



Headquarters
Washington, DC 20546-0001

February 8, 2018

Reply to Attn of: SMD/Director, Astrophysics Division

MEMORANDUM FOR THE RECORD: PLAN FOR THE 2019 ASTROPHYSICS SENIOR REVIEW

This memo documents the plan for the 2019 Astrophysics Senior Review of Operating Missions, consistent with Section 5.8.1.1 of the SMD Management Handbook

1. Missions in the 2019 Astrophysics Senior Review

This plan covers all missions that will be operational but beyond their prime mission at any time during the upcoming 5-year PPBE period (FY20-FY24). There are nine missions that are subject to the 2019 Senior Review (SR). In alphabetical order, these are the:

- Chandra X-ray Observatory (Chandra)
- Fermi Gamma-ray Space Telescope (Fermi)
- Hubble Space Telescope (Hubble)
- Neutron star Interior Composition ExploreR (NICER)
- Nuclear Spectroscopic Telescope Array (NuSTAR)
- Stratospheric Observatory for Infrared Astronomy (SOFIA)
- Neil Gehrels Swift Observatory (Swift)
- Transiting Exoplanet Survey Satellite (TESS)
- X-ray Multi-mirror Mission-Newton (XMM-Newton)

There are nine missions that are not subject to the 2019 Senior Review (SR). In alphabetical order, these missions (and the end of their prime mission) are:

- CREAM – Extensions handled through ROSES
- Euclid – Prime mission ends after 2024
- GUSTO – Single balloon flight
- IXPE – Prime mission ends after 2022; Subject to 2022 Senior Review
- Kepler – Fuel will be exhausted in 2018
- Spitzer – NASA funded mission ends in 2019
- XARM – Prime mission ends after 2022; Subject to 2022 Senior Review
- Webb – Prime mission ends after 2022; Subject to 2022 Senior Review
- WFIRST – Prime mission ends after 2024

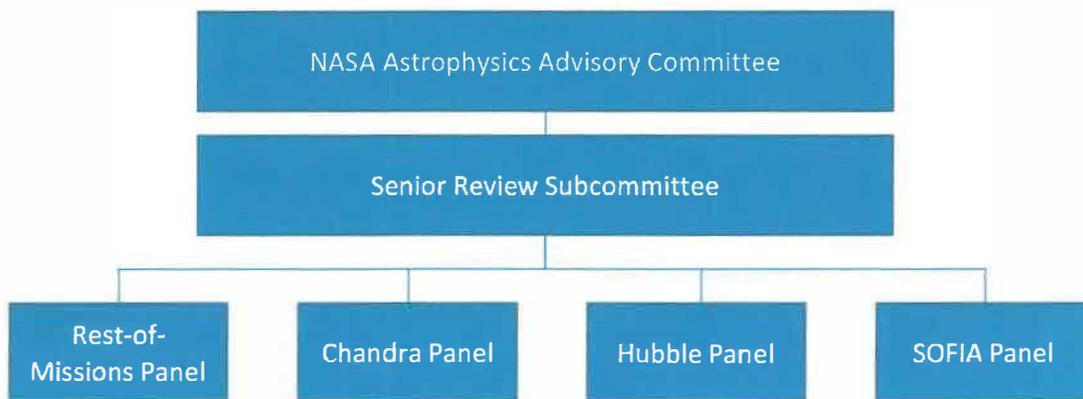
2. Panel Composition and Scope

The 2019 Astrophysics Senior will adopt a hybrid structure (see figure), in which four panels report to a Senior Review Subcommittee, which will be established under the Astrophysics Advisory Committee, compliant with FACA.

2.1 The Chandra and Hubble Panels

Consistent with the 2016 Astrophysics Senior Review, there will be individual panels for Chandra and Hubble, given their status as astrophysics community facilities and because of the scope and complexity of their operations.

Both Chandra and Hubble are mature, stable missions; NASA intends to operate both as long as they are fully functional and their science productivity is unimpaired. Both have received strong endorsements from multiple past Senior Review panels. There have been no significant changes to their operations since the 2016 Senior Review. Accordingly, the 2019 Senior Review will be an incremental or “delta” review that will assess whether there are any efficiencies to be made in their current operating modes.



