National Aeronautics and
Space Administration

EXPLORE MARS

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Mars Exploration Program Director

Mars Exploration Program Analysis Group
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Recent News (1 of 2)

- Jim Watzin has departed the Mars Exploration Program (MEP) and PSD for a position supporting NASA's Associate Administrator for Strategy and Plans (Tom Cremins) on efforts associated with human exploration of Mars
- Eric Ianson named Director of the MEP in addition to his existing role as Deputy Director of PSD
- Michael Meyer serves as Lead Scientist for MEP and Mars Sample Return (MSR)
  - Provides the science bridge between the programs
  - Ensure coordination of M2020 caching with MSR
  - Preparing science recommendations for facility and management of returned samples with MEP
- George Tahu appointed Acting Deputy Director / Lead Program Executive for MEP

Recent News (2 of 2)

- Mars 2020 Successfully Launched on July 30, 2020
  - Arrival at Mars: February 18, 2021

- Mars Sample Return has been established as a new program
  - Jeff Gramling named as the Program Director; reports directly to SMD Associate Administrator Thomas Zurbuchen
  - Close coordination remains with PSD and MEP
  - MSR Independent Review Board convened
  - Mission Concept Review successfully conducted October 9-13
  - Key Decision Point A planned for December 2020

- Mars Ice Mapper
  - International partnership statement of intent expected to be finalized soon
  - Pre-Acquisition Strategy Meeting planned before the end of 2020
  - Will present an overview including science opportunities at next MEPAG meeting

SMD Mars Exploration Organization

Science Mission Directorate

AA: Thomas Zurbuchen

Planetary Science Division

Director: Lori Glaze
Deputy Director: Eric Ianson

Mars Sample Return Program
Jeff Gramling, Director
Michael Meyer, Lead Scientist

Joe Gasbarre, Deputy PM - Tech
Rich Ryan, Business Manager
Ramon DePaula, PE
Erik Edwardson, PA

MSR Program Office (JPL)

Bobby Braun, PM

Mars Exploration Program

Program Director: Eric Ianson
Lead Mars Scientist: Michael Meyer
Deputy Program Director/Lead Program Executive (Acting): George Tahu

Mars Exploration Program Office (JPL)

Fuk Li, PM

Mars2020 (Perseverance)
George Tahu, PE
Mitch Schulte, PS
Adrian Brown, DPS

MOMA
Dave Lavery, PE
Mitch Schulte, PS

MAVEN
Ramon DePaula, PE
K.C. Hansen, PS

MSL (Curiosity)
Dave Lavery, PE
Michael Meyer, PS

MRO/Odyssey
Ramon DePaula, PE
Mike Kelley, PS

Mars Express
Dave Lavery, PE

ExoMars
Ramon DePaula, PE
Michael Meyer, PS

Ice Mapper International Collaboration
Rick Davis, PE

Mars R&A
Mitch Schulte, PS

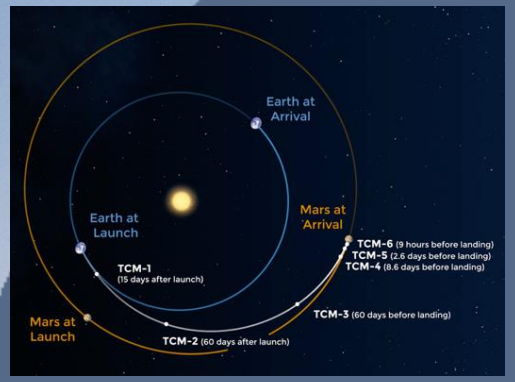
Science/Exploration Integration
Rick Davis, Ass't Dir for Science and Exploration

