Mars Exploration Program Analysis Group (MEPAG)

MEPAG Hybrid Meeting #43

Acknowledgements, Findings, and Statements of Support/Concern

Meeting held: April 21-23, 2026*

Statements released for community review: July 1, 2026

**Additional content added after this date due to major changes to the Mars Exploration Program*

Origin and purpose of the MEPAG findings

- MEPAG is an interdisciplinary community forum that provides rigorous, science-driven, actionable analysis for planning and prioritizing Mars exploration activities and research. MEPAG is not an advisory group and does not make policy recommendations or engage in advocacy.
- The MEPAG findings aim to provide information to NASA, Congress, and the American public on the status of Mars science and the Mars science community, including but not limited to:
  (1) the current scientific priorities of the community, and
  (2) analysis of the impact of current or future NASA actions on Mars science and the workforce.
- MEPAG findings are based on discussions at the April 2026 MEPAG hybrid meeting, written by the MEPAG chair, and reviewed by the MEPAG Executive Council and the Mars community.
- *Note: This package includes one finding (Risk to MEP future plan from Skyfall) that is based on information released after the MEPAG meeting. The finding will be evaluated by the Mars community during our public comment period.*

Executive summary

- The success of the Mars Exploration Program remains one of the most significant achievements by NASA in the modern era and is the result of over 30 years of strategic planning undertaken by NASA and the Mars scientific community.
- The current set of planned Mars activities within MEP does not reflect the Mars Future Plan or Decadal Survey priorities and does not lay out a clear long-term strategy for scientific exploration of Mars and preparation for human exploration.
    - Because of these changes, the US is facing a 10-year gap in competed science mission and payload opportunities at Mars, despite a clear set of scientific and exploration priorities for robotic and human exploration and strategies for filling key knowledge gaps outlined by these documents.
- The negative impact of these changes to MEP are magnified by significant and ongoing budgetary uncertainty within NASA.

NASA Headquarters / Planetary Science Division

- **Statement of Support:** *MEPAG appreciates the strong statements of appreciation for MEPAG from PSD and ESDMD at the hybrid meeting and the willingness to continue engaging with the Mars community through MEPAG.*
    - The regular exchange of information between NASA and the science community through the Analysis Groups has been highly beneficial to our mutual goals and helps ensure a strong scientific return on NASA investments of taxpayer funds.

Acknowledgement of achievements by NASA teams

- MEPAG congratulates the Artemis II team for their successful and inspiring mission. Artemis II showcases how science can be incorporated effectively into non-SMD NASA missions and represents the first step on the path from the Moon to Mars.
- MEPAG congratulates the Mars rover teams for a wealth of new results on habitability, organics, and potential biosignatures in ancient Martian sedimentary environments. These rigorous and compelling results represent significant progress on MEPAG and MEP goals and demonstrate the effectiveness of a long-term, science-driven strategy.
    - These results emphasize the value of the samples collected by Perseverance and MEPAG looks forward to their return to Earth at the earliest possible date.
- MEPAG congratulates the Mars orbiter teams on new results and operations ingenuity, including:
    - The MAVEN team for an abundance of new results that have revolutionized our understanding of the atmospheres, exospheres, and magnetospheres of terrestrial planets.
    - The Odyssey team for design and implementation of a new use of the spacecraft to achieve novel images of atmospheric dust and water ice cloud structure.
    - The MRO team for acquiring the 100,000th HiRISE image.
- MEPAG congratulates the Mars fleet for their spectacular observations of the 3I/Atlas comet, a potential interstellar object, during Mars closest approach

