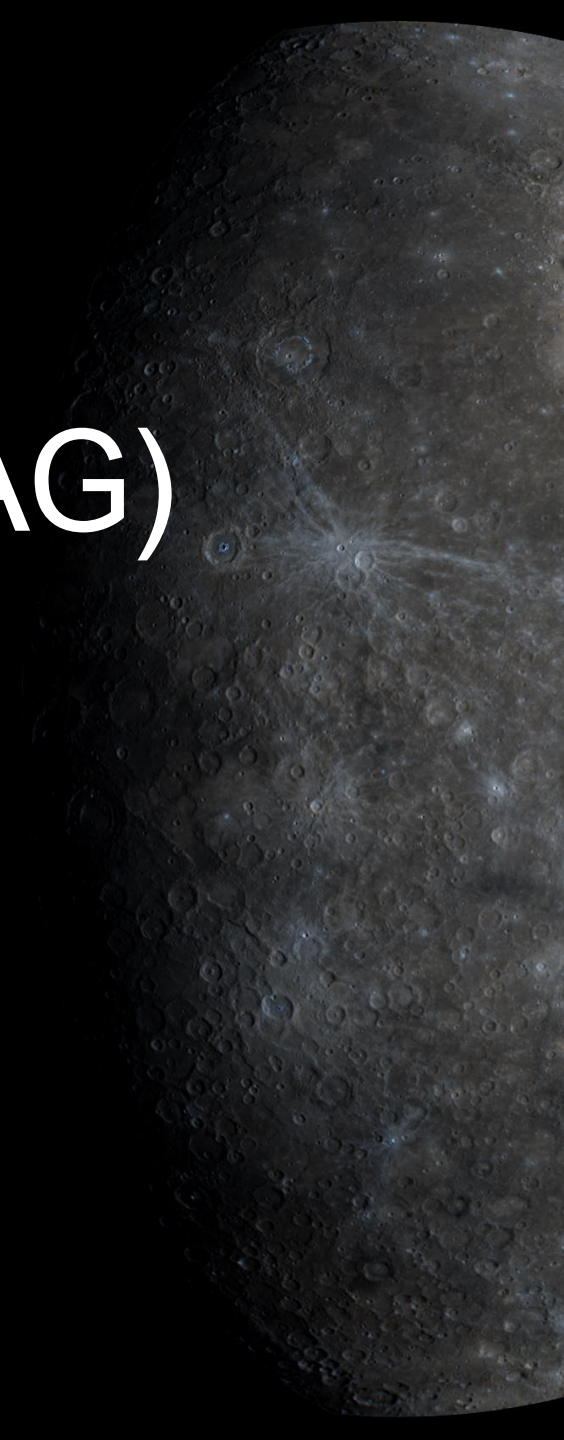


Mercury Exploration Assessment Group (MExAG)

July 10, 2024

Carolyn Ernst, MExAG Chair

Johns Hopkins Applied Physics Laboratory



Ongoing Findings and Notes

- **BepiColombo IDS/GI Programs (+ Outreach)**

- MExAG encourages NASA to work with its international partners to secure the opportunity for U.S. participation in any future BepiColombo IDS/GI calls run by ESA and/or JAXA. Given that the BepiColombo nominal orbital mission is slated to begin in December 2025, support for the Guest Investigator Program is time-sensitive and should not be postponed.

- **Mercury Flagship Mission Concept Study**

- MExAG encourages NASA to initiate a directed study of a candidate Mercury Lander flagship mission concept. This study would help to ensure a well-developed Mercury flagship mission concept is ready for the next Decadal Survey.

