
National Aeronautics and
Space Administration
NASA
EXPLORE SCIENCE
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MEPAG Meeting
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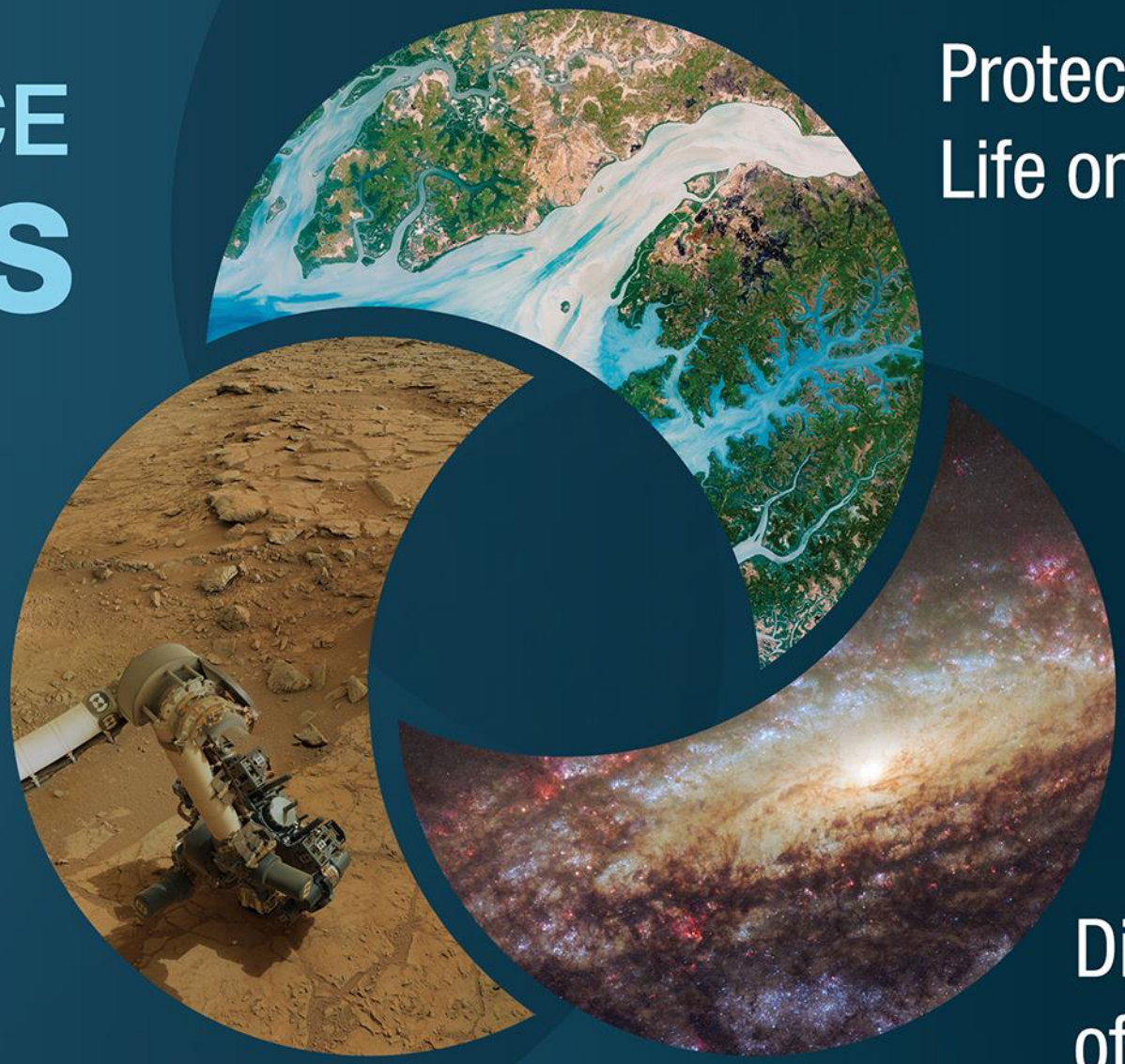
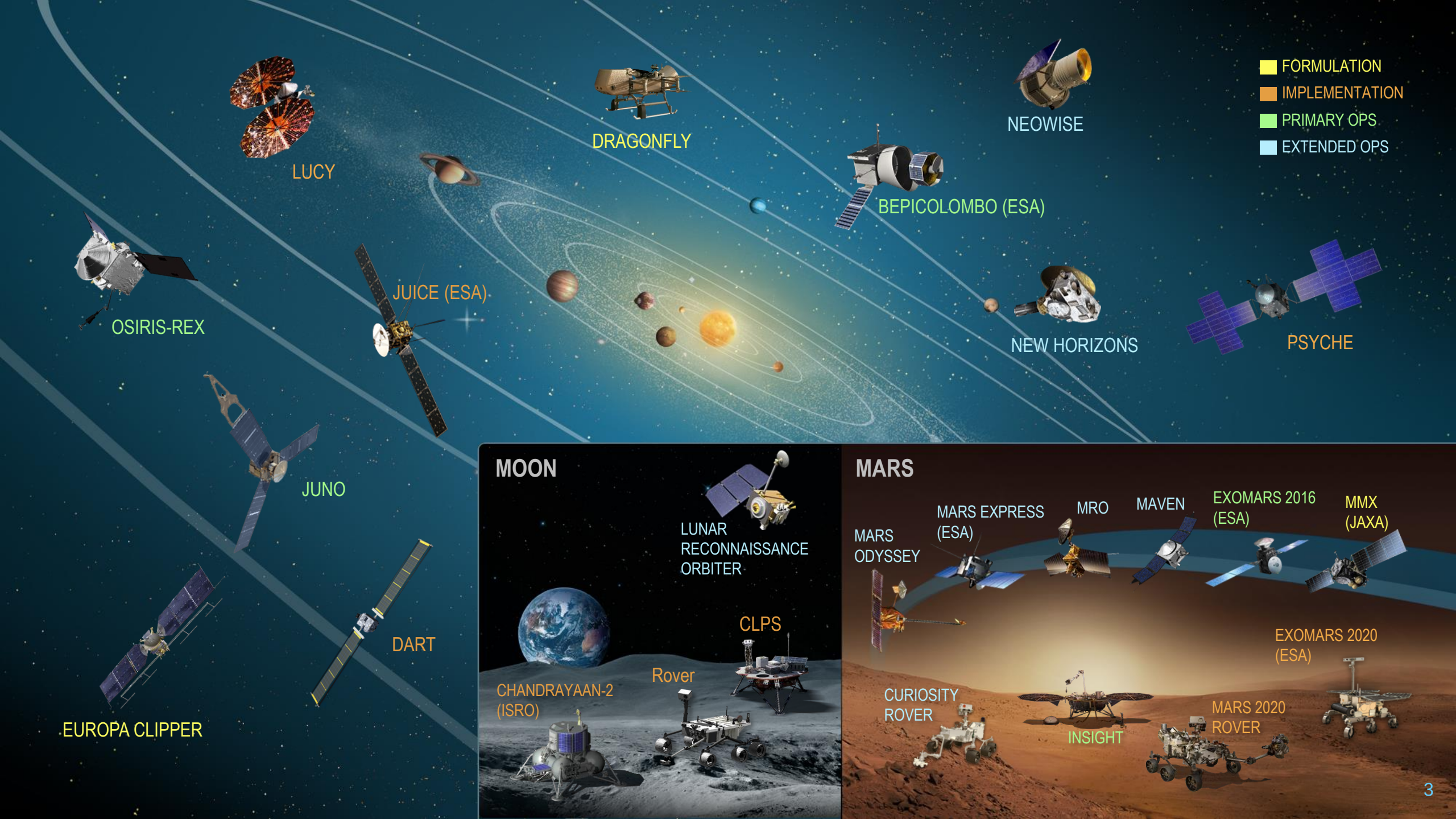
KEY SCIENCE THEMES

