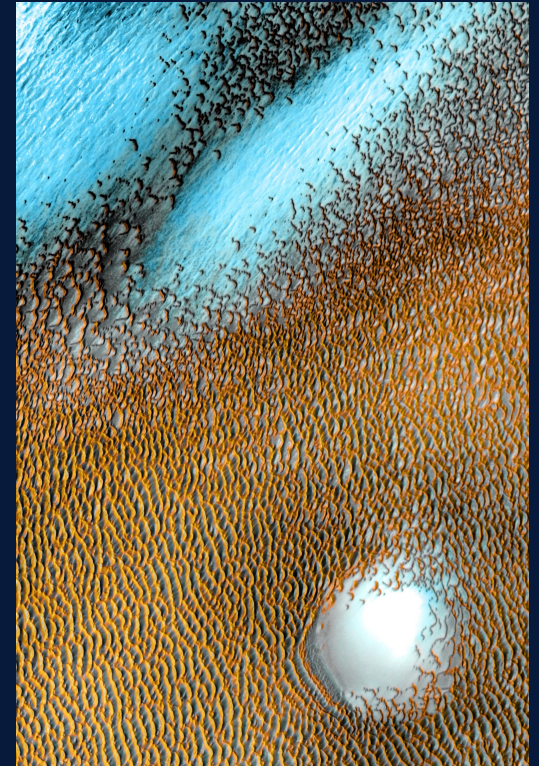


**MEPAG Report to the
(Planetary Science
Advisory Committee)**

R Aileen Yingst, Chair

16 November 2021

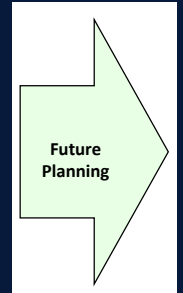
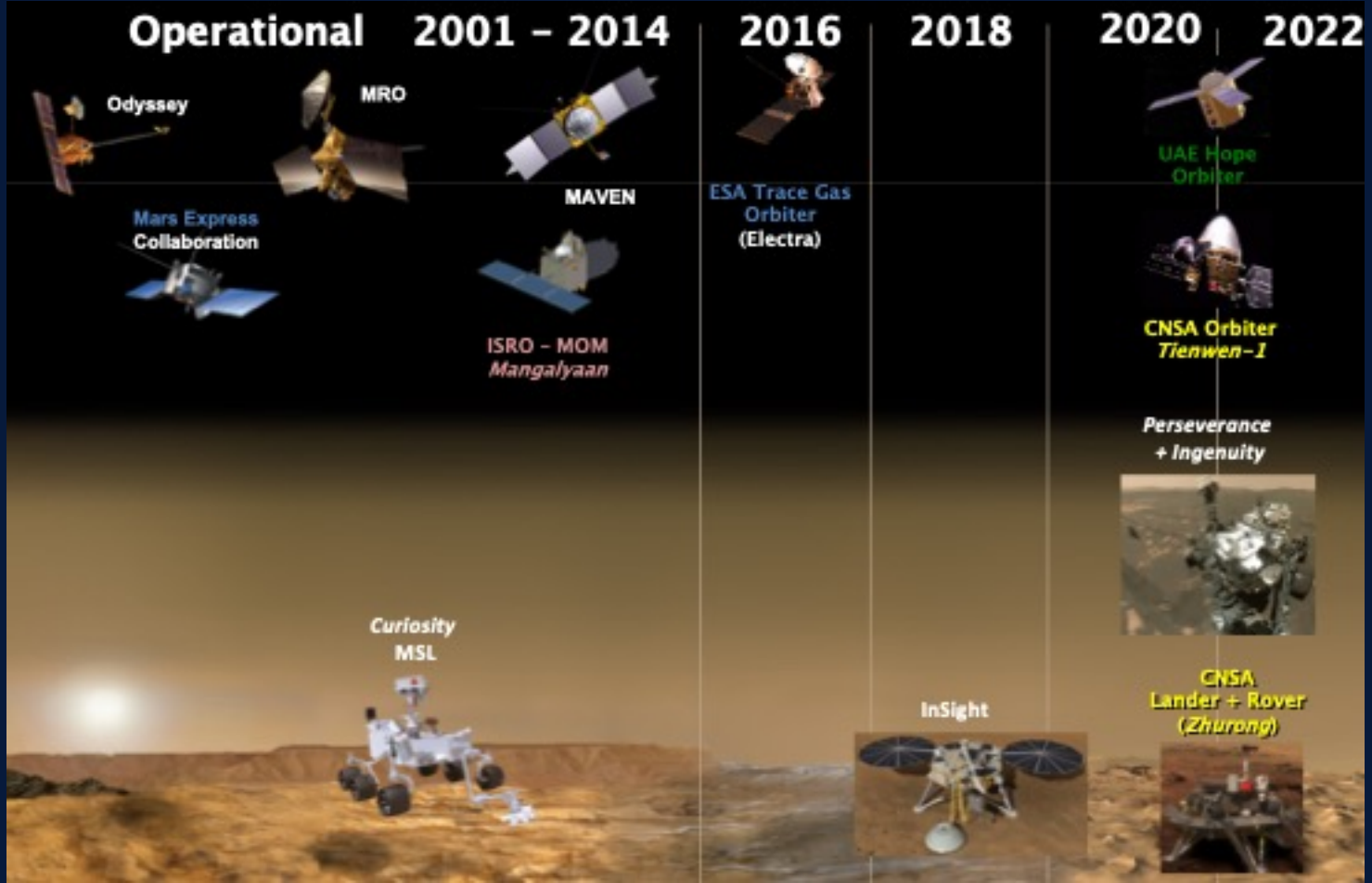


