

MEPAG:  
Preparing for the next  
Planetary Decadal Survey,  
White papers

Serina Diniega, MPO/JPL

# Mars Exploration Program Analysis Group (MEPAG)

## “White Papers”

- A white paper is community input from individuals or groups focusing on important science priorities for the coming decade.
- In 2009, consensus reports representing many individuals were strongly encouraged by the Decadal Survey (DS).
  - “One of the most important ways for members of the science community to participate in the decadal survey” ([http://sites.nationalacademies.org/cs/groups/ssbsite/documents/webpage/ssb\\_056163.pdf](http://sites.nationalacademies.org/cs/groups/ssbsite/documents/webpage/ssb_056163.pdf))
- 199 white papers were received, representing 4,935 individuals.
  - White papers were submitted via the “SolarSystem2012” web site.
- The DS Mars Panel considered > 60 white papers as input to their deliberations
  - Along with past NRC and MEPAG reports, each white paper was read by at least two members of the Mars panel and a summary presented at an early subpanel meeting. If they were considered high priority or very important they were used to request presentations at future meetings to form the input for the Mars chapter of the “*Vision and Voyages*” DS report.

# MEPAG Aims

- **Facilitate Mars community response**
  - **Collect and share resources/information with the Mars community**
  - **Provide a centralized place(s) for sharing ideas/seeking collaboration**
  - ???
- **Strategically plan and execute “MEPAG” response**
  - Review and update MEPAG Goals document
  - Identify and initiate white papers from “MEPAG” (the entity, meant to be representative of the broad community efforts)
  - Ensure that specific topics are included in white paper submissions/engage key contributors
  - Communicate those plans and works to the Mars community
  - ???

*See MEPAG VM4 for more from [previous discussions](#) on these areas, and [stay tuned for future information](#) as the Decadal Survey process is explained by NASEM*

# Sharing resources

## ***Proposal:***

### **1) set up a webpage (linked on MEPAG site) containing relevant information about the Decadal Survey process**

- Visions and Voyages (last Planetary Decadal Survey)
  - Process, timeline
  - Submitted white papers (highlighting Mars-focused/relevant ones)
- Upcoming Planetary Decadal Survey
  - Timeline, highlighting calls for action (announcement/deadline)
  - Links also to description of the other recent NASA Decadal Surveys' process (as seems relatable)
- Links to compilations of high-level Mars questions: MEPAG Goals, 9<sup>th</sup> Mars Integration Report, etc. (including community suggestions)
- Links to online centralized sharing of ideas/looking for collaborators

### **2) Highlight announcements/deadlines in the monthly newsletter and at MEPAG meetings**

### **3) Include presentations on the DS process and key community efforts at MEPAG meetings**

### **4) ???**

# Centralized place(s) for collaboration/ community sharing and discussion

## Proposal:

1) set up an online “place” for people to share ideas and seek collaboration

- Similar to what was set up for → Planetary Mission Concept Studies

This tab is for advertisement of potential mission concept proposals + expressions of interest in proposal involvement for a particular mission concept

Questions/comments about this MEPAG google doc? Email [mepagmeetingqs@jpl.nasa.gov](mailto:mepagmeetingqs@jpl.nasa.gov).

This google doc has been set up so anyone can edit. No one should edit another person's text. All information submitted here is voluntary and public.

Concept Description Filled in by originator	* = please fill in to maximize usefulness	Monitor formation and evolution of seasonal frost	Paleoclimate Explorer for Mars	Mars Prospecting Constellation	Multiple Mars Rovers to Sites
Primary science objectives* Key measurements		determine how and how much CO2 frost accumulates through the martian winter, and how/how much dust and water ice is incorporated; characterize how CO2 frost evolves in grain size/radiance/etc. through winter; determine what may be left following sublimation, so as to connect the annual processes to a longer-term record	Characterize recent atmospheric and climatic evolution on Mars from compositional and layering trends within a mid-latitudinal buried glacier.	Monitor thermal state/composition and volatile exchange of the polar caps; Distribution of buried water and CO2 ice deposits; Meteorological observations necessary to enable accurate models of the atmosphere for landing & other such activities.	With the new heavy lift provided by Falcon Heavy is a potential to target multiple sites on Mars with multiple questions that remain unanswered. Taking advantage of new MER rover designs can be reduced in size to accommodate individual landers on a single vehicle. <a href="https://www.jpl.nasa.gov/news/2012/pdf/4234.pdf">https://www.jpl.nasa.gov/news/2012/pdf/4234.pdf</a>
Brief mission concept description (e.g., type/number of spacecraft, mission duration and/or location, type of instrumentation)* Person who entered description (name, institution, and email) = originator*		lander within high-latitudes, survive and operate through at least one full Mars year Serina Diniega, JPL, <a href="mailto:serina.diniega@jpl.nasa.gov">serina.diniega@jpl.nasa.gov</a>	Rover in mid-latitudes with recently inferred buried ice sheet within landing ellipse. Operate for at least one Mars year. Suniti Karunatillake, <a href="mailto:sunitiw@lsu.edu">sunitiw@lsu.edu</a>	Mothership with 1-2 higher mass instruments in a standard mapping orbit but carrying a few cubesats to access additional vantage points/local times with targeted observations. Nicholas Heavens, SSI, <a href="mailto:nheavens@spacescience.org">nheavens@spacescience.org</a>	4 or more small rovers (a single heavy launch vehicle) individual landing sites at Rovers capable of 90 days on the Martian surface. Focus on basic geochemical characterization. Paul Niles, NASA JSC
Others involved (name, institution)			Peter Doran, LSU; J.R. Skok, LSU; Juan Lorenzo, LSU; Deanne Rogers, Stony Brook U.; Jack Wilson, JHU; Jeff Moersch, UTK; Jack Mustard, Brown; Nathan Bramall (Ames-Leiden Tech)	Luca Montabone, SSI	Doug Archer JSC, Liz Rasmussen, JSC, Deanne Rogers, Brook
		NOTE from 3/9: this concept has been absorbed into a larger idea. I'll pass interested people's names over to the			

2) Host a white paper-poster presentation “forum” at a future MEPAG in-person meeting?

- Can a variant of this be done at a virtual MEPAG meeting?

3) Host a lunch meeting at a planetary science meeting (AGU, LPSC)?

4) ???

# Suggestions to community

- **Be on the MEPAG mailing list**
  - Gets monthly newsletter, announcement of MEPAG meetings, and other Mars-relevant important communications
- **Look for announcements** over the next couple of months about the Decadal Survey, including:
  - Official Decadal Survey activities/deadlines
  - MEPAG-initiated centralized place for sharing ideas and seeking collaborators
- **Attend and participate in MEPAG meetings** (always webcast)
- **Share feedback/suggestions** here, with MEPAG Executive Committee members, or send to [MepagMeetingQs@jpl.nasa.gov](mailto:MepagMeetingQs@jpl.nasa.gov)