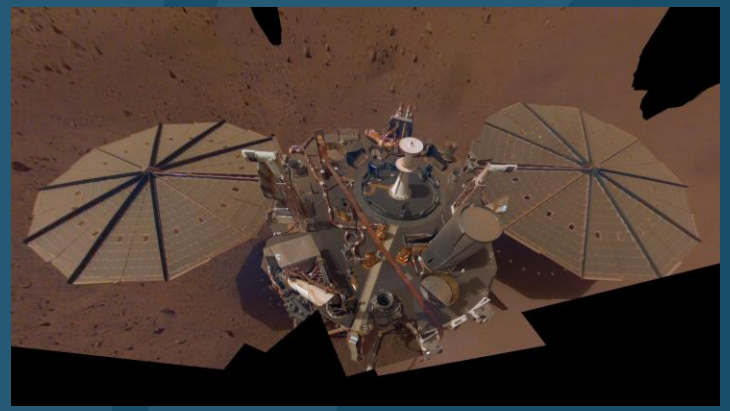


Protect & Improve Life on Earth

Search for Life Elsewhere

Discover Secrets of the Universe

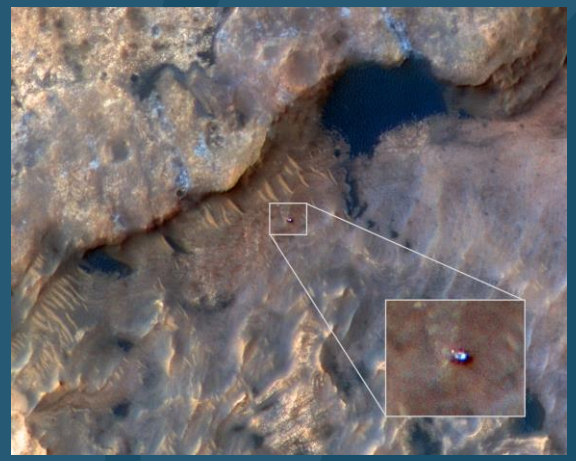

FORMULATION
IMPLEMENTATION
PRIMARY OPS
EXTENDED OPS
LUCY
DRAGONFLY
NEOWISE
BEPICOLOMBO (ESA)
OSIRIS-REX
JUICE (ESA)
NEW HORIZONS
PSYCHE
JUNO
DART
EUROPA CLIPPER
MOON
LUNAR RECONNAISSANCE ORBITER
CLPS
Rover
CHANDRAYAAN-2 (ISRO)
MARS
MARS ODYSSEY
MARS EXPRESS (ESA)
MRO
MAVEN
EXOMARS 2016 (ESA)
MMX (JAXA)
EXOMARS 2020 (ESA)
CURIOSITY ROVER
INSIGHT
MARS 2020 ROVER



