

Mars Architecture Strategy Working Group

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Update to MEPAG Virtual Meeting, 13 Nov 2019

Why Does This Group Exist?

- Triggered by the planetary mid-decadal evaluation committee (co-chaired by Louise Proctor and Joe Rothenberg)
 - Asked to evaluate Mars program at the same time as it evaluated progress on the Decadal
 - Recommended that “NASA should develop a comprehensive Mars Exploration Program (MEP) architecture, strategic plan, management structure, partnerships (including commercial partnerships), and budget that address the science goals for Mars exploration outlined in *Visions and Voyages*.”
- NASA accepted that recommendation, stating that it “is committed to developing a long-term strategic plan by 2020”.
 - This plan would be provided to the upcoming Decadal Survey.
- MASWG was formed by PSD to provide input to NASA on definition and possible implementation of a Mars program architecture (see next chart).
- Purpose is NOT to modify the MEPAG Goals Document nor to revisit the outcome of the last Decadal Strategy.
 - There is a separate ongoing update of the Goals Document, but that is a MEPAG activity.

Charter Of MASWG

The tasks to be addressed by this panel are:

- Determine what could and should be done beyond (i.e., in addition to or after) the Mars Sample Return campaign.
- Survey the compelling science addressable by various classes of missions during the period 2020-2035, building on the science goals outlined in *Vision & Voyages* and updated in the *MEPAG Goals Document*.
- Define mission candidates in various mission classes to guide future MEP planning including, but not necessarily restricted to, missions in the small-spacecraft, Discovery, and New Frontiers categories, which may also be considered by the upcoming Planetary Decadal Survey (2023-2032).
- Define strategic technologies, infrastructure, and partnerships (international and commercial) that can enable compelling science in the specified time horizon, showing their programmatic linkage.

Membership of MASWG

- Bruce Jakosky, CU/LASP (chair)
 - Shane Byrne, U. Arizona
 - Wendy Calvin, U. Nevada Reno
 - Shannon Curry, UC Berkeley
 - Bethany Ehlmann, Caltech
 - Jen Eigenbrode, GSFC
 - Tori Hoehler, NASA/Ames
 - Briony Horgan, Purdue
 - Scott Hubbard, Stanford
 - Tom McCollom, CU/LASP
 - Jack Mustard, Brown U.
 - Than Putzig, PSI
 - Michelle Rucker, NASA/JSC
 - Michael Wolff, Space Science Inst.
 - Robin Wordsworth, Harvard
 - TBD representative from ESA
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- Michael Meyer, NASA HQ
 - Rich Zurek, Mars Program Office, JPL
 - Serina Diniega, Mars Program Office, JPL

Schedule

- A planning meeting was held October 21-23, 2019.
- In-person meetings are planned for early December and late January
 - Working group is hearing inputs from upcoming missions, mission concepts selected recently for study, technology development, commercial entities, recent MEPAG SAGs, NASA HQ, human exploration, goals/objectives updates
 - Additional meetings via telecon
- Input on mission concepts is being solicited, with due date of 22 November (see next chart)
- Preliminary recommendations of the working group will be vetted through community, including MEPAG; e.g., presentation and discussion anticipated at February in-person MEPAG meeting (date TBD)

Input Requested On Mission Concepts

- Email went out to MEPAG email list and was posted on Planetary Exploration Newsletter (PEN) soliciting one-page descriptions of mission concepts at size classes from cubesat up through New Frontiers
- Purpose is to inform working group on range of compelling science and implementations that are possible in the different mission classes
 - Input is to educate and inform the working group on what types of missions might be possible that can address major science questions
 - All concepts are confidential, for internal use of MASWG, and will not be released either to NASA HQ or to the community (or to anybody else)
 - This IS NOT an opportunity to get your mission concept into any kind of mission queue
 - This IS NOT a popularity contest – adding multiple authors or submitting a concept multiple times with different authors doesn't help us to understand the breadth of potential concepts.
 - It IS an opportunity to help the working group understand what missions addressing important science are possible in different spacecraft size/cost ranges
- Keeping it to one page allows us to understand the science and potential implementation, without overwhelming the community or the committee
- Deadline is 22 November, so that working group members will be able to read them prior to our meeting in the first week of December
- See the email that went out for template for the one-pagers plus additional information.

Contacting MASWG

- Submit questions, mission concept one-pagers, or other comments via email to MASWGcomments@jpl.nasa.gov
- These charts will be posted on the site for this meeting on the MEPAG web site.
- Please contact us for further discussion:
 - Bruce Jakosky, bruce.jakosky@lasp.colorado.edu
 - Michael Meyer, michael.a.meyer@nasa.gov
 - Rich Zurek, richard.w.zurek@jpl.nasa.gov