2.2 The SOFIA Panel

This is SOFIA’s first entry into the Senior Review. Given its status as an astrophysics community facility, and because of the scope and complexity of the operation of an airborne observatory, there will be an individual panel for SOFIA. This is a comprehensive review, and the SOFIA panel will be charged with evaluating SOFIA on the basis of its scientific merit, its relevance and responsiveness to the division’s strategic goals, and its technical capability and cost reasonableness.

2.3 The Rest-of-Missions Panel

The remaining missions (Fermi, NICER, NuSTAR, Swift, TESS, XMM-Newton) will be reviewed in a single panel that will be charged with evaluating them on the basis of their scientific merit, their relevance and responsiveness to the division’s strategic goals, and their technical capability and cost reasonableness.

2.4 The Senior Review Subcommittee

The Senior Review Subcommittee will be established under the APAC, and will operate in compliance with FACA. Its principal role is to merge the findings from each of the four subpanels, and to rank those missions which were evaluated on the basis of their scientific merit, their relevance and responsiveness to the division's strategic goals, and their technical capability and cost reasonableness (i.e., all missions except Chandra and Hubble).

The Senior Review Subcommittee will provide a series of findings to assist with the Astrophysics implementation strategy for FY20-FY24, including an appropriate mix of:

- Continuation of projects at their in-guide level;
- Continuation of projects with either enhancements or reductions to their in-guide budgets;
- Mission extensions beyond the prime mission phase; and/or,
- Termination of projects.

The membership of the Senior Review Subcommittee will be drawn from the Rest-of-Missions, Chandra, Hubble, and SOFIA panels. It will report to the APAC, and will not provide advice or work products directly to NASA. The Subcommittee Chair will report on the Subcommittee's recommendations and findings, as well as its work products, for public deliberation by the APAC. The final report of the Senior Review Subcommittee is a deliverable to the APAC.

2.5 The NASA Astrophysics Advisory Committee (APAC)

The APAC is responsible for approving the Terms of Reference (TOR) for the Senior Review Subcommittee. 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.

3. Schedule

The notional schedule is as follows:

Spring 2018:	APAC approves Terms of Reference for the Senior Review Subcommittee
Summer 2018	Establish Senior Review Subcommittee, including appointment of subcommittee members compliant with FACA
September 2018:	Draft call for proposals issued
November 2018:	Final call for proposals issued
January 2019:	Senior Review proposals due
February-March 2019:	Rest-of-missions, Chandra, Hubble, and SOFIA panels meet.
March 2019:	Reports from Rest-of-missions, Chandra, Hubble, and SOFIA panels due to Senior Review Subcommittee
March 2019:	Senior Review Subcommittee meets.
April 2019:	Senior Review Subcommittee reports to APAC.
May 2019:	APAC delivers formal recommendations to NASA.

May 2019: Incorporation of Senior Review results into PPBE-21.
May 2019: NASA response to Senior Review and direction to projects.

4. Communications Plan

This memorandum, the Senior Review Subcommittee TOR, and the entire call for proposals will be posted on the Astrophysics Division website.

All decisions will be briefed to the SMD Associate Administrator and others, as appropriate based on the decisions made, before direction is provided to missions.

The Astrophysics Division Director will issue direction to each mission. For those missions that are granted mission extensions, a plan and budget will be approved for FY20-21, with preliminary direction for FY22-23. The missions will be provided with a Letter of Direction containing decisions and directions. The Senior Review Subcommittee report and relevant Panel report will be attached.

The APAC report, Senior Review Subcommittee report, and all four Panel reports will be posted on the Astrophysics Division website.

The Astrophysics Division Director will approve a white paper on "NASA's Response to the 2019 Astrophysics Senior Review." The NASA response will be posted on the Astrophysics Division website.

If any missions are proposed for termination, a communication plan will be established with Agency leadership, the Office of Communications, the Office of Legislative Affairs, and other stakeholders.

Submitted



Paul Hertz
Director, Astrophysics Division

2/12/18

Date

Concurred by the SMD Science Management Council on Feb 8, 2018.

Approved



Thomas Zurbuchen
Associate Administrator, SMD

2/12/18

Date