InSight selfie mosaic made up of 14 images taken on March 15 and April 11, 2019

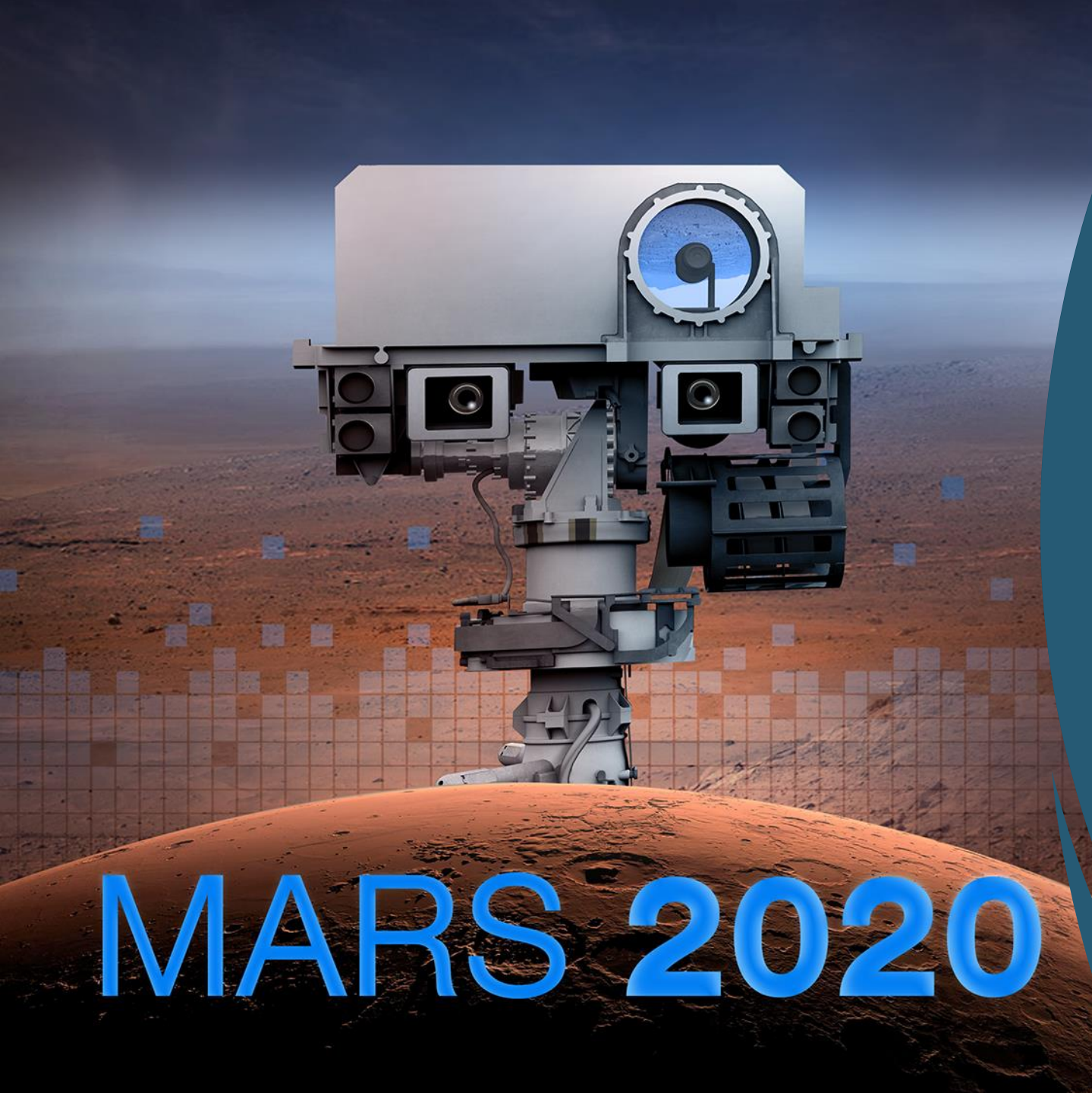
Dec. 19, 2018 – InSight seismometer on Martian surface – first time a spacecraft robotically placed a seismometer onto surface of another planet