Risk to MEP Current and Future Missions from Skyfall

- Since the MEPAG meeting, NASA has announced that the Skyfall payload on the SR-1 mission will be managed and funded out of the MEP, under the MEP future missions budget line.
- Skyfall is an uncompeted payload that is not identified as a priority in the Decadal Survey or Mars Future Plan. No community input has been solicited on Skyfall science objectives.
- Due to assignment of Skyfall to the MEP budget, plans for instrument maturation programs (e.g., PRIMER) to benefit future low-cost and commercial missions have been cancelled.
- Extreme schedule and budget pressure to launch Skyfall in 2 years puts NASA at risk of having no new missions, and also puts other MEP activities at risk, including active missions like Mars 2020, MSL, MRO, and Mars Odyssey.
- **Finding:** In the strongest possible terms, MEPAG encourages NASA to continue supporting the MEP program of record and the Mars Future Plan in parallel with Skyfall to ensure progress on Decadal Survey science, preserve science and engineering workforce capacity, and build on the past success of the MEP. This includes the continuation of functioning extended missions, which provide substantial return (see slide 8), and soliciting community input on Skyfall science objectives.

Payloads of opportunity

- MEPAG strongly supports the agency-level NASA goal of including science on all missions where feasible, including payloads of opportunity. However, payloads of opportunity are not a replacement for a dedicated, strategic, and carefully planned scientific program.
  - **Finding:** Abandoning the strategic objectives of the MEP and Decadal Survey risks significantly reducing the scientific and technical return of the MEP in years to come.
- Given that the Skyfall payload was directed for inclusion on the SR-1 mission, rather than competed, MEPAG is concerned that future payloads of opportunity (e.g., Mars Telecom Network) will not be competed.
  - **Finding:** NASA would best promote innovation across the space industry, increase return on investment, and achieve high priority Mars science objectives by competing payloads of opportunity.
- Payloads of opportunity may require rapid deployment of ready-to-fly payloads, but ready-to-fly instruments are not common in the community because there has been no pipeline for their development.
  - **Finding:** Availability of ready-to-fly instruments would be enabled by the development of an instrument pipeline, such as the previously proposed PRIMER program.

Risk to PSD support for extended missions

- **Statement of concern:** MEPAG is deeply concerned by statements from SMD and PSD on the potential need to cut current extended missions in favor of flying new missions.
  - Extended missions across PSD have proven to be a highly cost-effective and low risk means of generating high-quality science. Extended missions and new missions represent highly complementary approaches to generating new science within a balanced risk portfolio, and neither should be sacrificed to serve the other.
  - All active missions at Mars are in their extended mission phase, there have been no new NASA missions to arrive at Mars in 6 years, and no new competed missions to Mars are currently planned. Therefore, potential defunding of extended missions represents an existential threat to the continued success and scientific productivity of the MEP.
  - NASA PSD, including MEP, plays an outsized role in the development of the US space exploration workforce, particularly through extended missions. Extended missions significantly expand opportunities for operations and mission training and thus provide a workforce pipeline that supports all NASA objectives, including staffing of critical Artemis science and operations roles.

Continued support for returning Perseverance samples

- Mars Sample Return remains the top Decadal Survey priority for NASA Planetary Science and Astrobiology and will provide valuable insights for human spaceflight planning.
- Returning the Perseverance samples would achieve all MSR science goals. There are currently no other credible approaches to sample collection that would achieve these goals.
- MEPAG acknowledges clear statements by SMD expressing a desire to find a path for returning the Perseverance samples to Earth.
- **Finding:** MEPAG strongly encourages NASA to move forward immediately to prepare an architecture development plan that will result in returning the Perseverance samples to Earth at the earliest possible date.

Science support for extended missions

- Ongoing major budget cuts (including those resulting from inflation) to extended missions have resulted in funding profiles that prioritize mission operations and threaten the ability of mission teams to conduct science in support of mission planning.
- **Finding:** Extended missions are most productive and yield the greatest return on investment when their science teams have sufficient resources to support science activities that in turn inform mission operations. This feedback mechanism ensures that data collection is optimized to focus on high priority scientific targets that are identified by ongoing analyses.