Congratulations to Odyssey on its 20th anniversary this year!

MEPAG Programmatics

- Steering Committee (Chair: R. Aileen Yingst (PSI), appointed June 2019)
 - W. Calvin (Univ. Nevada Reno)
 - **Open position**
 - D. Banfield (Cornell)
 - J. Filiberto (LPI; DEIA representative)
 - S. Hubbard (Stanford University)
 - S.S. Johnson (Georgetown University)
 - K. Lynch (LPI; DEIA representative)
 - J. Johnson (past Chair, JHU/APL)
 - M. Meyer (NASA HQ)
 - D. Beaty, R. Zurek (JPL)
 - J. Bleacher/P. Niles (HEOMD, NASA HQ) Ex Officio members
- Goals Committee (D. Banfield, Chair)
 - *Goal I <Life>* (J. Stern, GSFC; A. Davila, ARC)
 - *Goal II <Climate>* (D. Brain, Univ. Colorado; Claire Newman, Aeolis Research)
 - *Goal III <Geology>* (B. Horgan, Purdue, Becky Williams, PSI)
 - *Goal IV <Human Exploration>* (J. Bleacher, NASA HQ HEOMD; M. Rucker, P. Niles JSC)

Mars Exploration Program Analysis Group (MEPAG)



ExoMars
Lander + Rover
in 2023

MEPAG Active Findings

Mars Exploration Program – Int’l Mars Ice Mapper (IMIM)

- The MEPAG community continues to request a more comprehensive rationale for iMIM, and from this follows a number of concerns.
 - Accepting that this is an agency initiative, what part of the agency sets the mission agenda and negotiates it with OMB? (It is not HEO/ESD.)
- MEPAG applauds the recent selection of a Measurement Definition Team (MDT).
- Before it can get behind this mission, the Mars community is waiting to see: (1) whether the MDT is given full support to exercise its charter and (2) whether and how the agency responds to the MDT recommendations. . The recent announcement of the MDT membership was a good first step. MEPAG hopes to hear from the group at one of its future meetings.
- Open engagement with the Mars community is needed to strategically plan and execute Mars exploration most efficiently.

MEPAG Active Findings

Mars Exploration Program – Mission Arcs

- Since the community is not clear how iMIM emerged, there are concerns that future Mars missions during a budget-constrained period may be defined as was iMIM, with Agency programmatic objectives (resources, telecommunications) as core and science objectives as possible add-ons.
- The community believes this is not the only path to achieve compelling science by NASA; other options should be considered (e.g., low-cost, dedicated missions; commercial partnerships)?
 - There is compelling science to be done at Mars in addition to completing MSR, and MASWG identified possible mission arcs that could be initiated with low/lower cost missions. Such missions could take advantage of rapidly developing small spacecraft capabilities, both by commercial and non-commercial entities, and do compelling science while avoiding unreasonable risks.
 - Activities like the upcoming Low-Cost Mars Science Mission Concepts Workshop can help highlight possibilities.
 - Building on the Decadal Survey results, MEPAG could assist discussion of which arc might be the pilot project within the context that more can be done in the future as the MSR flight developments are completed.
- *Again:* Open engagement with the Mars community is needed to strategically plan and execute Mars exploration most efficiently.

MEPAG Active Findings: How to Assist Human Exploration

- The Moon to Mars program has its hands full with that first step, on a tight schedule and a tighter budget
- MEPAG proposes to assist SMD/MEP make the best use of science mission data most likely to aid ESD when they are able to turn their attention to specific needs for exploration by humans on Mars
 - Ice Mapper *could* be one of those missions; MEPAG awaits the MDT recommendations
 - MEPAG will continue to update its Goal IV (Preparations for Humans) developed with HEO planners, in light of new discoveries or needs
 - MEPAG will also work within SMD and support its interactions with ESD by studying what human explorers on Mars *should* do with regard to science once they are there
- This is taking a longer view, but recognizes the main ESD/SO focus must be on the first steps away from Earth



Backup slides