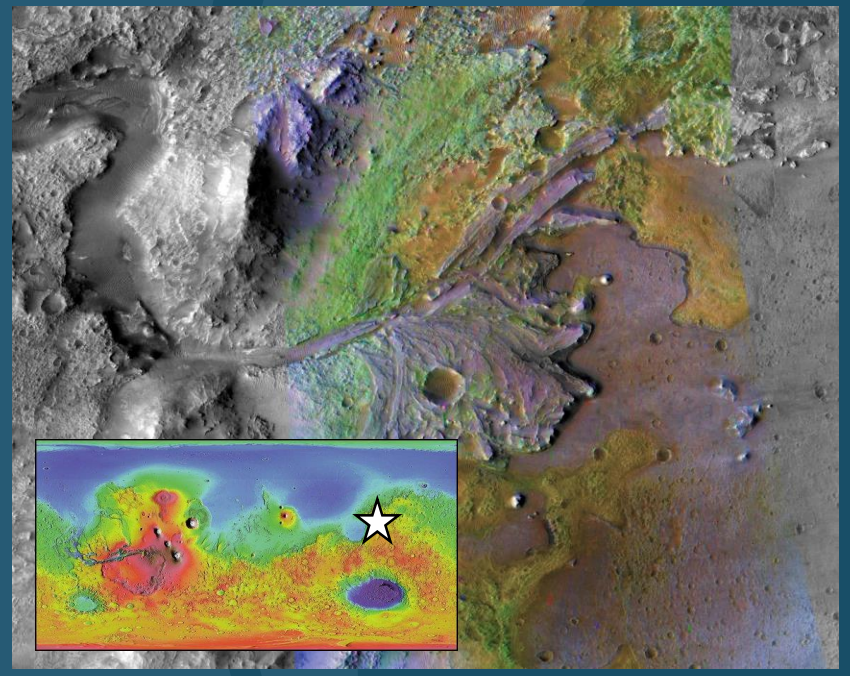
MSL Curiosity



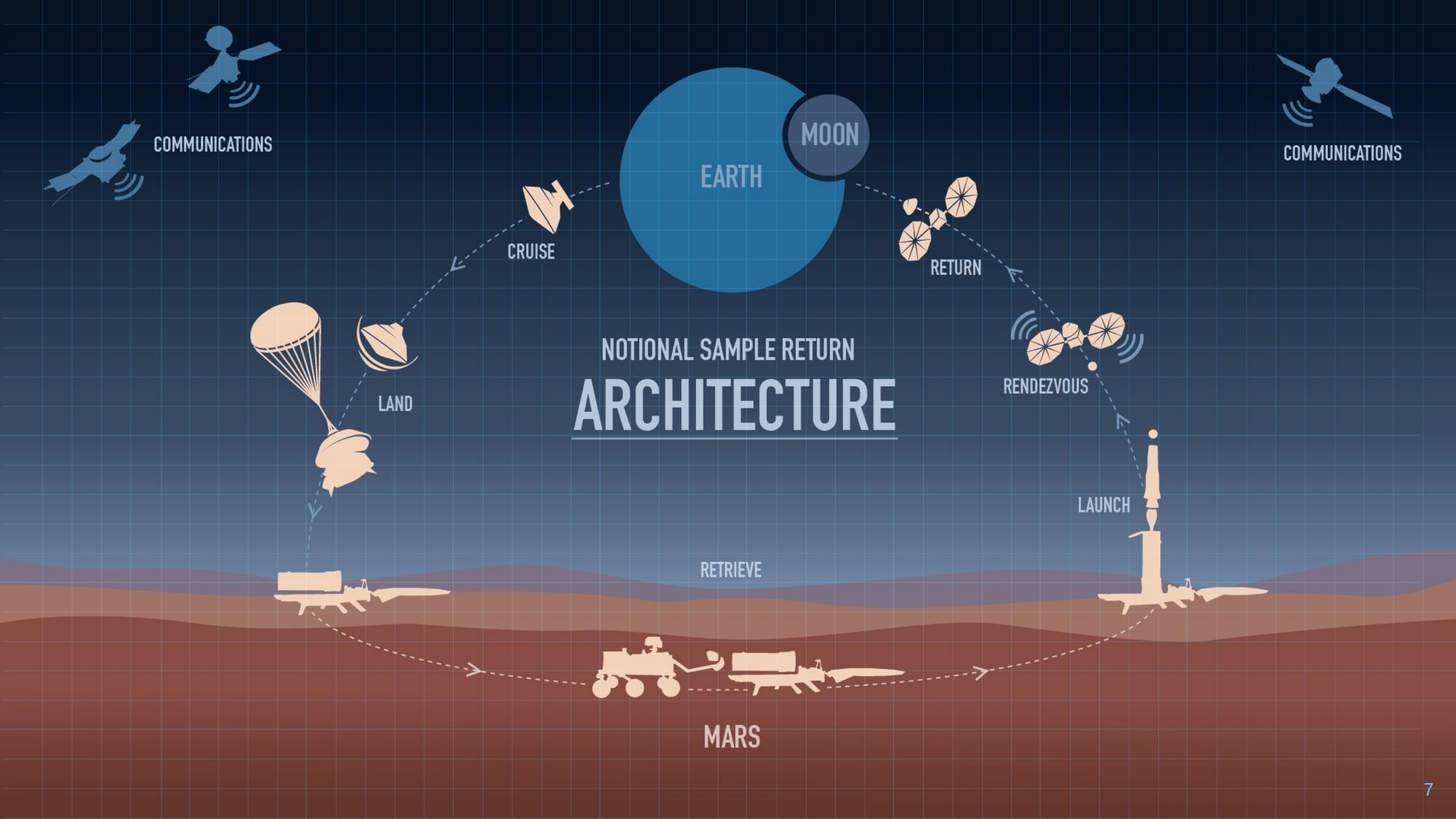
May 31, 2019 – MRO HiRISE spots Curiosity rover at Mars' Woodland Bay

Apr. 6, 2019 – Before and after images from Mastcam of first time Curiosity drilled in the clay-bearing unit



