

OPAG Findings February 3-4, 2020 Meeting

Updated 21 Feb 2020

1. Europa Clipper. OPAG applauds the progress the Europa Clipper team is making toward its Critical Design Review (CDR) this coming August, and the transparency shown by the team that mission development's cost reserves are running very low. The reserve, quantified as Unallocated Future Expenses, reached 12% in November 2019 even though it met the JPL-required 25% as of June 2019. The project team has been able to reconstitute some of the reserve amount required ahead of its CDR, but there is danger that this savings effort will fall short, threatening the mission's science. NASA should recognize the scientific importance of the entire Europa Clipper payload, and strive to fly the full science instrument suite to best achieve the mission objectives.

Finding 1.

OPAG is concerned about the fast drain on the cost reserves. OPAG recognizes the scientific importance of flying the entire Europa Clipper science payloads, and urges NASA to minimize the impact of the low cost reserves on the science investigations.

2. Icy Satellite Technology support. OPAG strongly supports technology development programs that invest in future Ocean Worlds in situ exploration (similar in scope to the ICEE program). OPAG understands that the FY2020 congressional budget includes funding for Icy Satellite technology development. OPAG would like to know the operating plan for this budget line item.

Finding 2.

OPAG supports investment in future Ocean Worlds in situ technology development. OPAG would like a report on the operating plan for the Icy Satellite technology development line item listed in the FY2020 congressional budget.

3. Expanding RCN to other areas of planetary science. OPAG commends NASA for the outstanding impact that programs like the NASA Astrobiology Institute and the new Research Coordination Networks (RCN) have for building up a strong astrobiology community that is actively advancing the search for life in the solar system and beyond. These efforts have led to the development of groundbreaking mission concepts and have benefitted a diverse community of researchers eager to answer the question of whether we are alone in the universe. OPAG encourages NASA to build on this success by expanding RCN opportunities to other planetary science communities. In particular, a Giant Planet System Science RCN would provide opportunities for interdisciplinary coordination among members of the OPAG community who have explored the Jupiter and Saturn systems on missions like Galileo, Cassini, and Juno, and

who are eager to conduct research (Voyager data analysis, theoretical research, and laboratory studies) relevant to future exploration of the Ice Giant systems.

Finding 3.

OPAG commends the outstanding success of NASA Astrobiology programs for building a strong interdisciplinary community advancing the search for life in the universe. OPAG encourages NASA to expand on this model by creating a new RCN for Giant Planet System Science.

4. Dual-anonymous review. OPAG applauds NASA's exploration of the dual-anonymous review process to address diversity/bias issues. OPAG notes that technology programs, particularly instrument development opportunities, are a particular challenge for Principal Investigators from diverse and intersectional backgrounds. For example, all of the PI's selected for the ICEE-2 instrument development program were male with limited representation along other axes of diversity, which gives an appearance of bias. OPAG encourages NASA to test the dual-anonymous review process on an instrument program as the next test program to provide a stronger dataset to evaluate the effectiveness of this review strategy. As examples of programs that receive a large number of proposals and represent good testing grounds of dual-anonymous review process, we point to the PICASSO and Applied Information Systems Research programs.

Finding 4.

OPAG commends NASA's efforts to test dual-anonymous review for R&A programs. OPAG encourages NASA to test dual-anonymous review on an instrument development program in the near future because this is a class of programs that can be perceived as lacking in diversity of selected PIs.

5. EDI Demographic and Climate Surveys. OPAG applauds the volunteer work being done by the Equity, Diversity and Inclusion (EDI) Working Group with participation from all planetary AGs. We fully support the letter sent by the EDI Working Group to NASA HQ on 28 January 2020 which is also available on the OPAG website.

Finding 5.

We encourage implementation of the two recommendations in the letter in time to inform the Decadal Survey, namely: 1) The community has a need for a survey across all of SMD that will enable analysis of multi-dimensional demographics data to understand the diversity aspects of our population, including data that goes beyond gender ratios and includes disciplines; and 2) NASA should commission regular (yearly), professionally-designed climate surveys so that we can fully identify the equity and inclusion issues within our community, and ensure those climate surveys consider relevant axes of power and career structures.

6. Advanced RPS Availability Schedule. OPAG thanks June Zakrajsek of the NASA RPS Program for her briefing. We understand that the development of the eMMRTG has been suspended, and that the NextGen RTG is scheduled to be flight qualified in 2028, with flight unit production starting only after qualification is completed. Previous studies of outer solar system missions that baselined the eMMRTG, such as the recent ice giant missions studies [1], are now obsolete. Since the MMRTG is not a viable option for most long-duration missions [2], the NextGen RTG is the only remaining RPS option currently under development. A lengthy schedule for the NextGen RTG's flight availability could have significant negative impacts on the schedules for some Discovery, New Frontiers, and ice giant flagship mission concepts already studied by NASA and other institutions.

Finding 6.

OPAG requests a further presentation by NASA regarding the schedule for the NextGen RTG development, qualification, flight unit fabrication, testing and delivery for launch, to enable a more detailed discussion at the next OPAG public meeting.

1. Hofstadter, M.D., Simon, A., Ice Giants Pre-Decadal Survey Mission Study Report, JPL D-100520, p. 2-2, 2017 June; available at https://www.lpi.usra.edu/icegiants/mission_study/Full-Report.pdf
2. *ibid*, p 1-8, 2-8.