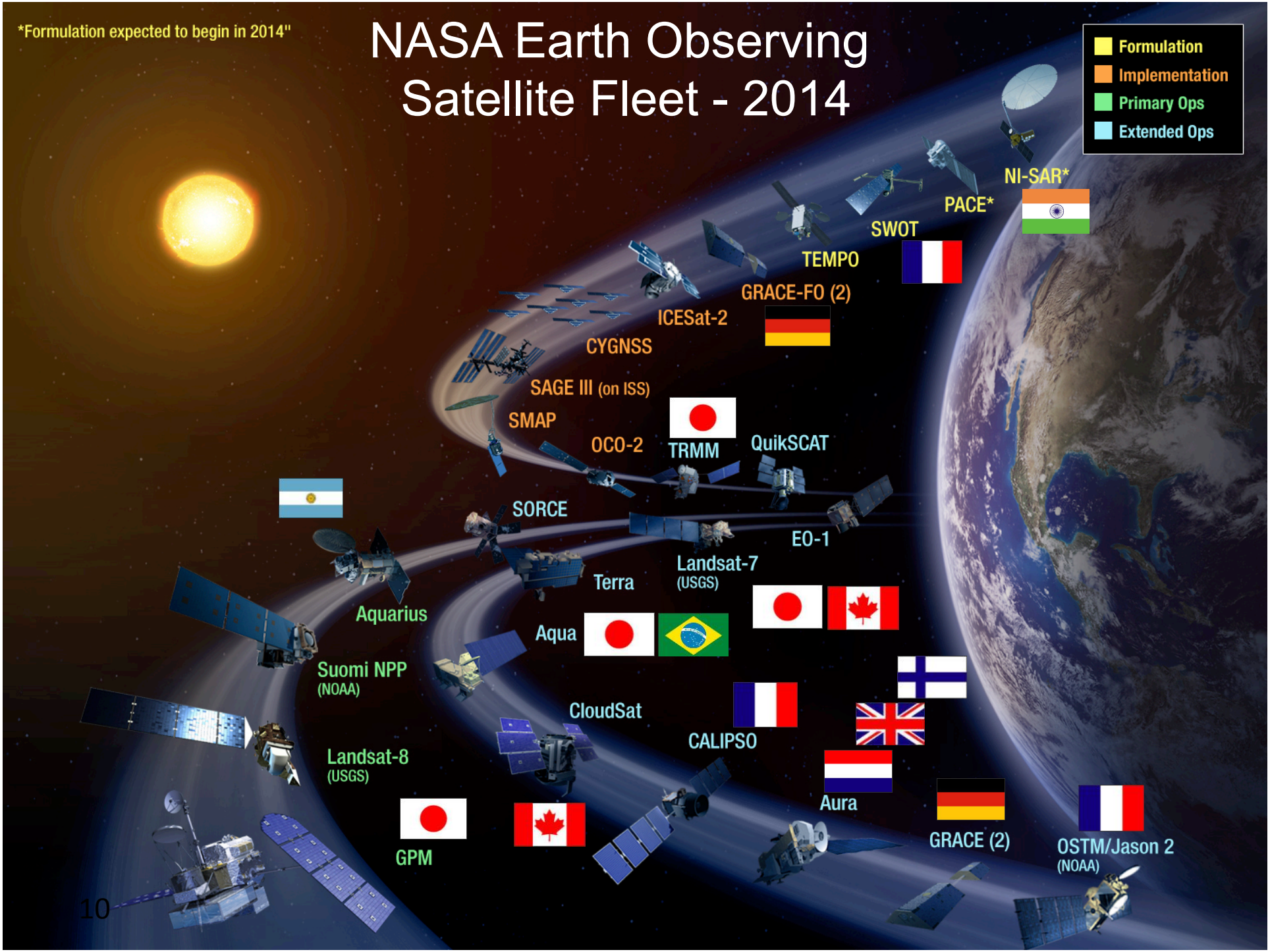


Earth Science

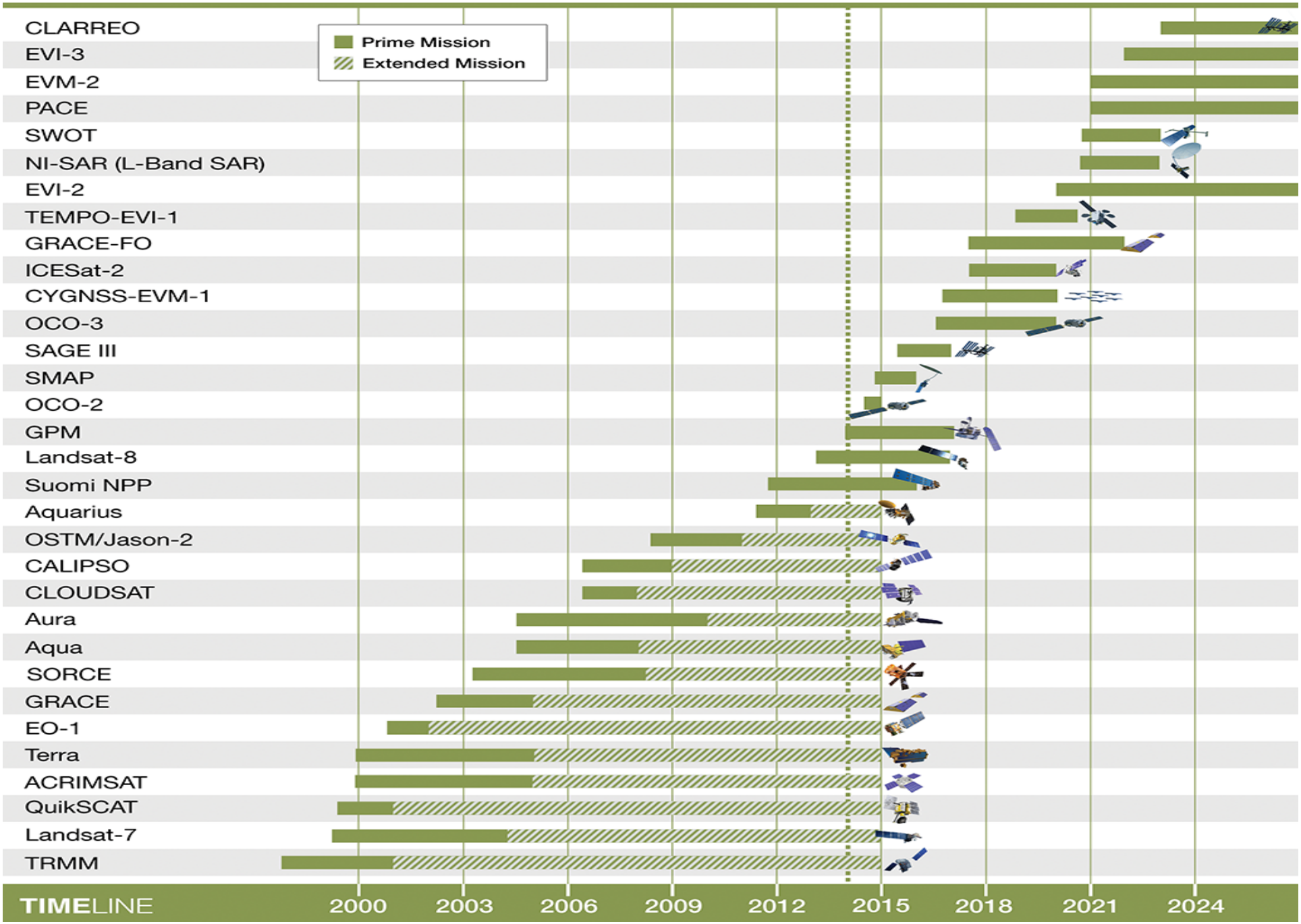
Hurricanes Iselle and Julio Head toward Hawaii

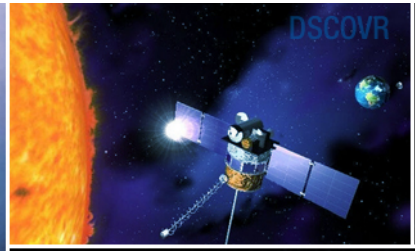


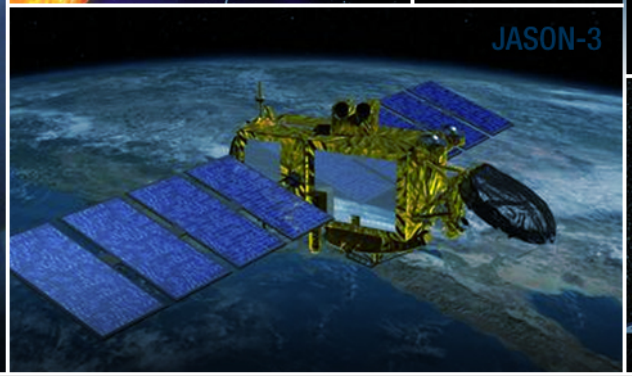
NASA Earth Observing Satellite Fleet - 2014