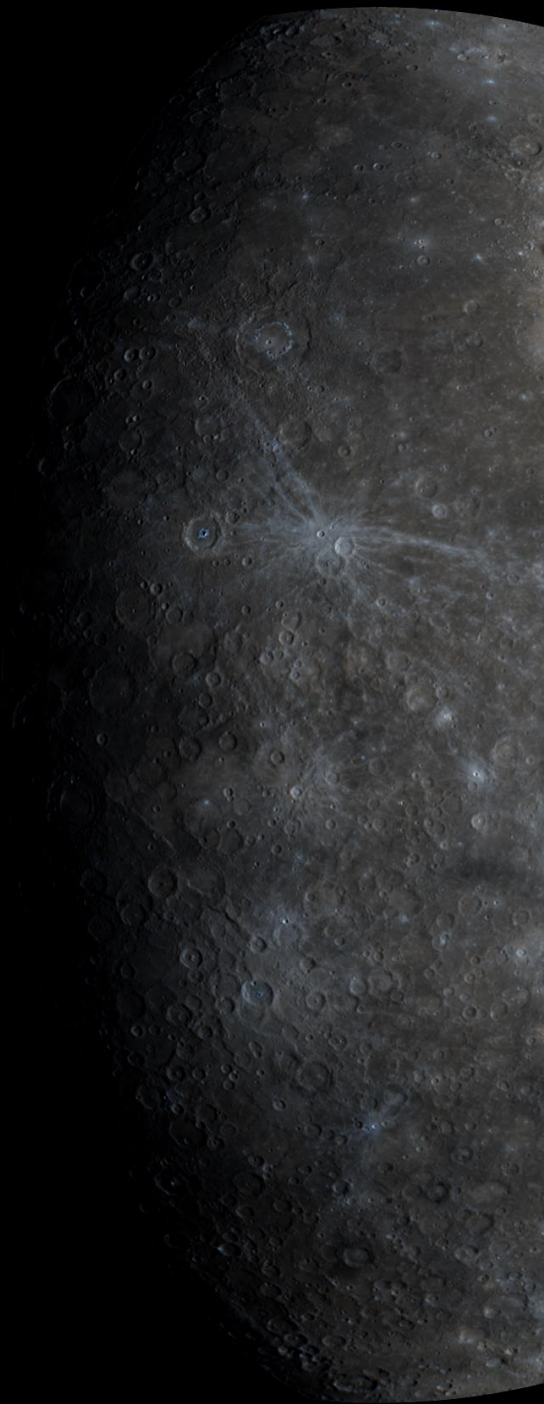
- **Discovery Program**

- MExAG supports protecting a healthy Discovery mission program. Discovery missions are the only avenue for NASA-led Mercury exploration in the next decade and any delays or reductions in the Discovery AO cadence will disproportionately impact opportunities for exploration of the innermost planet and the health of the Mercury community.

Mercury and MExAG Activities

- **Annual Meeting:** Planning for our next meeting (Feb 2025) to be our first annual meeting with an in-person option!
- **Mercury 2024:** Had a successful Mercury science meeting in Kyoto in June! Soliciting proposals for the next edition in 2026.
- **Science Goals Document:** Ongoing work to finish the first MExAG Science Goals Document. Surface/interior goals will be circulated to steering committee for feedback this summer before being circulated to the community for input. Exosphere/magnetosphere goals are moving forward this summer.
- **New Members:** Recruited three new members via open call. Added a second International Liaison position.
- **BepiColombo:** Flyby 4 (of 6) on 5 September 2024. Transfer Module glitch on 26 April, last report thrust was back up to 90%, promising for upcoming flyby. MExAG

Additional MExAG Materials



MExAG Steering Committee 2024–2025



Carolyn Ernst
JHU APL
Chair



Stephen Parman
Brown University
Vice-Chair



Ronald J. Vervack, Jr.
JHU APL
Exosphere Discipline Member



Jim Raines
University of Michigan
Magnetosphere Discipline Member



Brendan Anzures
LPI/ NASA Johnson
Geochemistry Discipline Member



Mallory Kinczyk
JHU APL
Geology Discipline Member



Alain Plattner
University of Alabama
Geophysics Discipline Member



Ryan Dewey
University of Michigan
Early Career Member



Megan Mouser
Carnegie Institute of Washington
Early Career Member



Jack Wright
ESA
International Liaison



Sae Aizawa
LPP, CNRS
International Liaison



Océane Barraud
DLR
International Early Career Member



Shoshana Weider
NASA HQ
NASA Liaison

MExAG Steering Committee Changes

2023 – 2024

- Carolyn Ernst – Chair
- Stephen Parman – Vice-Chair
- Ron Vervack – Exosphere
- Brendan Anzures– Geochemistry
- Mallory Kinczyk – Geology
- *Catherine Johnson – Geophysics*
- Jim Raines – Magnetosphere
- Ryan Dewey – Early Career
- Megan Mouser – Early Career
- *Suzie Imber – International Liaison*
- Océan Barraud – International Early Career
- *Steven A. Hauck, II – Past-Chair*
- Shoshana Weider – NASA Liaison

