

November 15, 2013



To: GSFC/ J. Wiseman, Project Scientist, Hubble Space Telescope
MSFC/ M. Weisskopf, Project Scientist, Chandra X-ray Observatory
GSFC/ J. McEnery, Project Scientist, Fermi
ARC/ S. Howell, Project Scientist, Kepler¹
JPL/ D. Stern, Project Scientist, NuSTAR
CIT/ F. Harrison, Principle Investigator, NuSTAR
JPL/ C. Lawrence, Project Scientist, Planck
JPL/ M. Werner, Project Scientist, Spitzer
JPL/ P. Eisenhardt, Project Scientist, MaxWise
GSFC/ R. Petrie, Project Scientist, Suzaku
GSFC/ N. Gehrels, Principal Investigator, Swift
GSFC/ S. Snowden, Project Scientist, XMM-Newton

From: NASA HQ/ Jeffrey J.E. Hayes, Discipline Scientist & Program Executive,
Mission Operations and Data Analysis, Astrophysics and Heliophysics
Divisions, SMD

NASA HQ/ Debra J. Wallace, Discipline Scientist & Program Executive,
Astrophysics Division, SMD

Subject: Call for Proposals – Senior Review 2014 of the Missions Operations and Data
Analysis Program for the Astrophysics Division operating missions

Senior Review Background:

NASA’s Science Mission Directorate (SMD) periodically conducts *comparative* reviews of Mission Operations and Data Analysis (MO&DA) programs to maximize the scientific return from these programs within finite resources. The acronym “MO&DA” encompasses operating missions, data analysis from current and past missions, and supporting science activities. NASA uses the findings from these comparative reviews to define an implementation strategy and give programmatic direction to the missions and projects concerned for the next four fiscal years. Additionally, from the NASA

¹ To be confirmed.

Authorization Act of 2005 (Public Law 109-155), Section 304(a):

“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 lifetime.”

The NASA Astrophysics Division (APD) will host the next MO&DA Senior Review – an independent, comparative review of missions within the MO&DA portfolio, which are operating in the extended mission phase in late March 2014. All operating missions currently in extended phase with the intent of remaining in operation or receiving funding past 2014 are subject to this review. All missions will be comparatively assessed by a single Senior Review Panel with the exception of the Hubble Space Telescope and the Chandra X-ray Observatory. The Hubble Space Telescope and the Chandra X-ray Observatory will be reviewed during this timeframe in self-contained and separate reviews by individualized Senior Review Panels. The Archives will be reviewed in a separate Archival Senior Review at a suitable time following the Mission Senior Review.

This Call for Proposals describes the objectives and process for the review and contains instructions for the submission of proposals and in-person presentations to the review panel.

Senior Review Scope:

The Senior Review, held every two years, complements the standing working groups and other peer reviews by conducting an independent, comparative evaluation of all aspects of missions in extended operations. The Senior Review evaluates proposals for funding, usually involving additional resources in upcoming years, to continue operations of missions in extended operations phase. The purpose of this comparative review is to assist NASA in maximizing the scientific productivity *and operating efficiency* of the Astrophysics Division MO&DA Program within the available funding. NASA will use the findings from the Senior Review to:

- Prioritize the operating missions and projects;
- Define an implementation approach to achieve astrophysics strategic objectives;
- Provide programmatic direction to the missions and projects concerned for 2015 and 2016; and
- Issue initial funding guidelines for 2017 and 2018 (to be revisited in the 2016 Senior Review).

The execution of the FY 2013 and 2014 Astrophysics Division’s Operating Missions follows the assessment and prioritization from the Senior Review held in 2012 (see

previous Senior Review reports at <http://science1.nasa.gov/astrophysics/2012-senior-review/>).

