

Humans to Mars Summit (H2M) and the Mars Program Analysis Group (MEPAG)

**Dr. G. Scott Hubbard,
Stanford University, NASA Retired**

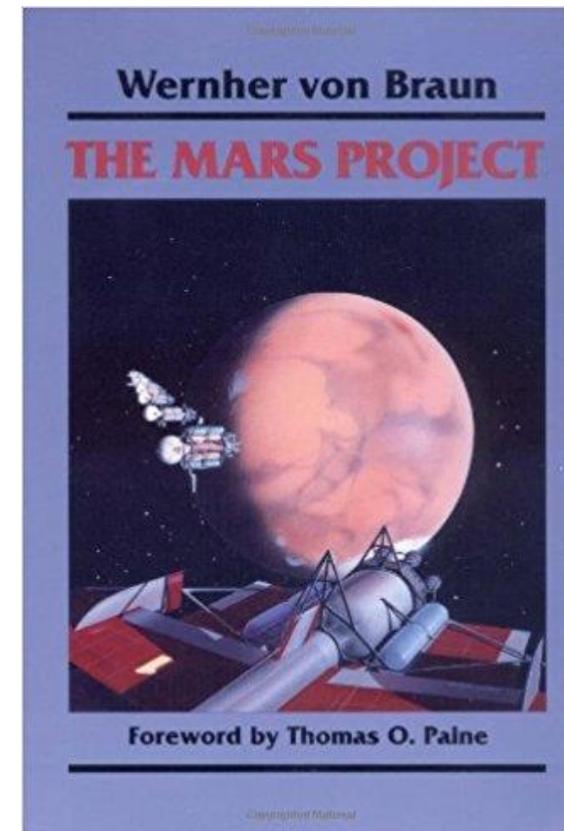
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- Asked to summarize key points that might be relevant to MEPAG from the Humans to Mars (H2M) Summit held 8/31 – 9/3/2020.
- My objective is also to promote a discussion about the Humans to Mars community and what role(s) MEPAG might play.
- A Bit of History
 - MEPAG was created in its current form around 2000 just in time to assist in the reconstruction of the Mars Exploration Program after the 1999 failures of MCO and MPL.
 - The Goals document with Goal 4 first appeared 2001 (Greeley et al).
 - Explore Mars, Inc. established in 2010
 - First annual H2M in 2013: goal was to create a hybrid group from Professional to Advocacy
 - >H2M meeting now also includes elements of STEM and Diversity/Inclusion

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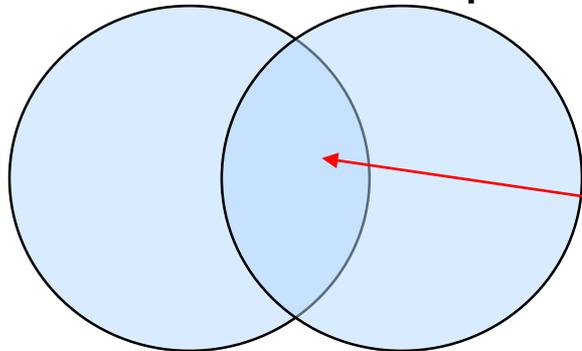
- Human Exploration Architecture Overview from NASA
 - Essentially as presented by Rucker and Bleacher
- STE(A)M Panel of Educators; Mars as a student interest
- Diversity: Black lives in space (C. Bolden, L. Melvin et al)
- Multiple Interviews with Industry (Aerojet Rocketdyne, United Launch Alliance, SpaceX, Boeing)
 - Emphasis on Moon as steppingstone, Artemis, ISRU
- International Science Missions (NASA, JAXA, ESA, UAE)
- Perseverance Overview
- Human Health and Performance (Multiple Panels)
- Technology (Multiple Panels): Surface Power, ISRU, Drilling, ECLSS, EDL
 - Discussion of whether there is a business case for H₂O delivered
- “The Under Mars”: science talk by Jim Garvin on subsurface exploration
- Planetary Protection: L. Pratt, M. Gold, A. Stern; PPIRB/NASEM
- Policy and Politics: Discussion with House staff and Policy Experts

Which, if any of the H2M topics should MEPAG adopt on a periodic or semi-regular basis? Is MEPAG willing to participate in H2M?



- **Current Decadal: use human adaptability to rapidly identify scientific samples for return**
 - Could those samples include near surface ice?
- **As in Goal 4, conduct science-driven “knowledge of the environment” (e.g., high-resolution remote sensing, retiring astronaut risk such as soil toxicity) and (my opinion) learn from end-to-end systems engineering of MSR**
- **Support technology of mutual benefit (e.g., precision landing, propulsion, telecom, drilling, infrastructure, etc.)**
- **In a short stay, what experiments can be left behind (seismometer?)**

Space Science Goals Human Exploration Goals



What is this? What process should be used to engage MEPAG beyond Goal 4? AOs?, NRAs?, workshops?

The Future of Space Exploration, Searching for Life with Humans and Robots Together

