

## DRAFT

### Terms of Reference Astrophysics Senior Review

The Astrophysics Senior Review Subcommittee is a subordinate group (hereinafter, “Subcommittee”) of the Astrophysics Advisory Committee (APAC), a stand-alone advisory group established under the Federal Advisory Committee Act (FACA). The Subcommittee has been established at the discretion of the Director, Astrophysics Division, following consultation with the Associate Administrator, Science Mission Directorate.

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.

The Subcommittee will conduct a senior review for NASA of astrophysics operating missions. The purpose and scope of the senior review is to provide an independent assessment of the cost and benefits of extending the termination date of the suite of operating missions in the NASA Astrophysics portfolio. The specific goals of the review are to:

- 1) In the context of the research objectives and focus areas described in the *2014 SMD Science Plan*, assess the scientific merits of the expected returns from the projects reviewed during the period FY19 through FY21 and FY22 through FY24. The scientific merits include relevance to the research objectives and focus areas, scientific impact, and promise of future scientific impact, as well as contributing to NASA’s overall science objectives in astrophysics;
- 2) Assess the cost efficiency, data availability and usability, and the vitality of the mission’s science team as secondary evaluation criteria;
- 3) Rank the missions on the basis of their scientific merit, their relevance and responsiveness to the division’s strategic goals, and their technical capability and cost reasonableness;
- 4) From the assessments above, provide findings on an implementation strategy for the operating mission portfolio for FY19 through FY21 and FY22 through FY24, which could be a combination of:
  - (i) Continuation of projects at their in-guide level;
  - (ii) Continuation of projects with either enhancements or reductions to their in-guide budgets;
  - (iii) Mission extensions beyond the prime mission phase; and/or,
  - (iv) Termination of projects; and

- 5) Provide an overall assessment of the strength and ability of the operating mission portfolio to meet the expectations of the total science to be obtained from FY19 through FY21 and FY22 through FY24, as represented in the *2014 SMD Science Plan* and in the context of the 2010 Astrophysics Decadal Survey (*New Worlds, New Horizons in Astronomy and Astrophysics*).

The evaluation criteria for the Subcommittee and any subordinate panels will be defined in the Call for Proposals issued to the operating missions being reviewed. This ensures that both the senior review panels and the missions invited to the senior review are aware of the expectations placed upon them.

The Director, Astrophysics Division, will appoint the Chair and members of the Subcommittee, for terms of up to one year. The Subcommittee will have approximately ten to fifteen members. The membership will consist of leading authorities with relevant expertise drawn from government, academia, independent researchers, and industry. Members of the Subcommittee who are not Regular Government Employees (RGE) will be designated Special Government Employees (SGE). Staff and travel support for the Subcommittee Chair and members will be provided by SMD.

The Director, Astrophysics Division, will appoint a Designated Federal Officer (DFO) for the panel who will coordinate membership, meeting, and other requirements.

The Subcommittee can hold up to six meetings during the year and be responsive to the requests of the Director, Astrophysics Division, and the Associate Administrator, Science Mission Directorate. The Director, Astrophysics Division, or the Subcommittee may establish panels as needed, consistent with the Memorandum for the Record, dated February 8, 2018. It is expected that all or most meetings will be non-public, and attendant FOIA administrative procedures will be met.

The Subcommittee will report to the APAC and will not provide advice or work products directly to NASA. The Subcommittee Chair or designated member will submit a senior review report containing the Subcommittee's recommendations and findings, as well as its work products, for public deliberation by the APAC. After public deliberation of the senior review report delivered to it by the Senior Review Subcommittee, the APAC will deliver a final report to NASA reflecting its formal recommendations to NASA, as well as append an unedited copy of the Senior Review Subcommittee's report.

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

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Paul Hertz  
Director, Astrophysics Division  
NASA Science Mission Directorate

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