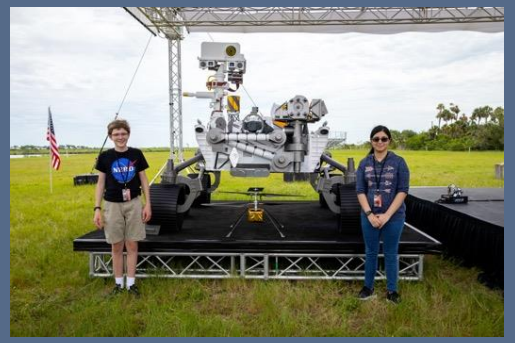
Formulation Missions

Primary Operations Missions

Implementation Missions

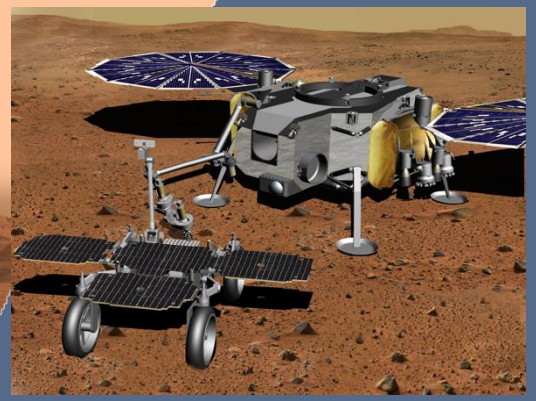
Extended Operations Missions





Mars 2020 / Perseverance

- Successfully Launched on July 30, 2020!
  - Spacecraft is healthy and in cruise to Mars
  - Landing at Jezero Crater on February 18, 2021
  - First leg of the Mars Sample Return campaign
- *Ingenuity* Mars Helicopter (technology demo) will attempt up to five powered, controlled flights
- Virtual launch experience highly successful; some metrics as of July 31:
  - 7.1M social media engagements over launch week
  - 5.3M views of launch across all platforms
  - 66.2k virtual launch guests



Mars Sample Return

- Mars Sample Return MOU approved by ESA Council and jointly signed by NASA/ESA October 5
- A separate, dedicated MSR program office will be established at JPL
  - Will report to MSR Program Director at HQ
  - Will be the system-level ‘project’ organization for MSR
- Mars 2020 Phase E operations remain under the Mars Exploration Program, reporting to the Mars Program Director
- MSR continues to work towards two launches in 2026 (NASA lander + ESA orbiter) and is on track to enter Phase A this Fall
- MSR Program will end with the initial containment of the samples (and Earth Return Vehicle) at the Earth landing site

Mars Ice Mapper

- NASA Moon to Mars (M2M) studies and MEPAG Science Goals (2020) identify near-surface ice as a critical element of the human exploration of Mars
  - Accessible ground ice as a resource, rich in science potential and as an (human) exploration destination driver
- Planning for human exploration in the mid-2030s requires advance knowledge (i.e., in the 2020s) about the location, character, and extent of accessible ice
- An emerging multilateral partnership (NASA, JAXA, CSA, & ASI) is assessing the feasibility of the mission (for launch as early as 2026) and studying next-gen communications needs to provide redundancy for Mars Sample Return and a critical infrastructure for future Mars missions
  - Leveraging prior NASA/CSA collaboration studies to jump start planning
  - Both NASA and CSA have received funding for planning and preparation
- While this mission is exploration driven, there are significant opportunities for science, which will be outlined at the next MEPAG

Other Updates

- 2019 Senior Review outcome letters expected to go out before the end of October
- MEGANE instrument approved to enter Phase C in May 2020 for flight on MMX
- ExoMars 2020 ESA launch delayed to 2022
  - NASA MOMA-MS contribution delivered and integrated into ESA rover
- Ongoing NASA missions are healthy, productive, and funded through FY21
  - Odyssey: Providing most of the relay support for InSight
  - MRO: Developing “Bent Pipe Communications” for Mars 2020 landing
  - MSL: Conducting full mission operations heading up Mt. Sharp
  - MAVEN: Beginning 7th year in orbit; exciting science ahead during solar cycle 25
  - ExoMars/TGO (ESA): Providing ~50% of NASA’s relay data from Mars ground assets (Curiosity and InSight)
  - InSight: HP^3 mole now beneath the surface; burrowing efforts to resume
- Integration of Mars activities (HEOMD, SMD) across the Agency
  - NASA has established a Federated Board to better integrate Lunar and Mars activities
  - Significant studies are underway to better understand Moon-Mars exploration synergies and to guide future work and collaboration.