This Senior Review will comprise three interrelated reviews. The Astrophysics Senior Review for extended Phase E Missions will assess the merits and performance of these nine missions (in alphabetical order): Fermi, Kepler, MaxWise, NuSTAR, Planck, Spitzer, Suzaku, Swift, and XMM-Newton. The science merits and technical performance of the Hubble Space Telescope and the Chandra X-ray Observatory will be assessed in two separate, equivalent reviews.

The period for this Senior Review will cover FY15 to FY18 to provide decisional input for the FY15-FY16 budgetary period and extended guidelines for FY17-FY18. Each mission that is invited to this Senior Review will submit a proposal outlining how its science investigations will benefit the Astrophysics Division's research objectives. These objectives and focus areas are described in the Science Plan for NASA's Science Mission Directorate 2010 (the SMD Science Plan) and the Astrophysics 2010 Decadal Survey. Performance factors to be evaluated will include mission science productivity, present and future scientific potential, data quality and accessibility, technical status, budget efficiency, and operating efficiency.

Proposals should outline descriptions of the project's scientific merit and most recent accomplishments, the prospect of future scientific impact and productivity, the productivity and vitality of the scientific team, the current and future plans of data dissemination, the technical status of the instruments' health and safety, the level and quality of observatory stewardship, and a detailed budget for the proposed investigations. The projects should report their progress and accomplishments relative to their 2012 Senior Review submission goals. The projects should also summarize any prior Senior Review Panel recommendations and discuss any actions or changes implemented in response to those recommendations.

For this review, projects are requested to submit plans that have a set of Prioritized Mission Objectives (PMOs) for the next 2 years, with a possible extension for an additional two years. These objectives should elucidate the scientific, technical, and/or budgetary priorities for the upcoming two to four-year planning cycle and allow the Senior Review Panel to make a comparative analysis amongst divergent mission needs and priorities for allocating available funding. This will allow NASA flexibility in planning within a dynamic budgetary environment (e.g., reaction to a flat budget without inflation; reaction to a 5% budget reduction; reaction to a 10% budget reduction; or reaction to a 15% budget reduction). These prioritized objectives will also allow subsequent senior reviews to assess and measure the success of each mission in achieving its stated goals, as well as provide reporting inputs for the Agency.

The Senior Review panels, to be formed by NASA HQ, will evaluate these proposals at a series of special meetings (one for MO&DA extended missions, one for Hubble Space Telescope, and one for the Chandra X-ray Observatory). The MO&DA extended mission

reviews will occur in Washington, D.C. March 31 – April 3, 2014. The HST and CXO Senior Reviews will occur in Baltimore and Cambridge, respectively, during the late March timeframe to allow the Senior Review panels to conduct on-site visits of each of these Observatories. The specific dates of the HST and CXO site visits are listed below.

These evaluation results will be contained in individual summary reports submitted to NASA HQ. NASA will use each panel's findings, rankings, and conclusions as input to set mission allocations within the MO&DA portfolio. Actions could include authorizing the mission to pass from its prime phase to extended; maintaining the status quo, significantly restructuring the project; or deciding to terminate an ongoing science mission. The actions will have the most immediate impact on the budget allocations for the portfolio in the near-term (FY15, and FY16) and will act as approximate guidelines for the level of support in the out-years (FY17, and FY18).

Mission Extension Paradigm:

Under this call, the budgets for mission extensions beyond the prime mission lifetime (in NPR 7120.5 parlance, Prime Phase E) will support, at a lower level, the activities required to maintain operations and continue to produce meaningful and significant science data, which is adequately described and accessible to the researcher. When a mission has completed its Prime Phase E, NASA will accept higher operational risk, lower data collection efficiency, and instrument/mission degradation due to aging. Priority is given to maintain understanding of the instrument performance, to monitor progress toward accomplishing the objectives of science observations, and to involve the science community in formulating the mission observing program to make the best scientific use of NASA's Astrophysics missions; however, limited funding will be available in this "minimal-science data analysis mode" for detailed analysis, data fitting, modeling, and interpretation. Those missions currently in extended phase, which have a Guest Observers and/or Guest Investigator program, are expected to offer lower funding and services to users who are assumed to have gained knowledge and familiarity during the mission's prime phase.