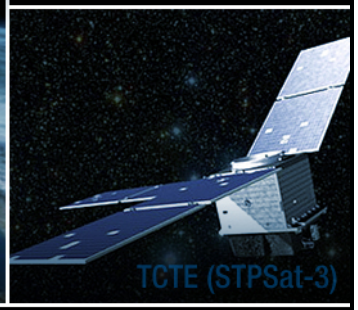


Earth Science Timeline

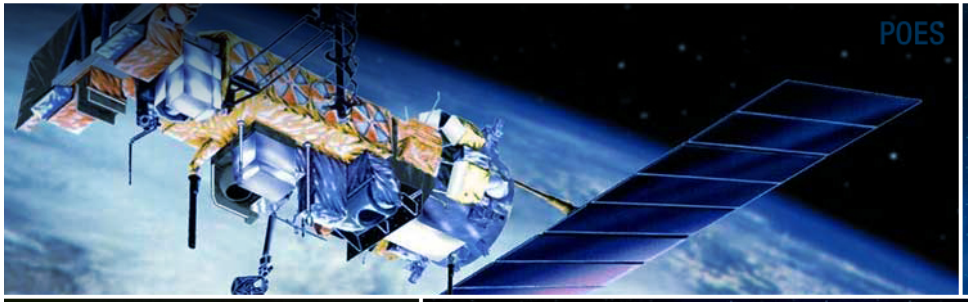


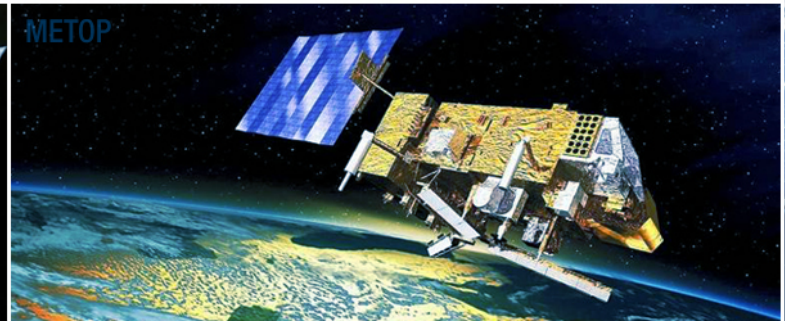




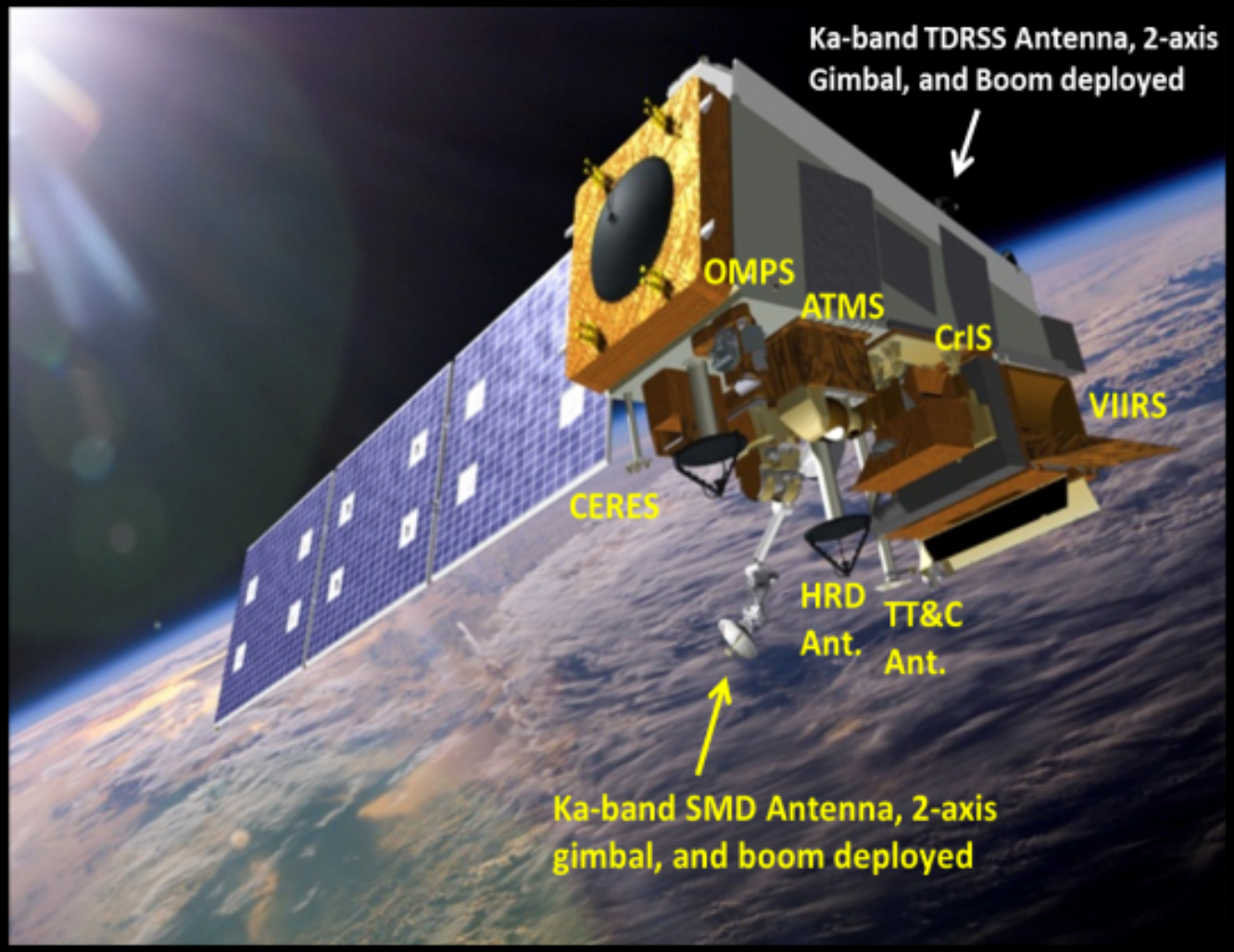


Joint Agency Satellite Division

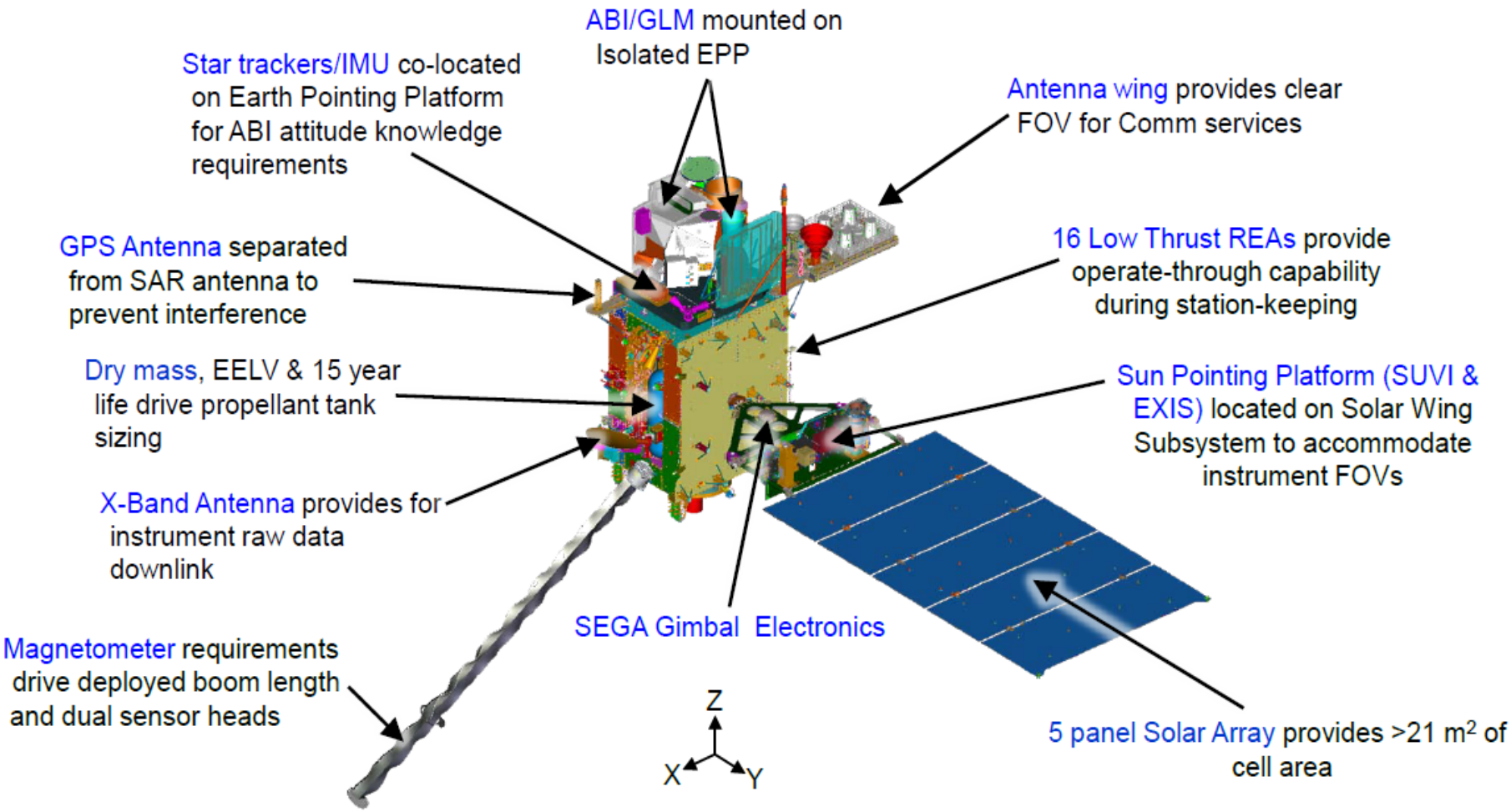




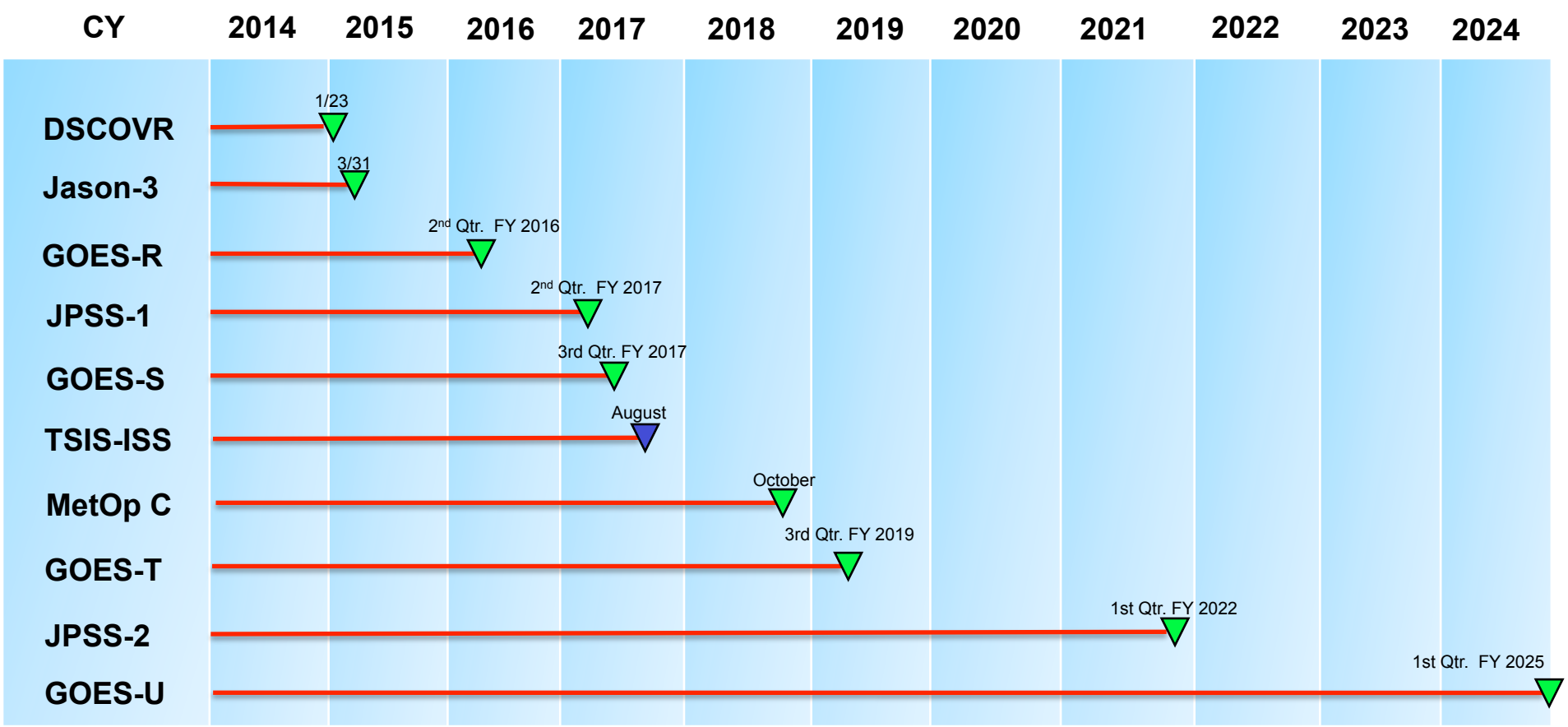
