MEPAG Goals Revision

Don Banfield, MEPAG Goals Committee Chair

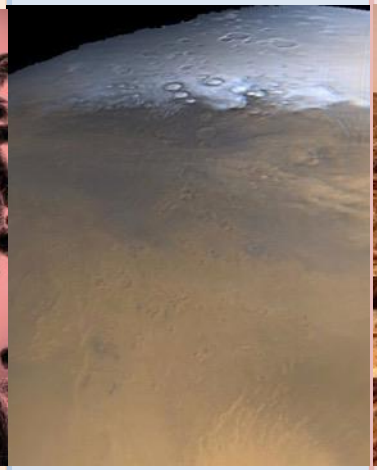
Outline:

1. What is the Goals Document?
2. What is its revision history?
3. How can I ensure it reflects what my community finds important?
4. What is the timeline for revision?

MEPAG Goals Document

- Outlines and prioritizes (within each Goal, *not between Goals*) "flight" measurements to achieve high priority Mars system science questions
- Periodically updated, in response to new discoveries and research directions by Goals Representatives
- Model has served as basis of other AG Goals Documents

Mars Exploration Program Analysis Group (MEPAG)

Life	Climate	Geology	Human Exploration
			
I. Determine if Mars ever supported life	II. Understand the processes and history of climate on Mars	III. Understand the origin and evolution of Mars as a geological system	IV. Prepare for human exploration

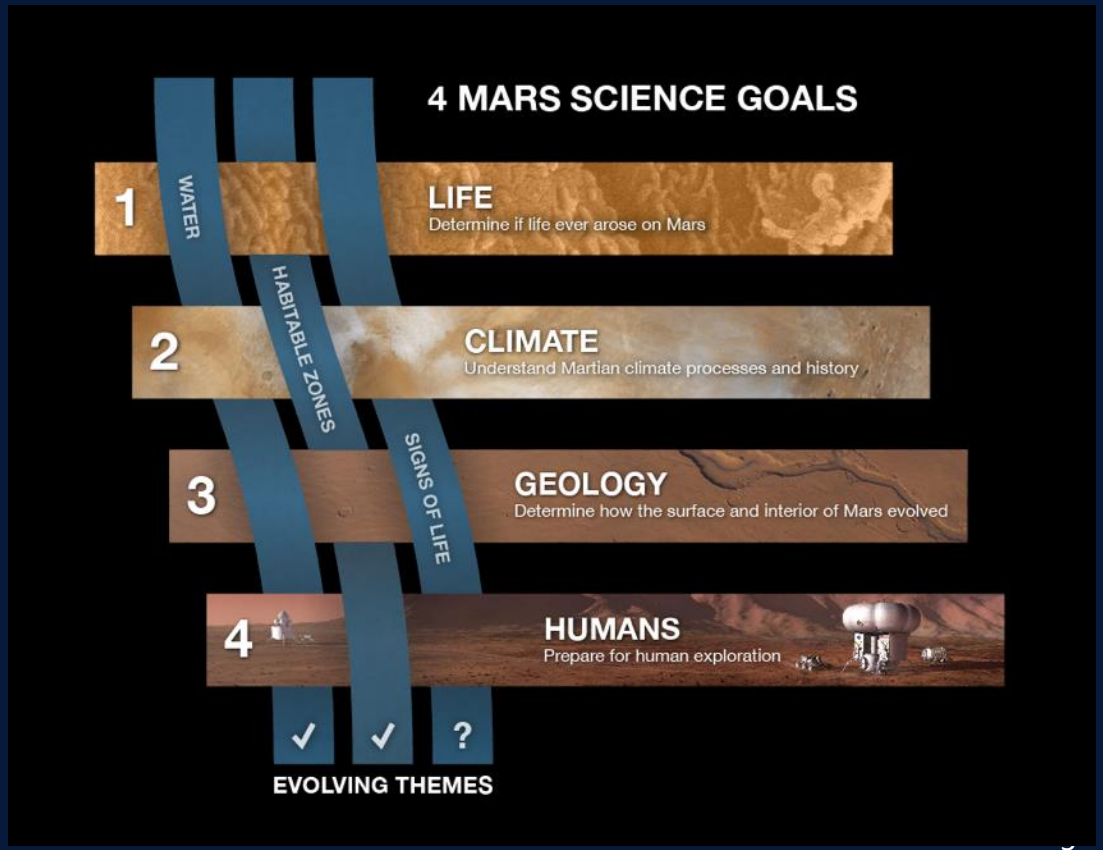
Source: MEPAG 2018

Mars Exploration Program Analysis Group (MEPAG)