It is assumed that, along with this reduced funding profile and greater risk, the cost to implement will be at the level of approximately two-thirds (2/3) that of Prime Phase E. The Astrophysics Division sponsors several competitive programs that support basic research, theory, and data analysis. We have found that these programs provide an alternative source of support to those investigators who encounter reduced mission-funding support as a result of general reductions to mission budgets.

Funding Environment:

Missions proposing to the Astrophysics Division Senior Review are to be assessed with the view of continuing their operations. Given the very tight fiscal environment the

Astrophysics Division faces, hard choices may be required, and mission terminations could result from this Senior Review.

The Schedule for the 2014 Senior Review:

Draft Call for Proposals issued: August 2013
Final Call for Proposals issued: November 15, 2013 (this memo)
Senior Review Proposals due: January 31, 2014
HST site visit: March 11-14, 2014
CXO site visit: March 24-27, 2014
MO&DA Senior Review panel meets in Washington: March 31 – April 3, 2014
Delivery of the panel's report to NASA HQ: May 1, 2014
NASA Response/Direction to projects: June 15, 2014.

Instructions to the Senior Review Panel:

In the following descriptions, “project” and “program” may denote a fully NASA-funded and/or led mission or project or U.S. participation on a mission led by an international partner. NASA HQ will instruct the Senior Review panel to:

1. In the context of the research objectives and focus areas described in the SMD Science Plan, rank the projects, reviewed during the period (FY15 through FY16) and the extended period (FY17 and FY18), on the scientific merit and expected scientific returns on the basis of NASA’s “return on investment” for the requested funding in an era of limited resources. The scientific merits include relevance to the research objectives and focus areas, scientific impact, and promise of future scientific impact, as well as the incremental and synergistic benefit to the Astrophysics Division Mission Portfolio and to the scientific goals of the Astrophysics Division as defined in the Division’s Strategic Objectives and the Astrophysics’ Decadal Review. Missions are expected to maximize their science return and productivity. It is understood that predicting the science productivity of a mission over such a long period is speculative, but missions are asked to assume the *status quo* operationally; hence, the need for Scientific PMOs in the proposal.
2. Assess the cost efficiency, any ongoing technology development, data collection, archiving, distribution, mission and data usability, and the vitality of the mission’s science team as secondary evaluation criteria. The Panel can also suggest changes in observing models or operations that would serve to increase the scientific return and/or legacy of the project in accordance with the extended mission resource allocation paradigm. In brief, is the current operating model of the project essential to the realization of its scientific return or can the “return on investment” be increased?

3. Assess the current costs of the various missions under review, specifically by comparing the projected science returns of existing projects with the potential advances to be gained from an alternative strategy of increased funding for other Division priorities.
4. Consider the scientific tradeoffs and opportunity costs involved in extending existing projects versus reducing or terminating them and using that funding for future flight opportunities, most especially in light of new Astrophysics missions expected to be launched.
5. Provide an overall assessment of the strength and ability of the MO&DA portfolio, including new missions expected to be launched, to meet the expectations of the Astrophysics Division priorities from FY15 through FY18, as represented in the 2010 SMD Science Plan and in the context of the recent 2010 Astrophysics Decadal Survey. Provide a crosscutting, expert assessment of the scientific value provided by current MO&DA funding allocations, and suggest possible alternatives.
6. Based on the above criteria, provide findings to assist with an implementation strategy for Astrophysics Division MO&DA for FY15 through FY18, including an appropriate mix of:
 - a. continuation of projects as currently baselined;
 - b. continuation of projects with either enhancements or reductions to the current baseline;
 - c. mission extensions beyond the prime mission phase, subject to the “Mission Extension Paradigm”; and/or,
 - d. termination of projects.