JPSS-1 Joint Polar Satellite System



Geostationary Operational Environmental Satellite
GOES-R Series Spacecraft Configuration



Reimbursable Launch Commitment Dates



Launch Commitment Date

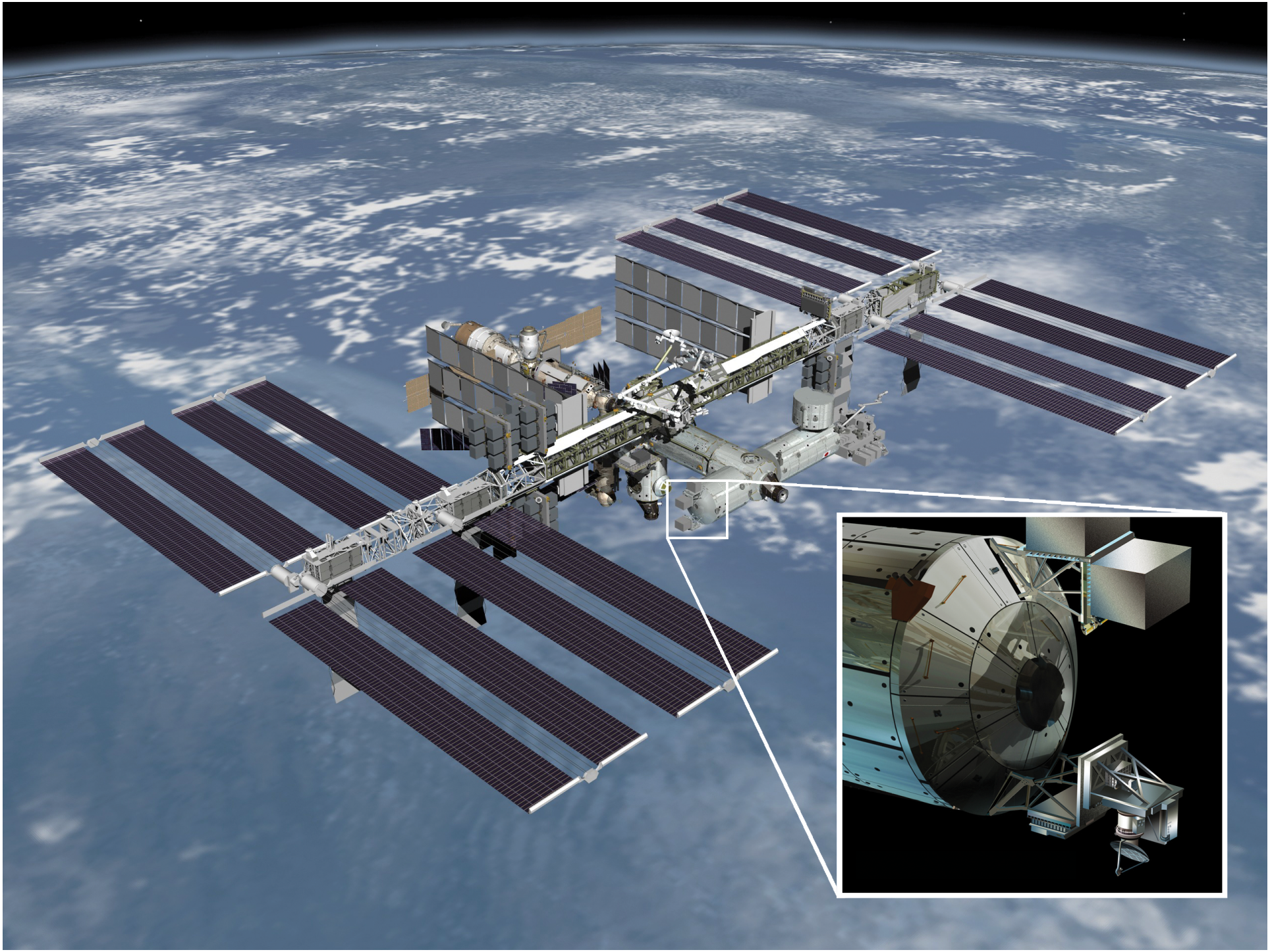
Launch Date
(for planning purposes only)