Commercial Mars Services

- MEPAG anticipates that commercial missions will be a significant component of Mars exploration and MEP in the future, potentially starting with the Mars Telecommunications Network (MTN).
- While the lunar CLPS model provides a useful reference point, there are unique challenges in flying to and executing science efficiently on Mars that will not fit the current lunar model for CLPS. These include but are not limited to reduced launch opportunities, longer mission durations, increased landing risk and cost, and power/communication challenges.
- To create a sustainable and scientifically successful program, a clear science-driven strategy with appropriate consideration of risks and costs is needed.
- **Finding:** For a potential commercial Mars program to execute key Mars science objectives efficiently, effectively, and strategically, a dialogue between NASA, commercial partners, and the MEPAG community during the early stages of development is crucial.

Other key statements and findings

- **Statement of Concern:** NASA's decision to dissolve its existing independent advisory structure adds substantial risk to the execution and implementation of scientific priorities, and it is not clear how NASA plans to obtain independent advice going forward.
  - Independent advice ensures the best possible return on taxpayer investments and the maintenance of a strong U. S. scientific (and engineering) capability.
  - The non-NASA scientific community has long contributed a breadth and depth of experience and expertise that has proven valuable to NASA's mission.

- Pu-238 is an essential component for many mission architectures for Mars and the outer solar system, but supplies remain limited.
  - **Finding:** A plan for continued production of Pu-238 for RPS systems is needed to enable future Mars and outer solar system missions.

R&A Funding and Grant Processing

- For FY 2026, Research & Analysis (R&A) in the PSD budget did not achieve the Decadal Survey recommendation of 10% of the annual PSD budget but R&A is the backbone of planetary science.
- Openly competed R&A programs drive innovation, rapidly response to new discoveries, address topics that are not the subject of current missions, and attract new investigators into the field.
- **Finding**: MEPAG strongly encourages NASA PSD to continue to aggressively pursue the recommendation of the Decadal Survey that 10% of the PSD budget be allocated to R&A.

- **Statement of Concern:** The Mars science community has experienced major delays in grant services from NSSC, which has not distributed awards on a reasonable or predictable timeline. Combined with already-low selection rates, this problem significantly increases funding uncertainty and thus poses major risks to maintaining the workforce .

MEPAG Future Activities

- **Statement of support:** The MEPAG community remains committed to fostering engagement with the Human Spaceflight Mission Directorate (HSMD) to ensure the best infusion of science into the development of the Mars architecture.
  - Continued development of a human exploration architecture for Mars will benefit from MEP and HSMD working together to develop precursor missions, mature technologies, fill key architecture driven data gaps, and answer major outstanding Mars science questions.
  - MEPAG has the capability to evaluate the architecture for data gaps and unallocated functions, potentially in collaboration with LEAG.

MEPAG Future Activities (cont.)

- **Collaboration with commercial partners:** MEPAG recognizes that the commercial space industry (new and legacy companies) is a critical partner in enabling future Mars exploration and that the Mars community would benefit from a stronger relationship and regular communications with potential industry partners.
  - MEPAG enthusiastically supports efforts such as LEAG's CAB that feeds dialogue between the community and interested commercial entities and supports shared action.
  - MEPAG looks forward to developing a relationship with LEAG's CAB to identify interested industry partners to foster understanding between the Mars commercial and Mars science ecosystems and grow effective partnerships among stakeholders.

MEPAG Future Activities (cont.)

- **LEAG Collaboration:** We appreciate the participation of LEAG in the MEPAG meeting and discussion of topics of interest to both communities, including human exploration and commercial services. MEPAG looks forward to collaborating with LEAG on future Moon to Mars road-mapping, evaluating architecture data gaps (slide 14), and identification of other activities of mutual interest.
- **SFL-SAG report and follow-on activities:** MEPAG acknowledges the excellent work completed by the Search for Life Science Analysis Group (SFL-SAG) for their report. To increase the impact of this report, MEPAG will consider novel avenues to accomplishing SFL-SAG goals given the current funding landscape. Evaluation of preliminary missions, standalone investigations, and needed technology development to enable low-cost approaches would be appropriate subjects for follow-on reports.