

PAC Findings and Recommendations

Meeting: March 4-5, 2024

Submitted: March 18, 2024 by Hope Ishii, PAC Chair

1. PAC support for the Decadal Survey priorities and budget guidelines

Finding: The PAC reaffirms our prior finding¹ from November 2023 in strong support of the priorities and budget guidelines of the Origins, Worlds, and Life Decadal Survey (OWL). We also note that support was expressed unanimously by the community Assessment/Analysis Groups (AGs) for the OWL priorities.

No recommendation.

2. Thank you for Chang'e 5 sample access

Finding: The PAC expresses sincere gratitude to PSD and SMD leadership for advocacy ultimately resulting in the NASA Administrator's certification to Congress for a limited exemption under the Wolf Amendment that allows for access to Chang'e 5 samples by NASA-funded researchers. When the Chang'e 5 mission returned the first new lunar sample return in decades, the community recognized the uniqueness of these samples as a young mare basalt far from previous collection sites and holding the potential to dramatically change our understanding of solar system volcanic and impact history. As noted in a prior finding (November 2021), NASA-funded researchers have a strong interest in studying these samples but understand that their collaboration with the People's Republic of China (PRC) is constrained by the Wolf Amendment, a Congressional limitation prohibiting bilateral exchanges between NASA-funded scientists and scientists and institutions in the PRC. The PAC recognizes both the work by NASA to achieve the exemption along with the potential for scientific advancement enabled by access to the samples via NASA awards.

No recommendation attached.

¹ *Prior finding, November 2023: Finding: The PAC recognizes the extreme challenge of decision-making in the current uncertain budget environment and expresses our sincere appreciation for the level of transparency shown with respect to PSD budget priorities and the development of NASA's response to the MSR IRB. The PAC continues to support the Decadal recommendations/priorities and the PSD funding priorities laid out by Lori Glaze (initially endorsed in the PAC June 2023 Finding). Recommendation: The PAC reaffirms support for both the Decadal's prioritization of MSR and the need for balance across the planetary portfolio and community support. The PAC recommends continued focus on both those aims as the MSR budget and NASA's plan become better defined and looks forward to hearing the full NASA response to the MSR IRB in the spring.*

3. Science in Moon-to-Mars

Finding: The PAC recognizes and appreciates the ongoing efforts to implement compelling science in the Artemis architecture under the Moon-to-Mars program, and to proactively study science objectives in future Mars exploration architectures.

Recommendation: The PAC recommends a regular and ongoing pattern of collaboration among the science, engineering, and technology communities working on elements of the Moon-to-Mars program (e.g. individual Artemis missions, science advisory groups, science teams) to instantiate compelling science as a pillar of the program. The PAC requests a briefing from the Moon-to-Mars initiative leadership on the pattern of collaboration when established as soon as the next PAC meeting but not later than the fall 2024 PAC meeting.

4. DSN Maintenance and Expanded Capabilities

Finding: The PAC recognizes the critical role that the Deep Space Network plays in Planetary Science missions and planetary radar science. However, deferred maintenance and significantly increased demand due to upcoming planetary and crewed lunar missions through the Artemis Program will substantially stress an already strained, aging infrastructure. As shown in the DSN update to the PAC by Jeffrey Volosin at our Nov 2023 meeting, while the Lunar Exploration Ground Sites (LEGS) facilities will reduce the pressure on the DSN and select DSN Lunar Exploration Upgrades (DLEU) are underway, the network's current capacity is still likely to be insufficient to meet both the needs of Artemis and Planetary Science. Support for the Artemis missions will necessarily require DSN resources at a level that will challenge existing and upcoming missions in Planetary Science and other mission areas.

Recommendation: Recognizing budgetary constraints across the Agency, the PAC requests more detailed information on the strategy for allocation of DSN resources, as well as the Agency's strategy for mitigation efforts and policies for prioritization of missions (both US and international) directly competing for DSN resources at a given time. This request includes the opportunity to hear a review of the DSN Futures Final Report when it becomes available.

5. Thanks to ExoPAG

Finding: The PAC appreciates the efforts of ExoPAG in proactively taking steps to create productive and longstanding relationships between many disciplines, including the astrophysics and planetary science communities. The PAC is supportive of the ongoing ExoPAG efforts in seeking ways to strengthen these relationships across multiple avenues of engagement, including invited speakers, virtual direct messaging, and thoughtfully scheduled workshops. The PAC looks forward to the forthcoming community review paper that will identify overlaps and synergies among multiple disciplines and link the science initiatives of the Astro2020 and Origins, Worlds and Life 2023 decadal surveys.

No recommendation attached.