

## **OPAG Findings (Fall 2020)**

**1a. Europa Clipper Instrument Descopes (WAC).** OPAG applauds the efforts of the Europa Clipper team and NASA Headquarters to maintain the entire suite of instruments on the spacecraft. However, OPAG is concerned with the potential descope of the Wide Angle Camera (WAC) subsystem of the Europa Imaging System (EIS). While the possibility of the WAC actually being descoped was described as unlikely, the potential damage to major science return, in particular, the ability to recognize and certify potential target sites for future landed investigations, raises substantial concern. NASA should recognize the major scientific and programmatic importance of WAC to both the synergistic science return of the other experiments aboard Europa Clipper, and the potential for those results to confidently support subsequent landed missions.

### **1a. Finding**

OPAG strongly encourages NASA to recognize the scientific importance of the EIS WAC to both the science return of the other experiments aboard Europa Clipper and the potential for those results to confidently support future landed missions, and strongly discourage the possibility of the WAC being descoped. OPAG encourages NASA to assess the impact of a potential WAC descope not only to Europa Clipper, but also the potential for those results to support future Europa exploration.

**1b. Europa Clipper Instrument Descopes (MASPEX).** The Mass Spectrometer for Planetary Exploration (MASPEX) experiment aboard Europa Clipper is the primary instrument capable of directly detecting gases escaping from Europa's interior. While OPAG commends NASA Headquarters for its efforts to maintain the entire suite of instruments on the spacecraft, the possibility of the removal of MASPEX entirely is very worrisome and poses a threat to a significant portion of astrobiological science return of the mission.

### **1b. Finding**

OPAG is concerned about significant loss to Europa Clipper mission science return should MASPEX be entirely removed, given its potential role in understanding habitability. OPAG urges NASA to continue to make every reasonable effort to retain MASPEX at a capability no lower than that already stipulated in the performance floor for this instrument, and strenuously avoid its total removal.

## **2. Participating Scientist Call for Juno Extended Mission**

In the event that the JUNO extended mission is approved, the mission and the community would benefit greatly from another participating scientist call. As the extended mission would begin in 2022, such a call should be issued quickly to enable new Participating Scientists to join the Juno as soon as possible. Jupiter's satellites and rings represent an extension into new areas of science for Juno and provide an opportunity to expand OPAG community involvement with this mission. These represent the only OPAG related data sets that can be obtained over the next several years while waiting for Clipper, JUICE, and Dragonfly, and, if selected for Discovery, IVO and/or Trident. The Participating Scientist program is an important opportunity to increase the diversity of expertise on the Juno mission, and amplify the scientific return for the

extended mission phase. It is also an important program for increasing diversity on the mission teams, and providing professional development opportunities to early career scientists and scientists from institutions not traditionally involved in leading missions.

**Finding 2.**

OPAG supports an additional call for Participating Scientists for the Juno extended mission to enable the greatest possible community engagement and scientific return from the extended mission. It is critical to have the call advertised as soon as extended mission decisions are made to enable rapid involvement of new PS.

**3. OPAG applauds NASA for voluntarily collecting demographic data via NSPIRES.** OPAG

is very supportive of this data being collected and disseminated as it helps both NASA and the community to gain a clearer picture of participation in our field and is consistent with OPAG's goal of considering diversity along multiple axes. We encourage the community to continue providing this data as it can be used to pinpoint areas of underrepresentation in our community. Importantly, while demographic data related to binary gender and career stage are routinely reported by NASA, these reports do not include demographic data as it relates to race, ethnicity, non-binary gender, or disability status, although this information is also voluntarily collected in NSPIRES. While it is important that the community continue to provide this data, it is equally important that NASA use the data, in its entirety, in its reporting in order to pinpoint areas where representation of certain groups is still lacking in our community.

**Finding 3.**

We encourage the community to continue providing complete demographic data in NSPIRES. We also request a briefing from the Office of the Chief Scientist on how NASA analyzes this data, how the data are used, and any insights that the data has provided.

**4. OPAG is concerned by the recent decrease in R&A proposal selection rates, in particular for the SSW and HW programs (both 11%).** The effects of the troublingly low

selection rate are especially exacerbated given that mission and instrument AOs discourage sustainable funding levels for science Co-Is (which is a change in paradigm since Voyager through Cassini), and R&A grants are therefore expected to be the primary funding source to fund scientists in NASA-supported fields. OPAG recognizes the need to holistically re-evaluate how scientists are funded to work in NASA-supported fields.

**Finding 4.**

OPAG requests that NASA HQ evaluate the impact of the low proposal selection rates on the NASA-supported science communities, and share a plan at the next OPAG meeting to raise the selection rate needed to sustain a healthy science community within and among NASA ROSES programs.

**5. Two key programs that sustain OPAG-relevant science and technology development – HW and PSTAR – have been reduced to a 2-year cadence.** This decision adversely affects maturation of science, instruments and key technologies important for addressing OPAG-relevant science questions, in particular those pertaining to habitability and astrobiology. Astrobiology is one of the top-level crosscutting recommendations of the last decadal survey, and is a primary focus of the current Decadal Survey. OPAG recognizes the importance of these programs as a backbone that supports those science goals.

**Finding 5.**

OPAG strongly objects to the decision to reduce the cadence of the HW and PSTAR programs. If the 2-year cadence becomes permanent, OPAG requests that NASA HQ implement a strategy to prevent the loss of science and technology development that would have been funded through these programs.