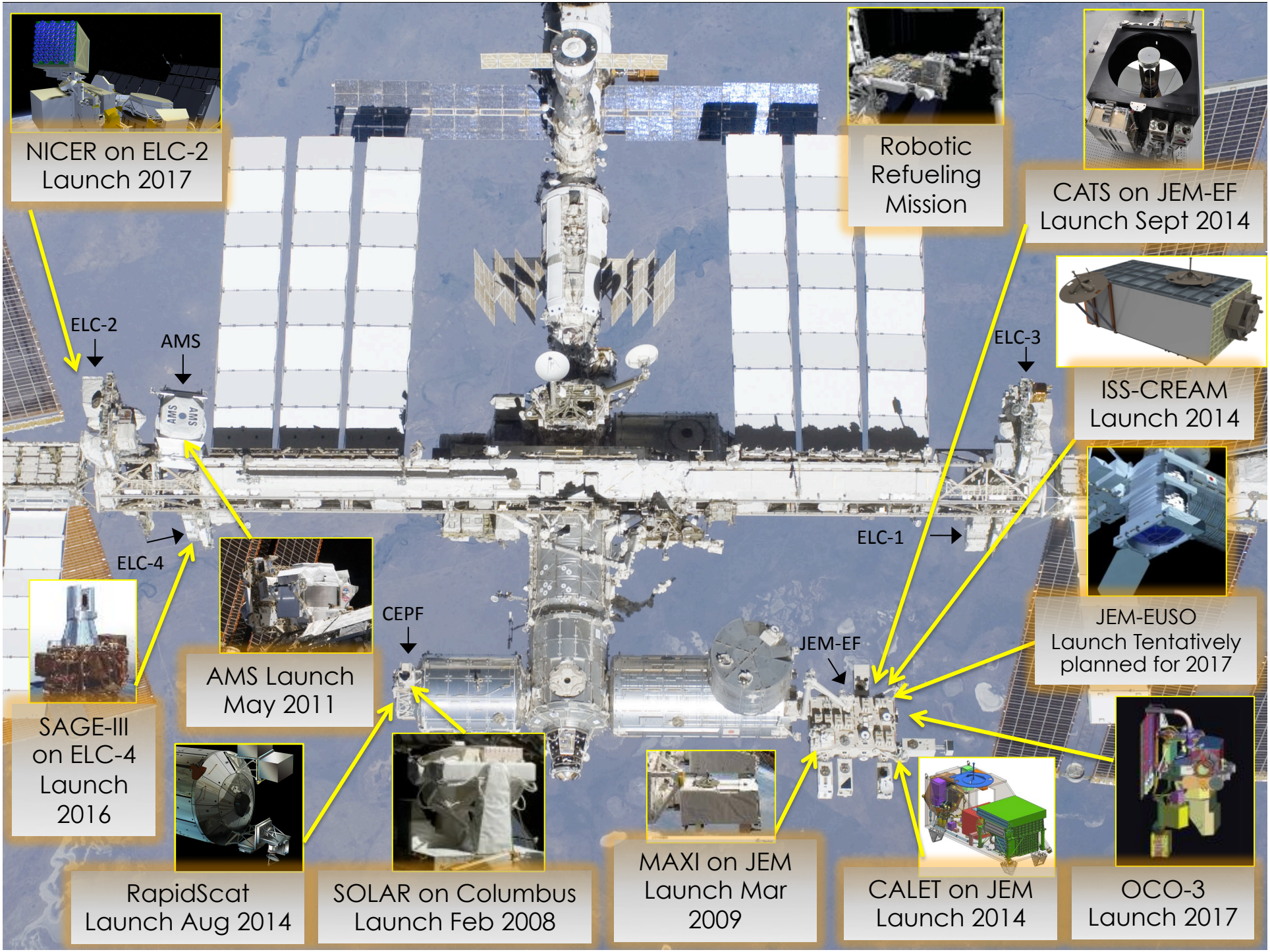
Launched

International Space Station

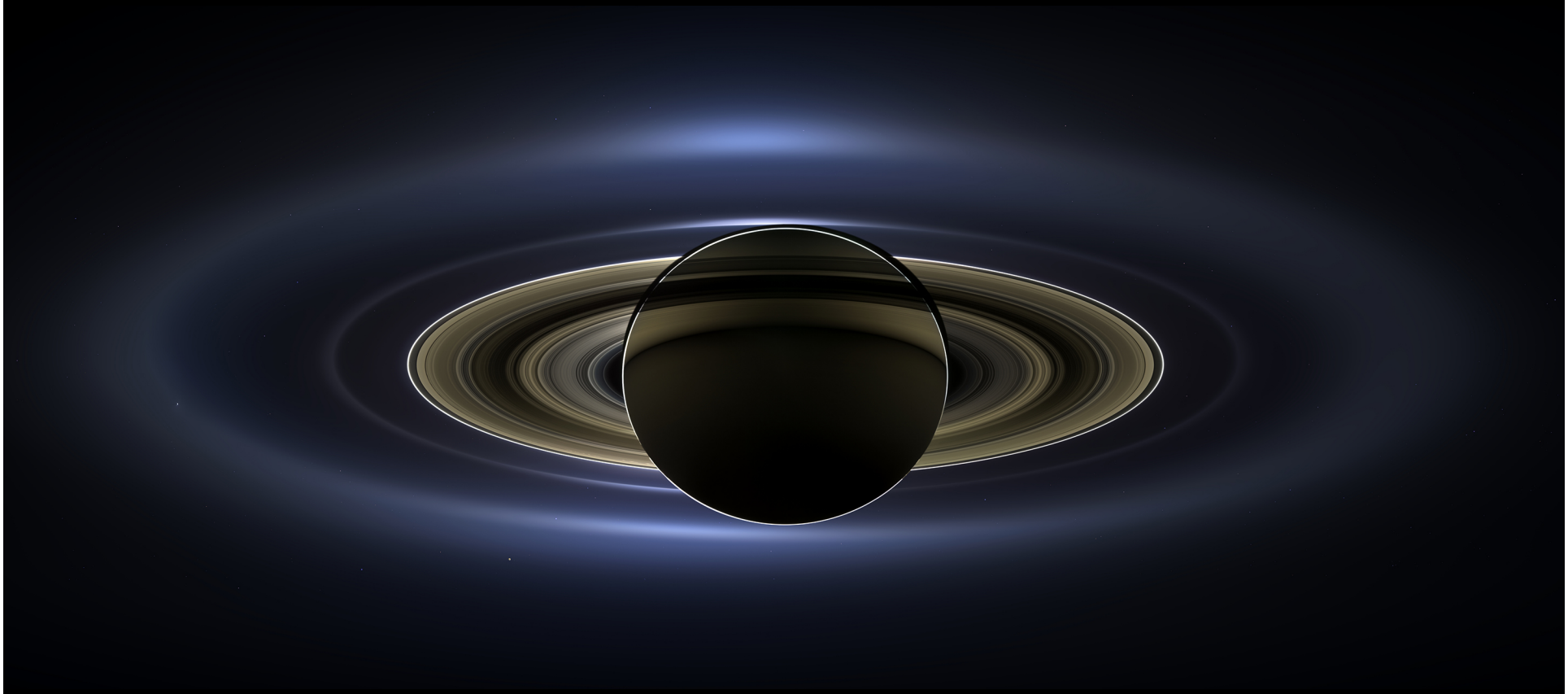
Science Instruments

External Logistics Carriers – ELC-1, ELC-2, ELC-3
External Stowage Platforms – ESP-3
Alpha Magnetic Spectrometer
Columbus External Payload Facility
Kibo External Payload Facility