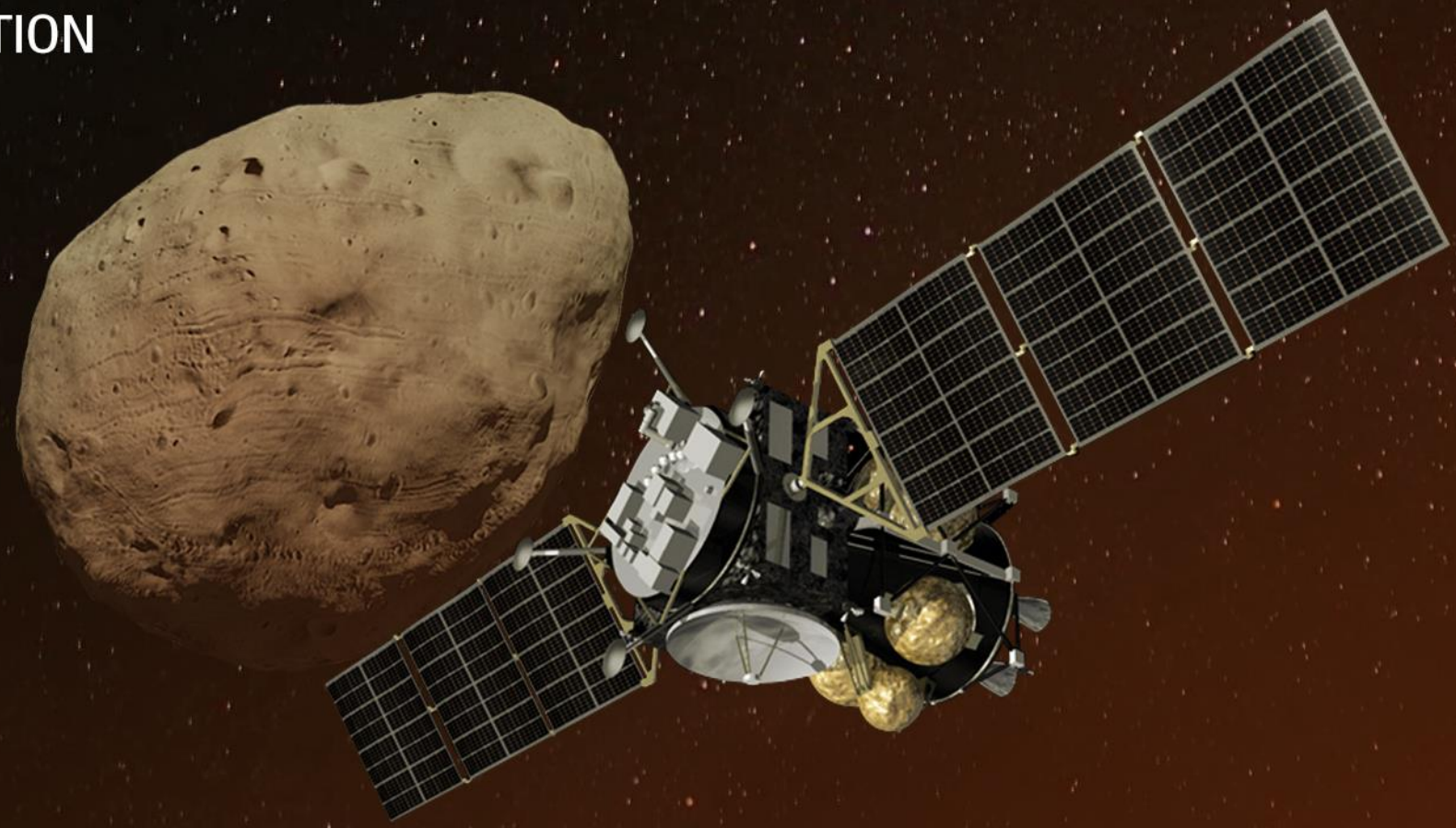


Nov. 19, 2018 - NASA announced landing site for Mars 2020 Rover mission as Jezero Crater

