

# **Terms of Reference**

## **Planetary Mission Senior Review (PMSR) – 2020**

### **Background**

NASA conducts regular reviews of its operating science missions in order to assess their continued science productivity and whether their operations should be continued through approval of a mission extension. The NASA Authorization Act of 2005 (P.L. 109-155) states that “The Administrator shall carry out biennial reviews within each of the Science divisions to assess the cost and benefits of extending the date of the termination of data collection for those missions that have exceeded their planned mission life time.” The NASA Transition Authorization Act of 2017 (P.L. 115-10) modified the cadence to be triennial reviews. These reviews of operating missions are NASA’s highest form of peer review, as the subject is not a single science investigation, or even a single space mission, but rather a portfolio of operating missions. The reviews of operating missions are referred to as “senior reviews,” in recognition of the high level of the peer review. Reviews of NASA operating missions now occur on a three-year cadence.

NASA’s Planetary Science Division (PSD) conducted a review of six operating missions during its 2019 Planetary Mission Senior Review (PMSR). PSD will conduct a PMSR of two operating missions in 2020 that were not included in the 2019 PMSR: InSight and Juno. This out-of-cycle review is necessary as both InSight and Juno were still in their primary mission phase at the time of the 2019 review, but will be well past their nominal end-of-mission by the time of the next triennial review in 2022.

The PMSR will cover the period FY21-22 for InSight, and FY21 through end-of-mission (nominally FY25) for Juno.

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The purpose and scope of PMSR 2020 is to provide an independent assessment of cost reasonableness and benefits of extending the termination date of InSight and Juno. The specific goals of the review are to:

- 1) Assess and rate each mission for the period of its extended mission proposal , on the basis of evaluation criteria defined in the Call for Proposals.
- 2) Based on the evaluations above, provide findings to seed an implementation strategy for the portfolio of missions under review for FY21 through FY22, which could be a combination of:
  - a. Continuation of missions at their in-guide budget level;
  - b. Continuation of missions with either enhancements or reductions to their in-guide budgets; and/or
  - c. Termination of missions.

Two Subject Matter Expert (SME) panels (one for InSight and one for Juno) will be convened as part of PMSR 2020. The evaluation criteria for the SME panels will be defined in a Call for Proposals issued to the operating missions being reviewed. Specific details in the Call for Proposals will be coupled to this ToR as directions to the SME panels.

### **Committee Membership**

Review panels shall be assembled and conducted by NASA’s contractor, Arctic Slope Technical Services (ASTS), which also serves as the contractor for NASA Research and Education Support Services (NRESS). ASTS shall assemble two panels of SMEs independent of any influence from NASA/Government representatives. NRESS will coordinate the review venue and logistics for panel members in coordination with the Lead Program Executive for Mission Operations. The review shall be based on proposals submitted by the flight project teams to NSPIRES and presentations to be given at a face-to-face meeting with the SME panels in the summer of 2020.

The PMSR SME panels will have approximately ten to fifteen members total. The membership will consist of leading authorities with relevant expertise in science, engineering, mission operations and data archiving drawn from government, academia, and/or industry. Each panel will be led by a Panel Chair. One reviewer, who will be a member of both SME panels, will serve as the Review Chair for the PMSR. Staff and travel support for panel members will be provided by NRESS/SMD.

### **Interaction with NASA/SMD/PSD**

PSD's Lead Program Executive for Mission Operations will coordinate adherence to the ToR, the Call for Proposals, meeting venue/logistics, and other requirements.

PSD personnel such as Program Executives and Program Scientists may attend the review, but may not advocate for any missions during the presentations or deliberations. They may answer questions asked by the SME panels, or provide programmatic comments.

### **Reporting Requirements**

The PMSR SME panels will report to PSD management and others as requested by the PSD Division Director (DD). The PMSR Chair and Panel Chairs will submit a report containing a synthesis of the SME panels' findings, and a report for each of the two missions being reviewed. Upon consultation with her staff, the PSD DD will brief the SMD Associate Administrator and then report her decision to the Planetary Science Advisory Committee (PAC).

### **Termination**

These Terms of Reference are terminated at the discretion of the DD following consultation with the Associate Administrator, Science Mission Directorate, or in one year, whichever comes first.

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NASA Science Mission Directorate

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