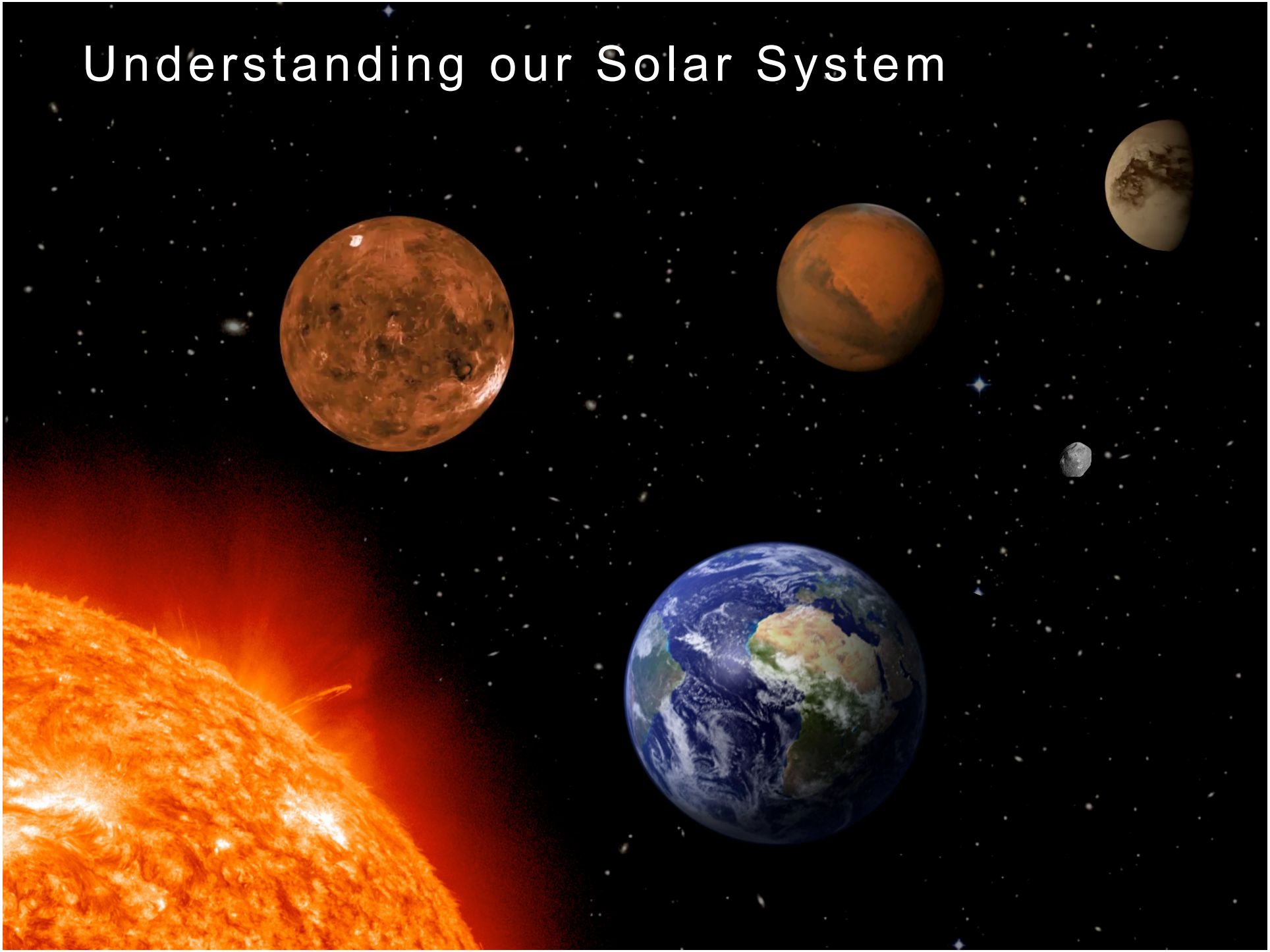

NICER on ELC-2
Launch 2017
Robotic
Refueling
Mission
CATS on JEM-EF
Launch Sept 2014
ELC-2
AMS
ELC-3
ISS-CREAM
Launch 2014
ELC-4
ELC-1
JEM-EUSO
Launch Tentatively
planned for 2017
CEPF
JEM-EF
SAGE-III
on ELC-4
Launch
2016
AMS Launch
May 2011
RapidScat
Launch Aug 2014
SOLAR on Columbus
Launch Feb 2008
MAXI on JEM
Launch Mar
2009
CALET on JEM
Launch 2014
OCO-3
Launch 2017

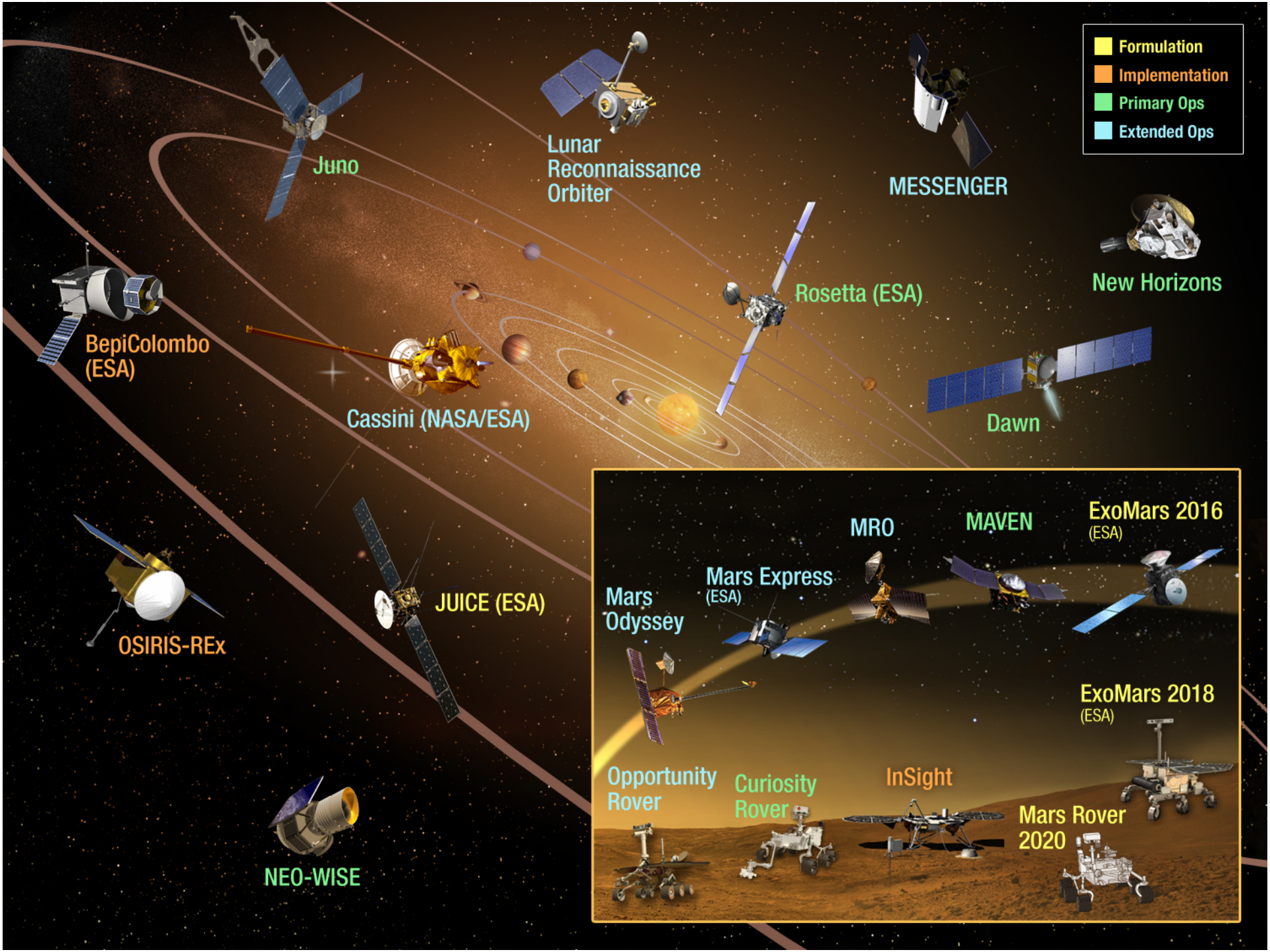
Planetary Science



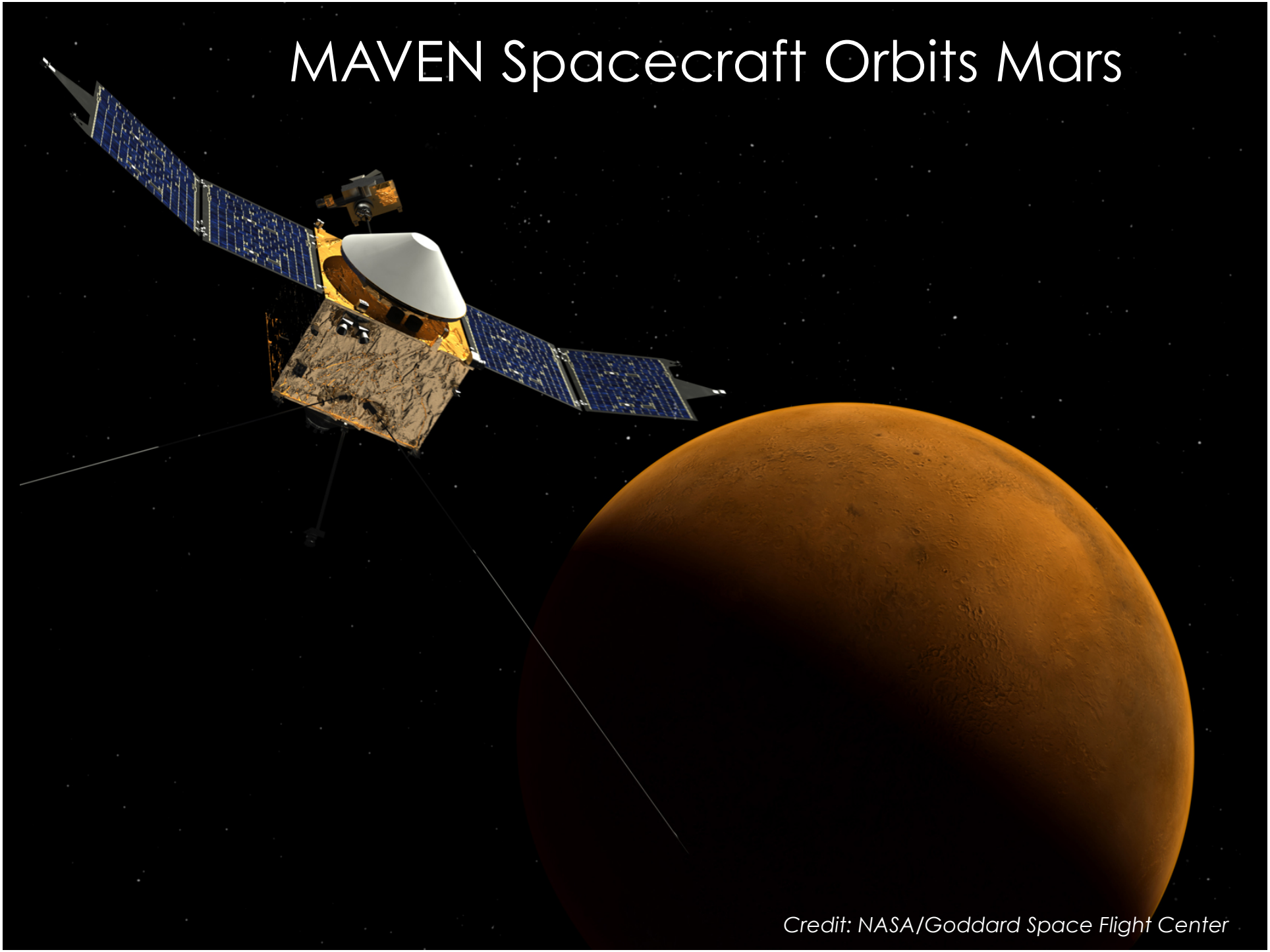
Credit: NASA/JPL-Caltech/Space Science Institute