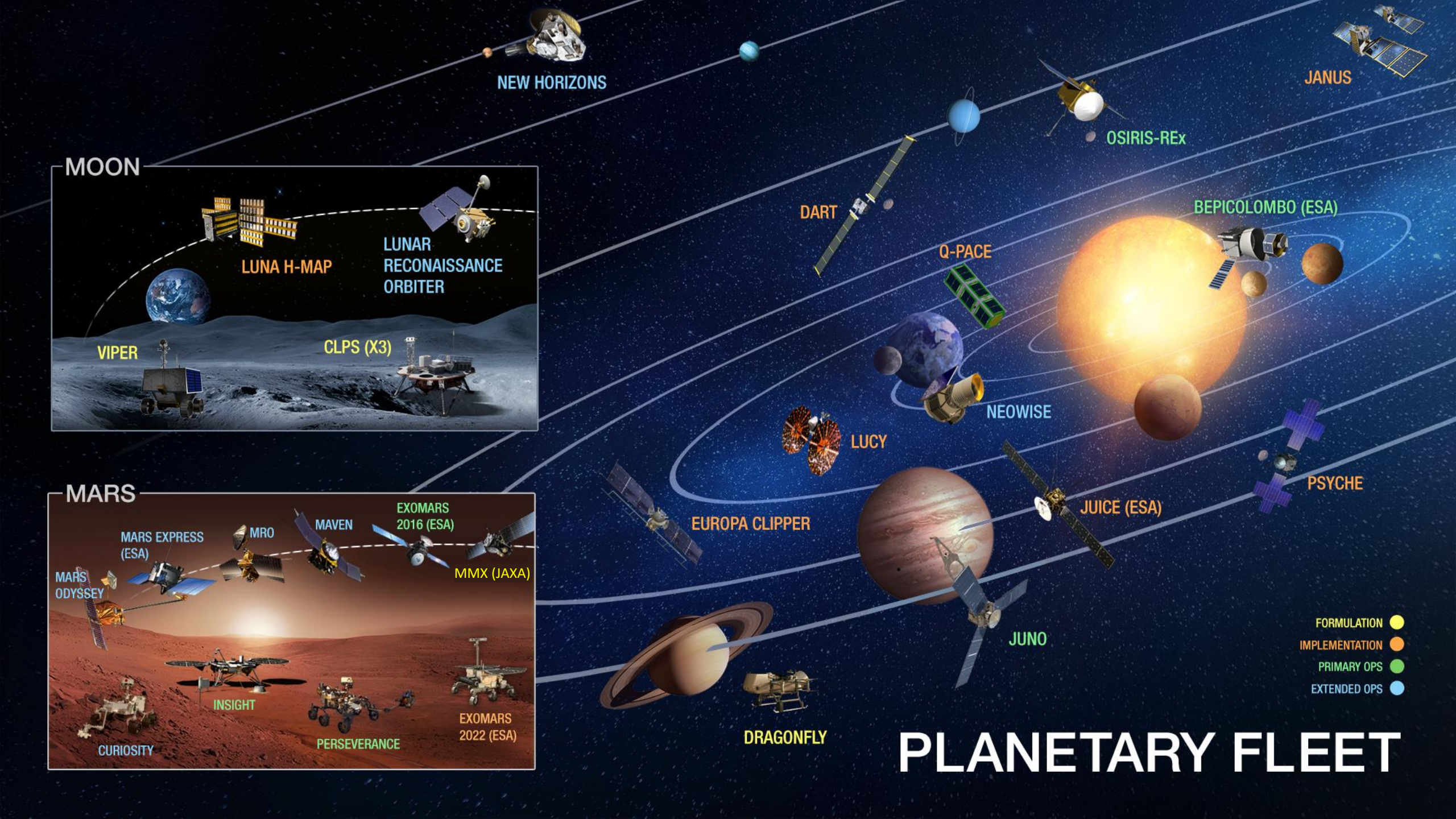
Priorities for Mars Exploration Program

- Maintain NASA's position as a world leader in Mars exploration
  - Champion the interests of the Mars science community
  - Ensure continued successful operation of existing orbiters, landers, and rovers on Mars
  - Support and cultivate existing and future international partnerships
  - Promote future mission opportunities for Mars science

- Close coordination with the Mars Sample Return program and Planetary Science Division

- Implement priorities established through the 2022 Planetary Science Decadal Survey

- Maintain fiscal discipline to deliver a healthy Program within available resources
  - Support existing efforts
  - Enable future capabilities


NEW HORIZONS
JANUS
OSIRIS-REx
MOON
LUNA H-MAP
LUNAR RECONAISSANCE ORBITER
VIPER
CLPS (X3)
DART
BEPICOLOMBO (ESA)
Q-PACE
NEOWISE
LUCY
EUROPA CLIPPER
JUICE (ESA)
PSYCHE
MARS
MARS EXPRESS (ESA)
MRO
MAVEN
EXOMARS 2016 (ESA)
MMX (JAXA)
MARS ODYSSEY
INSIGHT
CURIOSITY
PERSEVERANCE
EXOMARS 2022 (ESA)
DRAGONFLY
JUNO
FORMULATION
IMPLEMENTATION
PRIMARY OPS
EXTENDED OPS
PLANETARY FLEET