

PAC Findings/Recommendations

Feb 28-Mar 1, 2023

Submitted March 28, 2023 by Serina Diniega (PAC Chair)

1. Follow-up on VERITAS Delay

Finding: The PAC re-affirms their support for the VERITAS mission (see December 2022 PAC Finding 2) and efforts that aim to enable a VERITAS engineering development restart in 2025 and launch in 2031 (or sooner, should the situation allow). The PAC acknowledges that PSD leadership described, at the Feb 2023 and the Dec 2022 PAC meetings, specific requirements for the approval of new mission starts managed by JPL. The PAC acknowledges and shares community concern/confusion about how these metrics will be evaluated and applied to the approval/selection of new mission starts managed by JPL, and to the restart of VERITAS.

Recommendation: To maintain community confidence and transparency, the PAC recommends that PSD leadership continue to publicly share the specific metrics required for the approval of new mission efforts managed by JPL, and for the restart of VERITAS. Additionally, the PAC recommends that any requirements/circumstances that may lead to changes to these metrics also be shared clearly and promptly in a public forum. As a means of clarifying circumstances that may impact JPL readiness evaluations, the PAC also recommends that PSD publicly document if there is any relationship between requests for budget updates and the metrics that must be met by JPL in order for them to be approved to manage a new mission effort. In particular, the PAC requests updates on the PSD plan at (1) the Summer 2023 PAC meeting, following the interim Psyche IRB assessment, and (2) at the Spring 2024 PAC meeting, following the full Psyche IRB assessment and NASA budget updates.

2. NASA Center Workforce Health

Finding: The PAC recognizes that the success and future health of the planetary science community hinges upon the health of the workforce. The Psyche IRB report pointed out insufficiencies in staffing, necessary expertise, and communication and psychological safety related to one Federally Funded R&D Center (FFRDC) and likely relevant to other major institutions involved in planetary missions. Such issues have been demonstrated to have far-reaching, negative ramifications for NASA goals and missions. The PAC has heard about ongoing assessments of planetary missions and involved major institutions, and that there are plans for future assessments of additional major institutions involved in PSD missions.

Recommendations: The PAC requests to hear the results of the ongoing and future assessments of workforce health at major institutions involved in PSD missions at a future PAC meeting. The PAC recommends the involvement of the SMD-operated Inclusivity, Diversity, Equity, and Accessibility (IDEA) group (<https://science.nasa.gov/about-us/idea>) in these assessments to ensure that IDEA concerns are part of that conversation and the assessors have access to the expertise provided by that group, including their outside contractors.

3. Large Mission Progress and Risks

Finding: As PSD and JPL work to support ongoing missions before new mission starts, the PAC is concerned about the potential of programs at the scale of Mars Sample Return (MSR) to affect the delay of VERITAS and other new mission selections. While the PAC is encouraged with the recent reports on MSR development and upcoming reviews, a general concern remains about potential MSR development delays and their impact on PSD planning.

Recommendation: The PAC requests to hear about potential risks identified at key reviews for ongoing NASA directed and flagship missions if those risks appear likely to lead to cost/schedule overruns that would impact PSD/SMD decisions about other ongoing missions or future opportunities. In particular, the PAC requests continued reports on the MSR development, including any major risks identified at the upcoming KDP-C if those risks may impact other missions' development.

4. Astrobiology Research Coordination Networks (RCNs)

Finding: The PAC commends and appreciates the positive work done by the Astrobiology Research Coordination Networks (RCNs) towards community engagement, early career involvement, and diversity, equity, and inclusion (DEI). The inclusive group formats highlighted by the RCNs (e.g., as reported by NFOLD and PCE3: the think tank, social hour, and early career seminar series) are capturing the attention of the community and target audiences very successfully. Clear topical connections were recognized by the PAC between the work by these RCNs, community Assessment/Analysis Groups (AGs), and NASA groups working on planetary samples.

Recommendation: As many clear similarities and overlap in research interests exist between RCNs and AGs and NASA groups working on samples, particularly with relevance to ongoing and upcoming astrobiology-focused missions, it would be beneficial for PSD to more fully explore formal, intentional and strategic avenues to share information in order to leverage advantages and avoid duplicating efforts. The PAC recommends that relevant programs in PSD explore options to leverage the clear organizational and community-driven advantages that the RCNs provide, and that PSD clearly delineate the roles, responsibilities, and activities of the RCNs. It's possible that some of these connections and definitions are already in place, and the PAC would be interested in hearing about specific examples in future presentations.

5. IDEA Cross-AG Working Group Communication

Finding: The PAC recognizes the importance of the work done by the Inclusivity, Diversity, Equity, and Accessibility (IDEA) Cross-AG Working Group, facilitated by the science community existing across the AGs and the greater planetary community. Thus, as stated in prior Findings (see *March 2021 PAC Finding 7* and *August 2020 PAC Finding 1*), the PAC would like to receive regular updates from the IDEA Cross-AG Working Group about community concerns and their work to address such concerns.

Recommendation: The PAC recommends that PSD leadership converse with the AGs and the IDEA Cross-AG Working Group to (1) determine the types of inputs PSD thinks would be useful additions to PAC

meetings and (2) for PSD to hear from the AGs and the IDEA Cross-AG Working Group on the IDEA Cross-AG Working Group's scope and goals. From this conversation, PSD should create a clear pathway for the IDEA Cross-AG Working Group to share relevant information with the PAC, clarifying if such updates/communications would generally come through the AG reports and/or via direct reports (e.g., when covering a broad-reaching topic). In either case, adequate presentation and discussion time for the community's IDEA topics/concerns should be included in each PAC meeting agenda.

6. Planetary Radar Data

Finding: The Arecibo Observatory is currently scheduled to end science operations in April 2023 with discontinued access for the scientific staff after mid-August 2023. To ensure continued usability of the Arecibo radar data, processing software and systems need to be preserved along with the data. It is presently unclear to the community if the end-of-operations plan includes retaining Arecibo planetary radar data processing software and systems in addition to the radar data archive, and which agency (NSF or NASA) is responsible for such work.

Recommendation: The PAC requests to hear, at the Summer 2023 PAC meeting, the end-of-operations plan for retaining Arecibo planetary radar data processing software and systems, including identification of the appropriate organization for hosting them and the agency responsible for supporting the endeavor.