Member rotating off the SC

2024 – 2025

- Carolyn Ernst – Chair
- Stephen Parman – Vice-Chair
- Ron Vervack – Exosphere
- Brendan Anzures– Geochemistry
- Mallory Kinczyk – Geology
- *Alain Plattner – Geophysics*
- Jim Raines – Magnetosphere
- Ryan Dewey – Early Career
- Megan Mouser – Early Career
- *Jack Wright – International Liaison*
- *Sae Aizawa – International Liaison*
- Océan Barraud – International Early Career
- Shoshana Weider – NASA Liaison

New member

** = New role on MExAG SC*

Upcoming Mercury Events

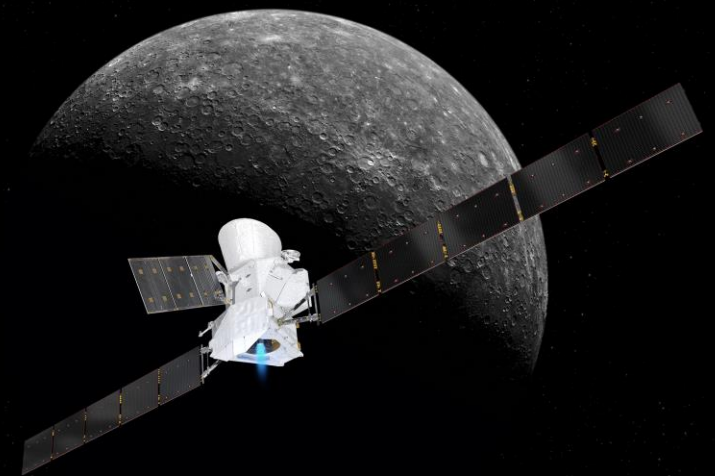
- DPS/EPSC 2024, 6–10 October 2024
- EPSC 2024, 8–13 September 2024
- AGU 2024, 9–13 December 2024
- MExAG 2025, February 2025

- BepiColombo:
 - Mercury Flyby 4, 5 September 2024

MExAG: <https://www.lpi.usra.edu/mexag>

Twitter: [@ExploreMercury](https://twitter.com/ExploreMercury)

MExAG



Mercury Community Findings 2024

A full set of MExAG findings was released after our February 2024 meeting and presented to the PAC in March.

A full record of these findings can be found on the MExAG website:



The subsequent slides contain the full findings for those findings referenced on Slide 2.

BepiColombo Findings (1)

MExAG encourages NASA to work with the Mercury community to generate and share Mercury-related public outreach content for release prior to and during the time of BepiColombo orbital insertion (December 2025). MExAG is ready to help facilitate sharing the excitement of Mercury science and exploration to the general public.

BepiColombo Findings (3)

MExAG encourages NASA to protect the funding set aside for future selections of the BepiColombo Guest Investigators Program. Due to the current challenging planetary science/NASA funding climate and limited opportunities to develop near-term missions to Mercury, engaging with an active Mercury mission is critical to the U.S.-based Mercury community, and provides an important avenue to build and maintain international partnerships in planetary science. Given that the BepiColombo nominal orbital mission is slated to begin in December 2025, support for the Guest Investigator Program is time-sensitive and should not be postponed.

Mercury Community Findings (1)

MExAG urges NASA to follow the prioritized budgetary decision rules recommended in the 2023 Origins, Worlds and Life (OWL) Decadal Survey for programmatic reductions during times of reduced budget. In particular MExAG supports protecting a healthy Discovery mission program via:

- Ensuring that each competitively selected mission can proceed through the development process on its own merits;
- Protecting the cadence of new Discovery missions in the 2023–2032 decade.

Discovery missions are the only avenue for NASA-led Mercury exploration in the next decade and any delays or reductions in the Discovery AO cadence will disproportionately impact opportunities for exploration of the innermost planet and the health of the Mercury community.

Mercury Community Findings (2)

MExAG encourages NASA to consider ways to maintain a healthy and engaged Mercury research community beyond the timeframe of BepiColombo's orbital mission. MExAG suggests the following as potential options (many of which would benefit the entire planetary science community):

- MExAG encourages NASA to initiate a directed study of a candidate Mercury Lander flagship mission concept.
- MExAG encourages NASA to enhance existing funding mechanisms, or create new mechanisms, aimed directly at developing mission concepts and related technologies.
- MExAG encourages NASA to support workshops to foster collaborations among technologists, engineers, and planetary scientists.