Understanding our Solar System



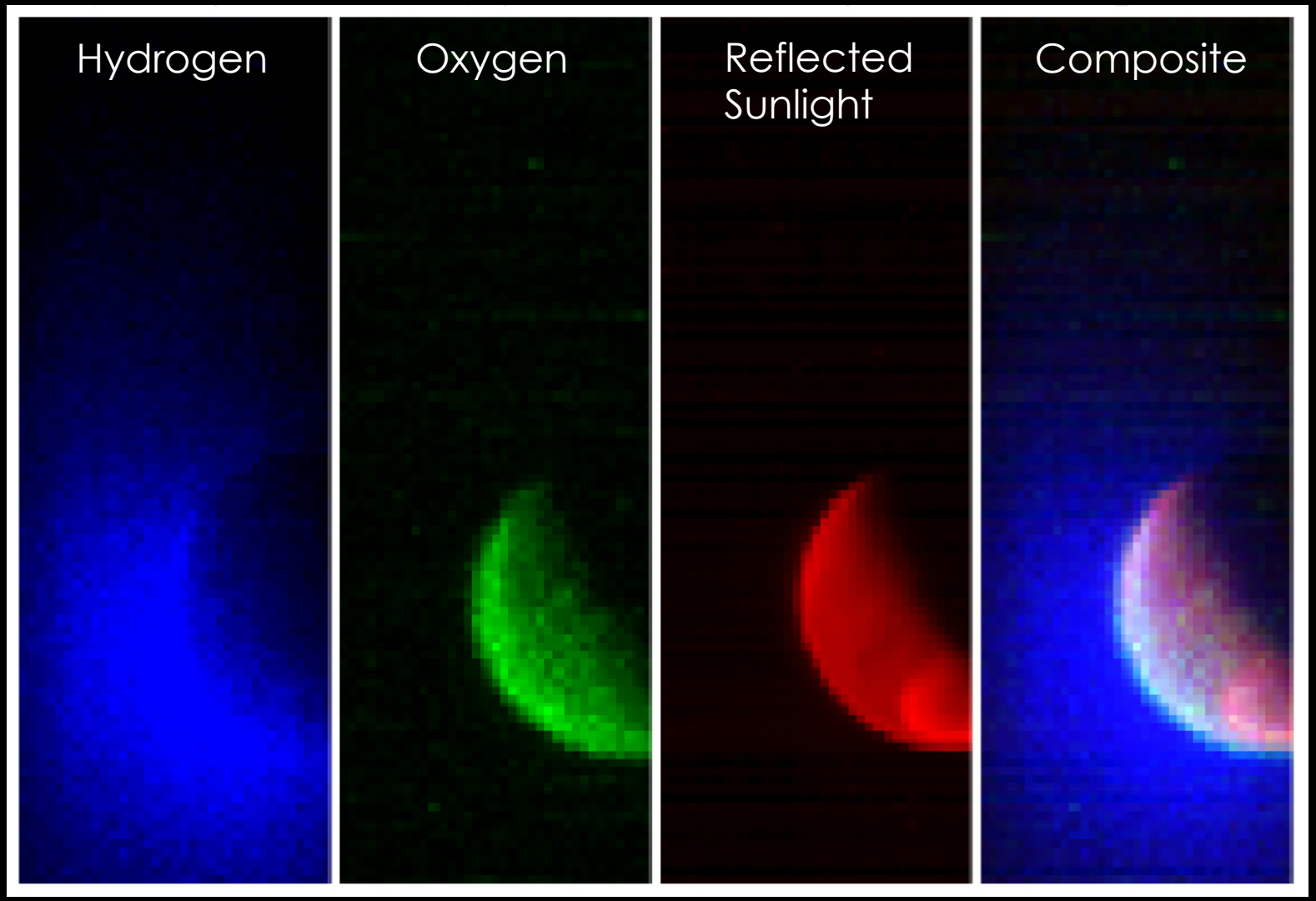

Formulation
Implementation
Primary Ops
Extended Ops
Juno
Lunar Reconnaissance Orbiter
MESSENGER
New Horizons
Rosetta (ESA)
BepiColombo (ESA)
Cassini (NASA/ESA)
Dawn
OSIRIS-REx
JUICE (ESA)
NEO-WISE
MRO
MAVEN
ExoMars 2016 (ESA)
Mars Express (ESA)
Mars Odyssey
ExoMars 2018 (ESA)
Opportunity Rover
Curiosity Rover
InSight
Mars Rover 2020

MAVEN Spacecraft Orbits Mars



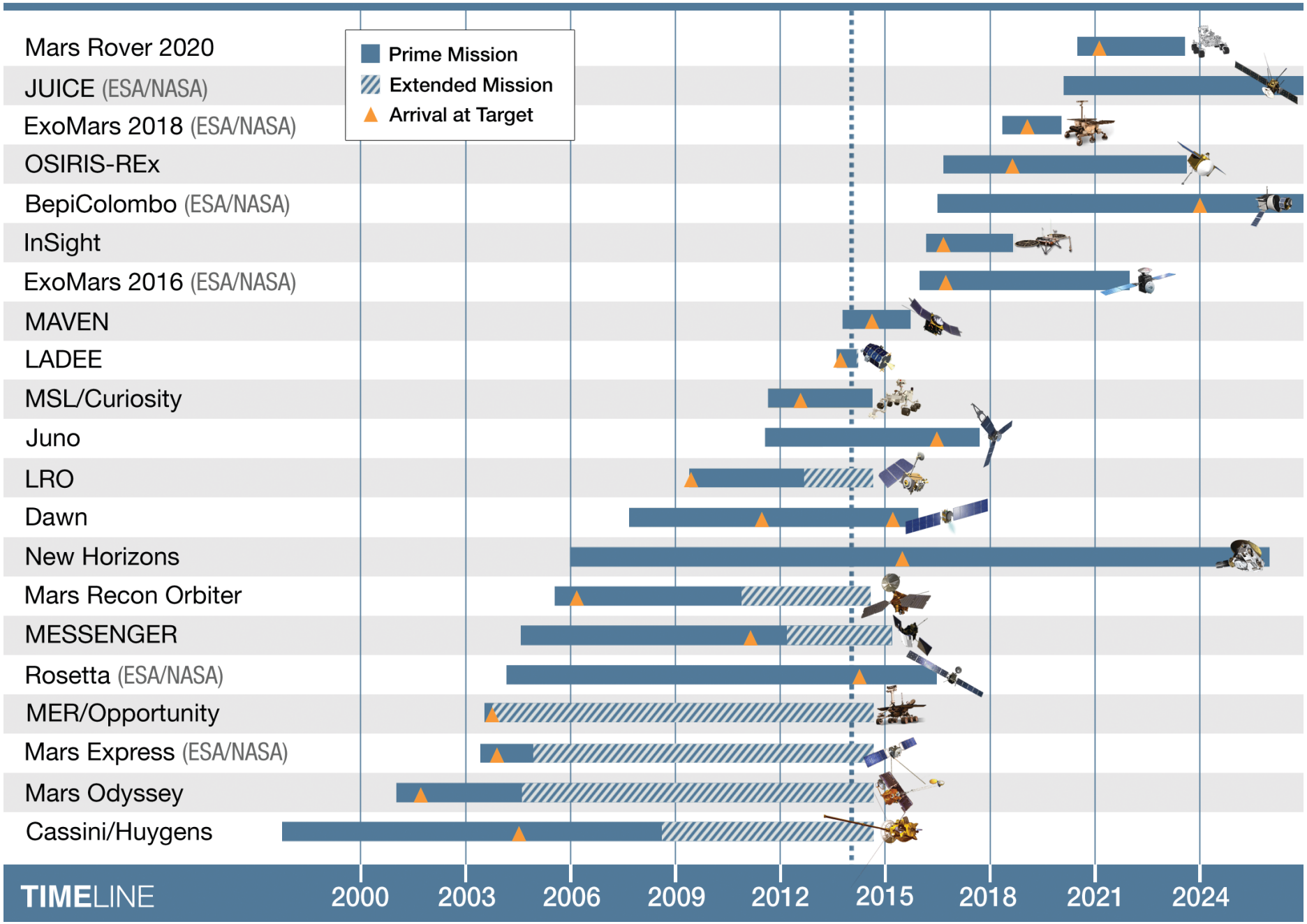
Credit: NASA/Goddard Space Flight Center