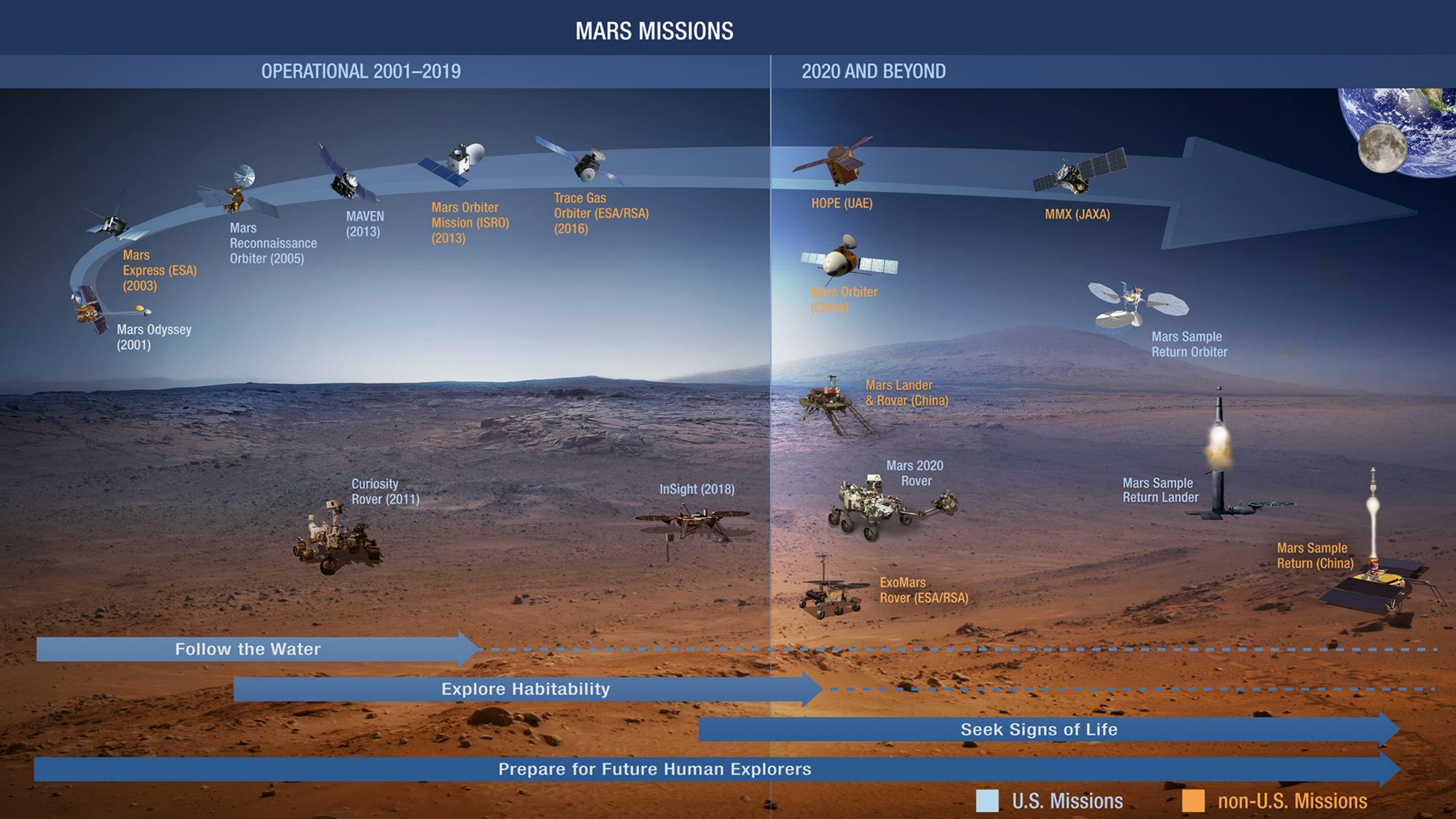

COMMUNICATIONS
COMMUNICATIONS
MOON
EARTH
CRUISE
RETURN
LAND
NOTIONAL SAMPLE RETURN
ARCHITECTURE
RENDEZVOUS
LAUNCH
RETRIEVE
MARS

