

Summary of the presentations, discussion, and main outcomes of the VM2 MEPAG meeting

June 25th, 2018, 11:00AM-1:00PM PDT; virtual attendance only

Posted agenda and presentation files: <https://mepag.jpl.nasa.gov/meetings.cfm?expand=mVM2>
Notes present an overview of discussion as well as presentation materials.

General MEPAG Announcements

- Please respond to all requests for general or meeting-specific MEPAG feedback via the email MEPAGmeetingQs@jpl.nasa.gov.
- Comments about the proposed MEPAG Goals revisions should be submitted via the google form, linked within https://mepag.jpl.nasa.gov/reports/MEPAGGoals_Draft_ReleaseforComments_Spring2018.pdf. These are due **August 10, 2018**.
- The next virtual meeting (VM3) may be held in early autumn 2018.

Past and on-going MEPAG and MEP activities

- MEPAG Chair Jeff Johnson presented [an introduction](#) that presented the agenda for the current virtual meeting (VM2) and an overview of MEPAG activities since the face-to-face April 2018 [MEPAG Meeting 36](#). In particular, Jeff highlighted the continued work on SAG options and the now-out-for-review Goals revisions – more on these were covered during later presentations. Additionally, he walked through the currently planned timeline of Mars-specific preparation for the next Planetary Science Decadal Survey.
 - A question was asked about if the next Decadal Survey will have any focus on planning for future human exploration? This option is being discussed within NASA; the community will have to await guidelines to the Decadal Survey.
- NASA Lead Mars Scientist Michael Meyer presented on [the state of MEP work](#), showing that the Mars Exploration Program (MEP) is healthy. His presentation topics include:
 - Mars rover 2020 project (M2020) is making good progress in mission development and reviews, including a planetary protection review of sampling developments. Additionally, the [helicopter has been added as a technological demonstration](#).
 - Mars missions in flight or early development are also progressing well – in particular, InSight (along with the MarCo cubesats) successfully launched and are on their way to Mars; TGO is finishing in-orbit commissioning; and the JAXA Mars Moon Explorer (MMX), including the NASA-contributed instrument MEGANE, are under-development.
 - For current missions, big news is that MSL is now able to drill and deliver samples to its instruments again! And MSL also recently reported on some important science relating to organics preserved in ancient rocks and to a seasonal variation in the background methane. After only local or regional dust storms for the last 5 Mars years, a planet-encircling dust storm has been raging on Mars, causing Opportunity to switch to a low-power survival mode.
 - NASA is pursuing a MSR “lean” architecture that aims for an affordable approach that includes working with international partners for the return of martian samples, and related technology investments have continued.

- The FY18 Budget Appropriation was favorable for the MEP, receiving ~\$75M increase over President's request. (Included in the President's request for FY19 and subsequent outyears was \$50M per year to study the next steps needed to return samples cached by M2020. No other flight development activities were called out.)
- MEPAG Goals Chair Don Banfield [presented on the proposed revision](#) to the [MEPAG Goals document](#).
 - He presented an overview of how the Goals Document is generally revised.
 - Current proposed changes were done to address disconnects between the 2015 document content and our understanding of Polar Science, reflecting recent discoveries and analyses. These documents are posted at the [MEPAG Goals page](#), along with the 2015 document.
 - Comments about the proposed MEPAG Goals revisions are due by **August 10, 2018**, and should be submitted via the google form, linked within https://mepag.jpl.nasa.gov/reports/MEPAGGoals_Draft_ReleaseforComments_Spring2018.pdf (this document is on the MEPAG Goals page).

MSR-related work

- Michael Meyer and Sanjay Vijendran (ESA) [summarized the April 2018 MSR conference](#).
 - This conference aimed to highlight progress made, inform community members, get everyone seriously talking about sample return, and emphasize that sample return should be an international endeavor. It was ESA hosted, and had >180 attendees from 17 countries.
 - At the Berlin airshow (that occurred in parallel) – NASA Science Mission Directorate (SMD) Director Thomas Zurbuchen and ESA Director of Human and Robotic Exploration (D/HRE) David Parker signed and announced a joint [Statement of Intent](#) – this demonstrates the desire within both agencies to work towards sample return and divides leading responsibilities between NASA and ESA. NASA would be the overall lead of the MSR campaign, but both agencies would have responsibilities for major flight elements.
 - Five position statements were generated and discussed (see the conference summary).
- Members of the iMOST (International Mars Sample Return Objectives & Samples Team) committee, David Beaty (MPO/JPL) and Monica Grady (Open U), [summarized the iMOST report](#).
 - This report, chartered by the International Mars Exploration Working Group (IMEWG), describes the expected values of different types of samples, by mapping science objectives to samples and implied measurements on those samples. The PPT summary report is available at on the MEPAG site (under Reports, Working Groups, IMEWG): <https://mepag.jpl.nasa.gov/reports/iMOST%20presentation%20package.pptx>. A parallel text version of this analysis is nearing completion and will also be published.
 - The identified next steps to support the science of sample returns are for the Mars 2020 rover to successfully launch, fly, and collect samples (note that the [4th 2020 landing site workshop](#) is in October); to get sample scientists involved as Participating Scientists, and to be planning for what happens after samples are returned. They recognized that some of this may get worked through MEPAG.

Mars conference report

- Serina Diniega (JPL), co-convener of the Mars Workshop on Amazonian and Present-day Climate Workshop with Isaac Smith (PSI), presented a [brief report](#) from that meeting.
 - That meeting had >50 attendees, for 3 days of oral presentations and a poster session, a field trip to Rocky Mountain National Park to see glacial terrain, and regular discussion periods. Discussion focused on individual presentations, as well as broader-picture identification of key open science questions and the needed measurements to address open questions.
 - There is a plan to generate a summary report, containing those questions and needed measurements. This report would serve as a reference for the Mars community.
 - Serina noted that the workshop participants felt the open science questions related to polar science and present-day activity were much better reflected in the proposed updates to the MEPAG Goals, than in the older 2015 Goals Document, as much progress has been made in these areas.

MEPAG future work

- Jeff Johnson and Rich Zurek (MPO/JPL) presented on [MEPAG forward planning](#). This included thoughts, coming out of [MEPAG Meeting 36](#), regarding preparation for the next Planetary Science Decadal Survey. In particular:
 - There was discussion about a Science Analysis Group (SAG) to explore potential mission concepts to address key science objectives within Polar Science or Ice-related areas. (“Polar” here was used in the broad sense, as described [by Isaac Smith at MEPAG Meeting 36](#).) Rich noted at the Amazonian Climate workshop, many presentations and discussions showed how integrated the whole martian ice/volatile system is.
 - Some suggestions were given about additional SAG topics, beyond what had been discussed at MEPAG Meeting 36.
 - In determining direction, it was recognized that there is an important need to prioritize, so as to not overtax community or support staff (MPO).
 - Ongoing discussions will be held by the MEPAG Executive Committee.