MAVEN Spacecraft Returns First Mars Observations

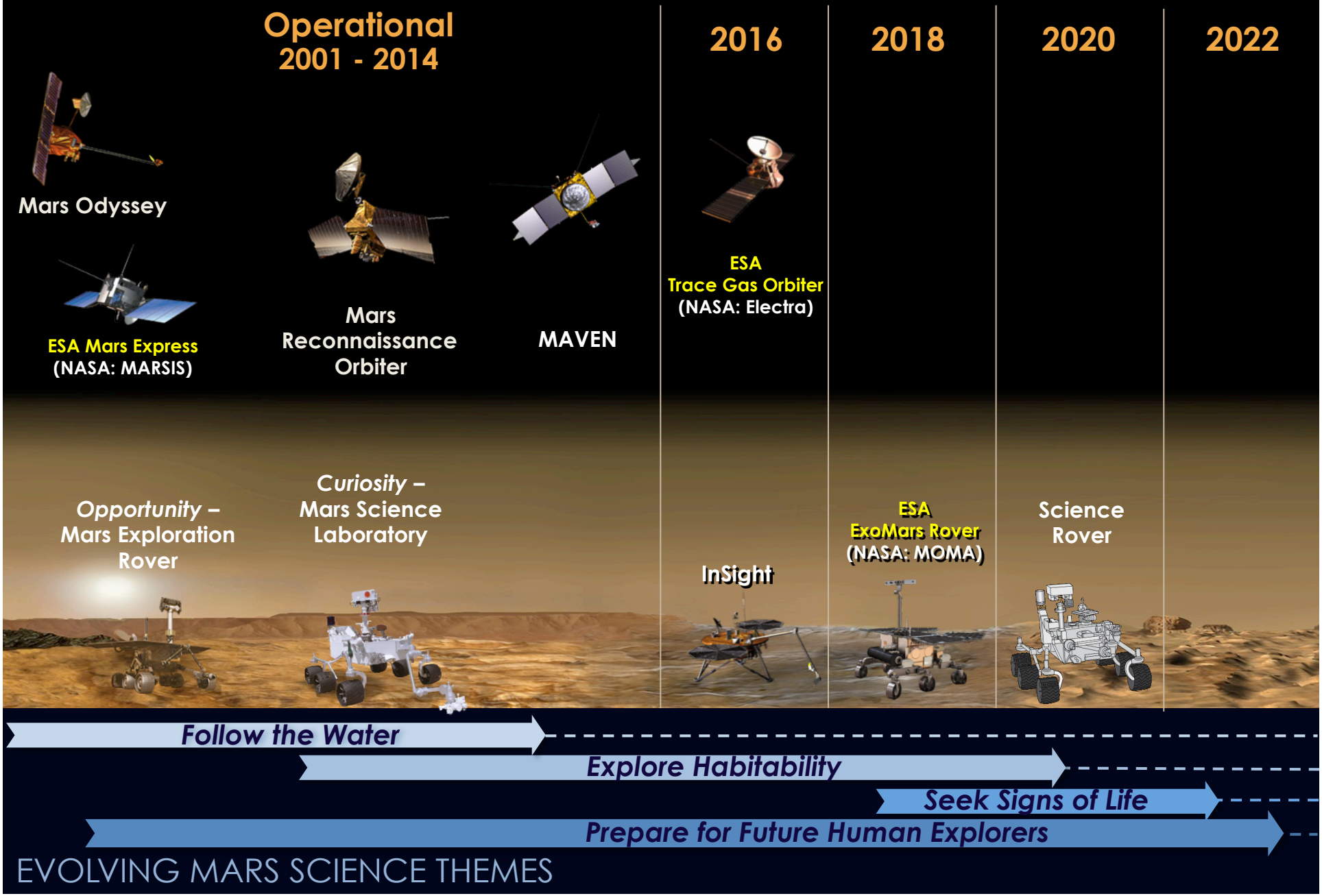


Credit: Laboratory for Atmospheric and Space Physics /University of Colorado and NASA