MMX

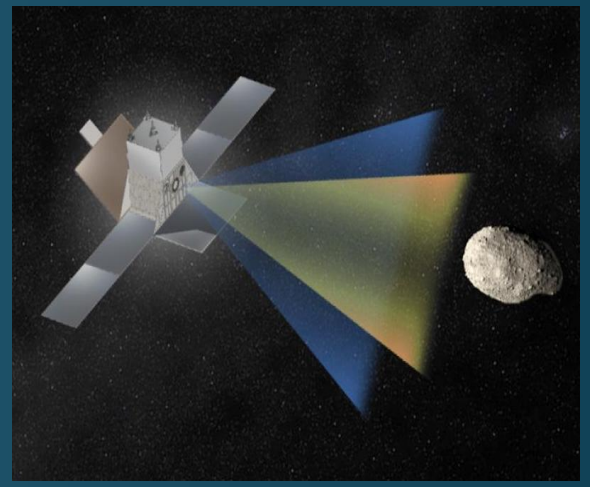
MARTIAN MOONS EXPLORATION

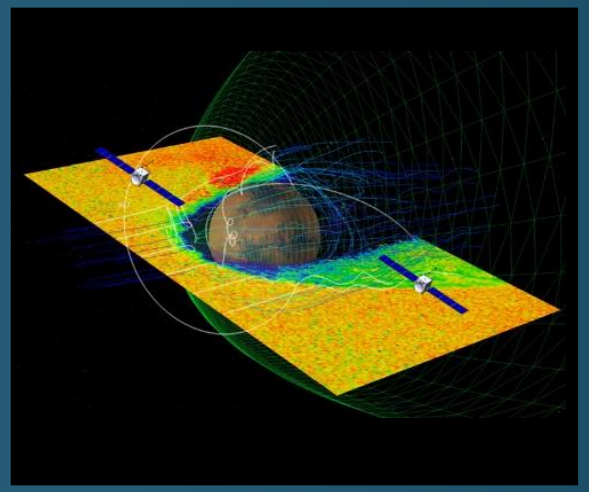


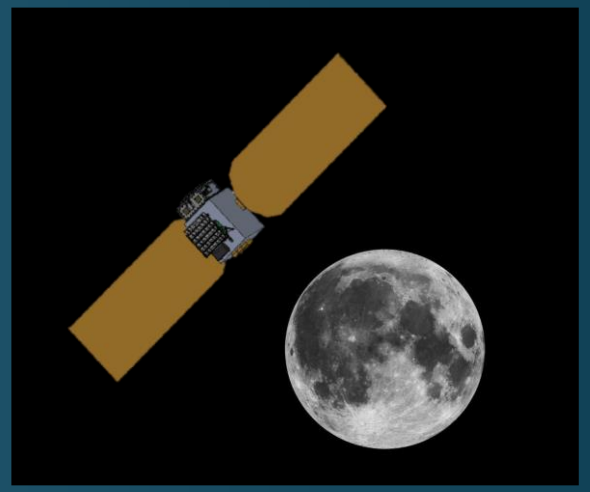
JAXA


MARS MISSIONS
OPERATIONAL 2001–2019
2020 AND BEYOND
Mars Express (ESA) (2003)
Mars Odyssey (2001)
Mars Reconnaissance Orbiter (2005)
MAVEN (2013)
Mars Orbiter Mission (ISRO) (2013)
Trace Gas Orbiter (ESA/RSA) (2016)
Curiosity Rover (2011)
InSight (2018)
HOPE (UAE)
MMX (JAXA)
Mars Orbiter (China)
Mars Sample Return Orbiter
Mars Lander & Rover (China)
Mars 2020 Rover
Mars Sample Return Lander
Mars Sample Return (China)
ExoMars Rover (ESA/RSA)
Follow the Water
Explore Habitability
Seek Signs of Life
Prepare for Future Human Explorers
U.S. Missions
non-U.S. Missions

Announcements of Opportunity







Small Innovative Missions for Planetary Exploration (SIMPLEx)

- Three missions selected for Phase A/B development
- ESCAPADE – twin spacecraft to study effects of energetic particles around Mars
- Janus – reconnaissance mission to binary asteroids
- Lunar Trailblazer – lunar orbiter to investigate geology and water on the Moon

New Frontiers #4

- Dragonfly selection announced June 27, 2019

Discovery 2019

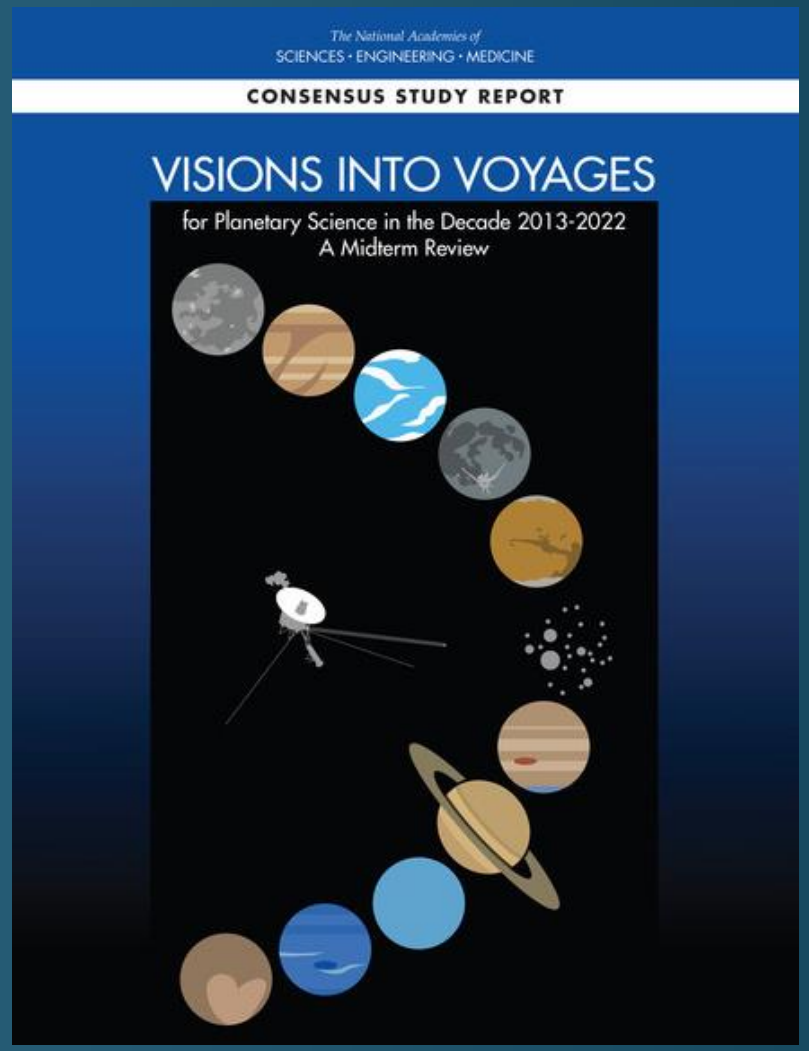
- Final AO released April 1, 2019
- Step-1 proposals due July 1, 2019
- Dr. Tom Wagner has been named as the new Lead Program Scientist for the Discovery Program

Inspire Future Leaders

- Achieve excellence by relying on diverse teams, both within and external to NASA, to most effectively perform SMD's work
- Attract and retain talent by promoting a culture that actively encourages diversity and inclusion and removes barriers to participation
- Encourage development of future leaders, including the next generation of mission principal investigators, through targeted outreach and hands-on opportunities
- Support early-career scientists to build careers working with NASA
- Engage the general public in NASA Science, including opportunities for citizen scientists