Life	**I. Determine if Mars ever supported life.**	A. Determine if environments having high potential for prior habitability and preservation of biosignatures contain evidence of past life B. Determine if environments with high potential for current habitability and expression of biosignatures contain evidence of extant life
Climate	II. Understand the processes and history of climate on Mars.	A. Characterize the state of the present climate of Mars' atmosphere and surrounding plasma environment, and the underlying processes, under the current orbital configuration B. Characterize the history of Mars' climate in the recent past, and the underlying processes, under different orbital configurations C. Characterize Mars' ancient climate and underlying processes
Geology	III. Understand the origin and evolution of Mars as a geological system.	A. Document the geologic record preserved in the crust and investigate the processes that have created and modified that record B. Determine the structure, composition, and dynamics of the Martian interior and how it has evolved C. Determine the manifestations of Mars' evolution as recorded by its moons
Human Exploration Source: MEPAG 2018	IV. Prepare for Human Exploration.	A. Human mission to Mars orbit with acceptable cost, risk, and performance B. Human mission to the Martian surface with acceptable cost, risk, and performance C. Human mission to the surface of Phobos or Deimos with acceptable cost, risk, and performance D. Sustained human presence with acceptable cost, risk, and performance

Cross-Cutting Themes

- Attempts to also recognize cross-cutting within Goals (i.e., investigation contributes to more than one Objective/Goal) and between Goals (e.g., a science theme)
- High-priority science questions and strong mission concepts or research direction often are cross-cutting
- Re-organize around “Big Picture Questions?”



What is the Revision History of the MEPAG Goals Document?

- Major Revisions in:
  - 2001
  - 2004 (after 6th Mars)
  - 2005
  - 2008 (after 7th Mars)
  - 2010
  - 2012
  - 2015 (after 8th Mars)
- Generally revised every 2-3 years, &/or following a major synthesis meeting (e.g., International Conference on Mars), or if a potential disconnect between the document and the state of the art is identified.

What is the Revision History of the MEPAG Goals Document?

- Minor revision completed in 2018 (Polar Science & Present-day Activity)

  https://mepag.jpl.nasa.gov/reports/MEPAG%20Goals_Document_2018.pdf

- Prompted by 6th International Mars Polar Science and Exploration Conference
  - https://www.hou.usra.edu/meetings/marspolar2016/
  - Generated summary report, outlining Polar Science priorities
  - Disconnect of 2015 document with state-of-the-art was identified.
- Goals Committee made changes only to Goals II & III
  - but did not re-rank priorities
- Adopted after overall community review & input.

How will we update the Goals document?

- "Integrators" for each Goal included one of the MEPAG Goals Committee members
- Goals Committee will also draw on other recent meetings results
- **We also solicit your direct input on proposed changes to the current goals document**
- Committee will synthesize this to fully update the document
- Draft will circulate for community input & further revision
- Document adopted after that process closes

Goals Committee

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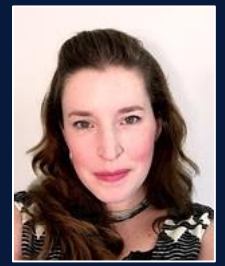

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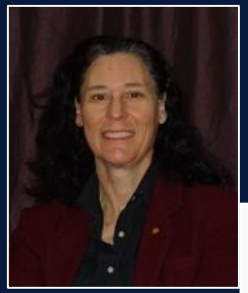

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What is the timeline for updating?

- Accept community input (ASAP!)
  - Expect a URL to a webform via a MEPAG email next week
- First draft from Goals Committee (October)
- Circulated for community input (December-Jan)
- Further revision to address community input (Feb)
- Release to Community (LPSC 2020)