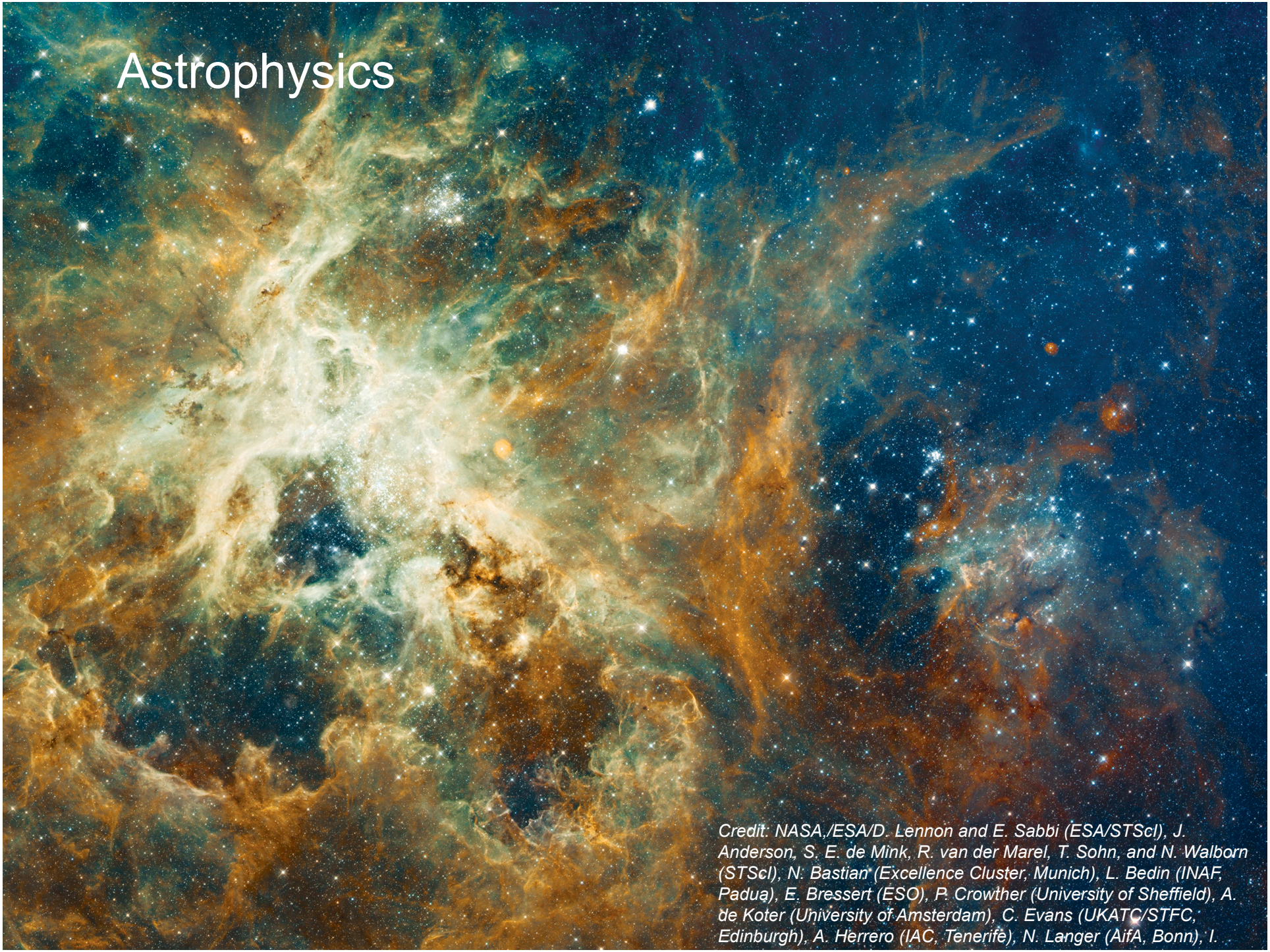
Planetary Science Timeline



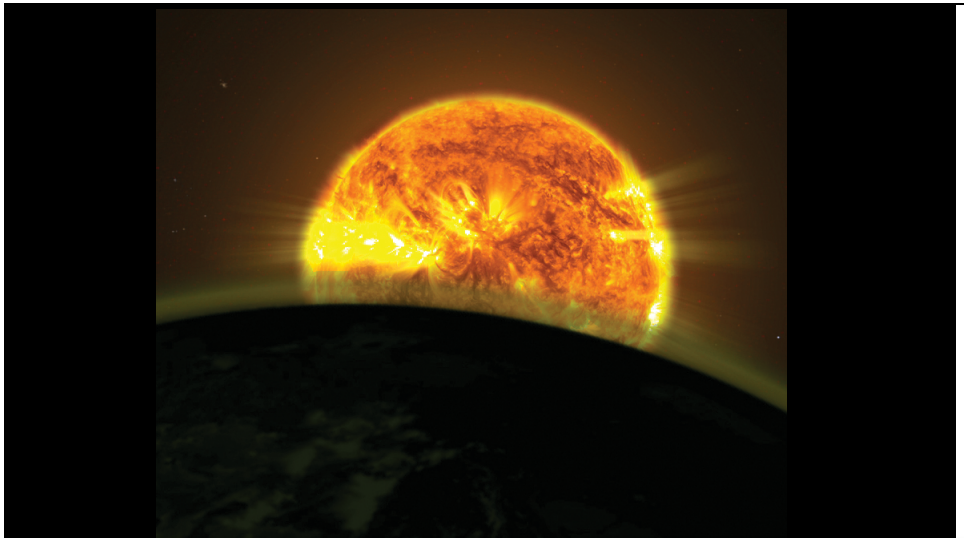
Current & Future Mars Missions



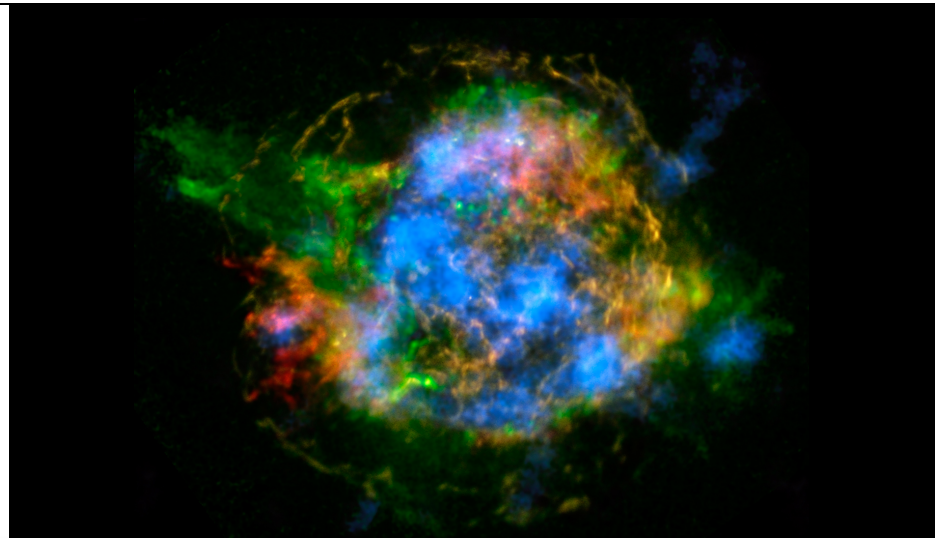
Astrophysics



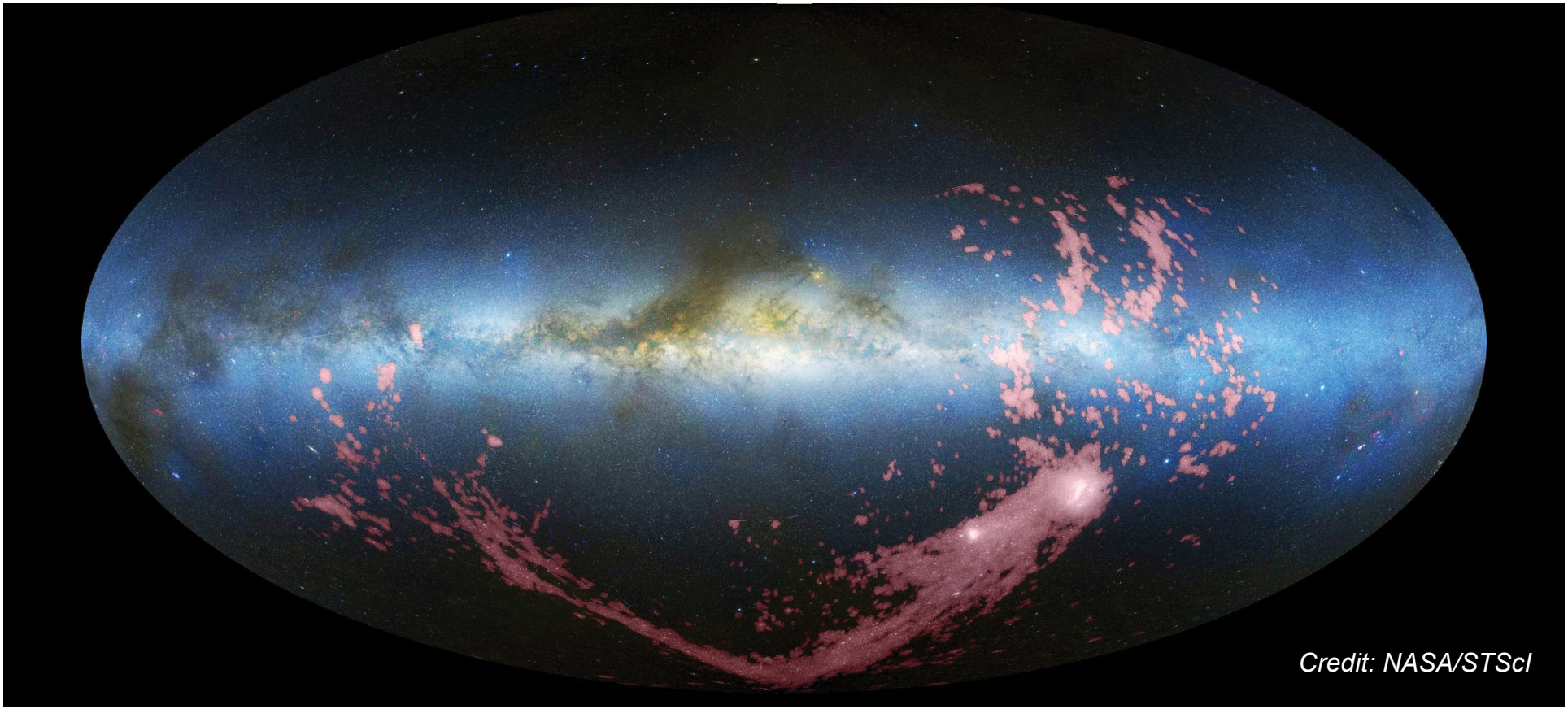
Credit: NASA,/ESA/D. Lennon and E. Sabbi (ESA/STScI), J. Anderson, S. E. de Mink, R. van der Marel, T. Sohn, and N. Walborn (STScI), N. Bastian (Excellence Cluster, Munich), L. Bedin (INAF, Padua), E. Bressert (ESO), P. Crowther (University of Sheffield), A. de Koter (University of Amsterdam), C. Evans (UKATC/STFC, Edinburgh), A. Herrero (IAC, Tenerife), N. Langer (AifA, Bonn), I.



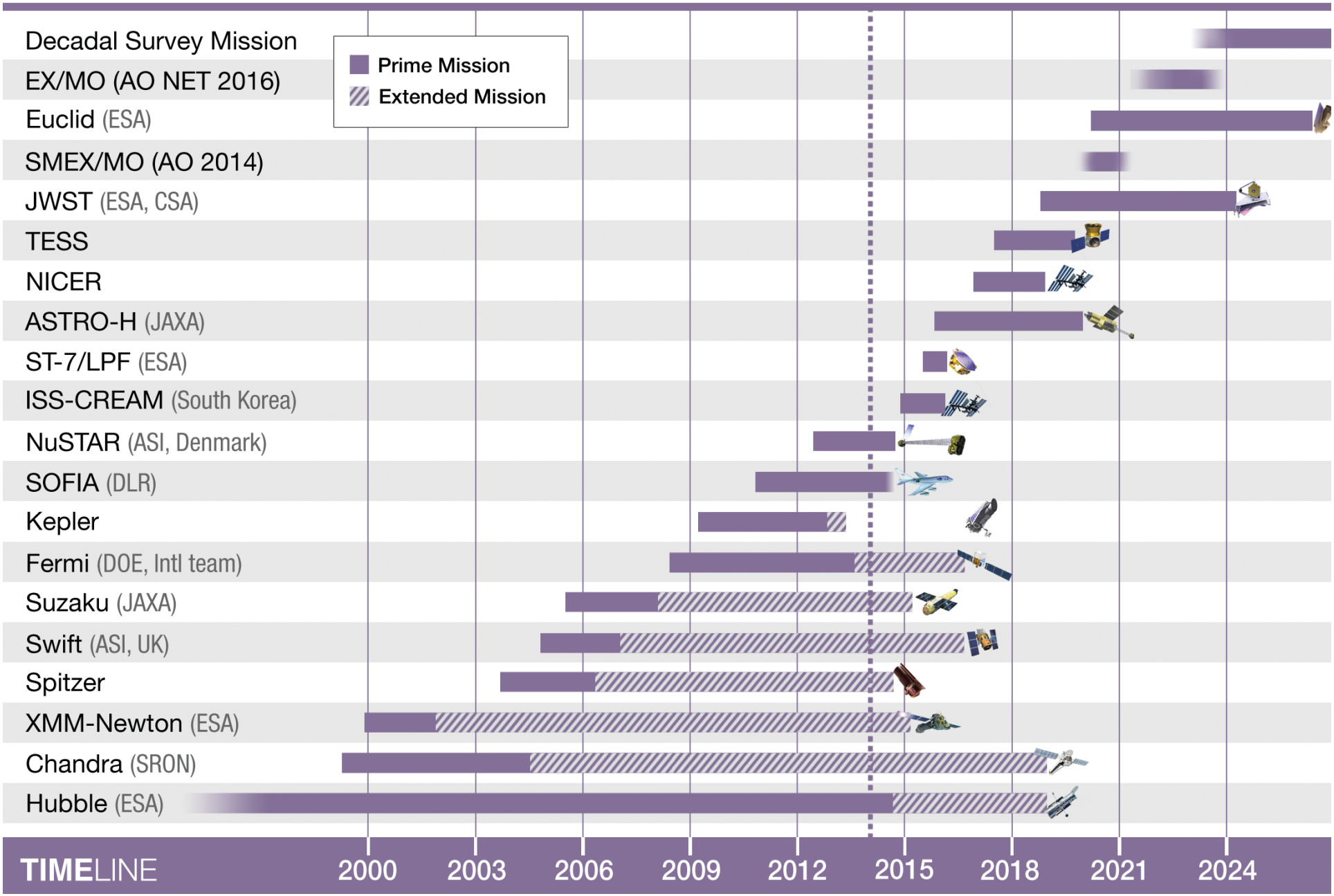
Credit: NASA/GSFC



Credit: NASA/Caltech



Credit: NASA/STScI

Formulation
Implementation
Primary Ops
Extended Ops
XMM-Newton (ESA)
Swift
Suzaku (JAXA)
Fermi
Euclid (ESA)
Hubble
Kepler
JWST
Spitzer
ASTRO-H (JAXA)
Chandra
NICER (on ISS)
TESS
NuSTAR
LISA
Pathfinder (ESA)
SOFIA

Astrophysics Timeline