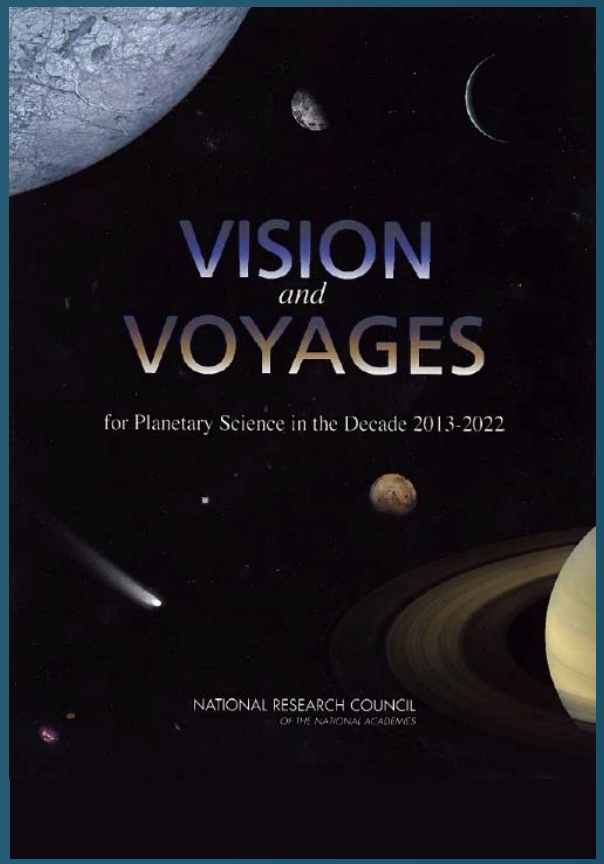
Mission Principal Investigator Development

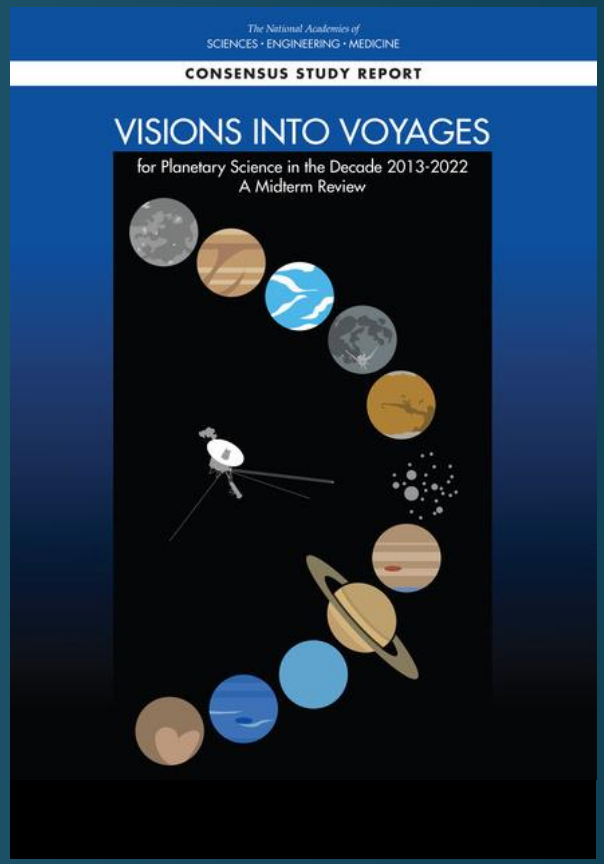
- NASA Science has been exploring barriers to participation
- Workshop in Nov. 2018 explored issues and provided valuable feedback for forward work
  - Developed a consolidated PI resources webpage at https://science.nasa.gov/researchers/new-pi-resources
  - Introduced pre-reviews of mission peer review panels to ensure diversity and reduce conflicts of interest
  - Added a code of conduct requirement for SMD-funded conferences to ROSES 2019
  - Restarted proposal writing workshops at major science conferences
  - Included career development positions and associated evaluation criteria as part of Discovery and New Frontiers AOs
- SMD AA “Writing Successful Mission Proposals” colloquium live streamed on June 5, 2019
- Upcoming activities include
  - Information sessions at science conferences and stand-alone workshops to support those developing first proposal
  - First workshop will be held October 16-18, 2019 in Tucson, AZ and information on how to register will be forthcoming
  - Sign up to learn more at https://lists.hq.nasa.gov/mailman/listinfo/hq-smdpi-workshop-outreach



Midterm Evaluation

- Discovery AOs at the Vision and Voyages recommended cadence of ≤24 months
- New Frontiers (NF) 5 AO as soon as possible, but at a minimum no later than 5 years after NF 4 AO
- Largely following or exceeding the Vision and Voyages recommended levels of R&A and technology spending
- NASA should sponsor 8 to 10 mission concept studies based on the list produced by the Committee on Astrobiology and Planetary Sciences





Preparing for the Next Decadal Survey

- Mission concept studies proposals were due May 31, 2019
- Proposals will be assessed by peer review panels this summer
- Results from concept study reports will be submitted to National Academies of Science to be included for consideration by the Decadal Survey
- Plan to initiate 2023 Decadal Survey in June 2020, with the final report to be delivered in 2022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