Instructions to Proposers:

There are three overarching imperatives identified in the 2010 SMD Science Plan: discover how the universe works, explore how the universe began and developed into its present form, and search for Earth-like planets. These objectives are derived from the 2010 Decadal survey [New Worlds, New Horizons in Astronomy and Astrophysics](#) (NWNH). Each project within the Astrophysics portfolio is chosen for its ability to shed insight into these areas. Each project should demonstrate how its science can contribute to the vision of the Astrophysics Division as outlined within the SMD Science Plan, the Decadal Survey, and the Astrophysics Roadmap, which will present a 30-year vision for astrophysics at NASA.

Proposals need to discuss a project’s potential for advancing NASA’s science objectives during the FY15 to FY18 timeframe, in accordance with the instructions to the Senior Review Panel. The proposal should address the following areas specifically and in conjunction with identified PMOs for the next 2-4 year planning cycle:

1. Scientific merit including that of the project itself and its unique capabilities as well as the relevance to the stated Astrophysics research objectives and focus areas as part of the overall Astrophysics MO & DA mission portfolio. Missions having a comprehensive and extensive Guest Observer/Investigator (GO) program should be prepared to discuss the relative merits and scientific productivity of these programs compared to alternate sources of research funding within the Astrophysics Division Research & Analysis portfolio;
2. Promise of future impact and productivity (due to uniqueness of capabilities, wavelength coverage, etc.) during the current year planning cycle (again, missions with GO programs should be prepared to discuss the promise of those programs);
3. Impact of past scientific results as evidenced by citations, press releases, Nobel Prizes, etc. and how that ties into future promise;
4. Broad accessibility, usability, and utility of the data, both as a unique mission and as a member of the Astrophysics MO&DA portfolio, focusing on the cost efficiency, technology development, data collection, archiving, and distribution;
5. Spacecraft and instrument health and safety;
6. Productivity and vitality of the science team (e.g., continuity and expertise in the calibration, validation, and archiving of instrumental data, scientific research, training younger scientists, etc.). This may also include training of younger scientists from GO programs, if known;
7. Level and quality of observatory stewardship (e.g. maximizing the scientific return while minimizing the ongoing costs).

Due to the current uncertainty on the implementation of Education and Public Outreach activities at the agency level, a comprehensive review of any on-going activities will be deferred until after this review.

The proposal shall contain the following sections:

- Science and Science Implementation
- Technical and Budget (including Health & Safety)
- Appendix – Mission Archive Plan
- Acronym List
- Standard Budget Spreadsheet

The scientific and the technical/budget sections combined should not exceed more than 30 pages (including figures, figure captions, tables, graphics, bibliographies, and

references). *Not included* in the page limit are the appendices, the acronym list, or the budget spreadsheet. Letters of endorsement are *not* needed for the Senior Review, and should not be included.

All pages are to be formatted on 8.5 x 11-inch paper, single-spaced, with 0.75 inch margins using a minimum of 11 point Ariel font style. The entire proposal, except budget spreadsheets, must be submitted electronically in PDF format; the budget must be submitted using the provided Excel format (which may be expanded upon as needed).

Should the home institution require signatures, please prepare these as a cover letter to the proposal. Copies of this submittal letter will not be used in the review but will be retained within the Astrophysics Division. Sufficient proposal identifiers include the project name and names of key writers or presenters placed at the top of the first page. Letters of endorsement and support from prominent community members or institutions, testimonials, and other similar additional materials are not solicited and should not be included with your proposal submission.

Instructions for the Science and Science Implementation Section:

The science and science implementation section of the proposal should describe the science merits of the proposed continued program and the specific contributions of the instruments to the mission and to the astrophysics portfolio. This section should focus on how the proposed science objectives will contribute to the state of knowledge of the discipline, and their relevance to the research objectives and focus areas as stated in the SMD Science Plan, the 2010 Astrophysics Decadal Survey and long-term vision of the Astrophysics Division as outlined in the soon-to-be-released Roadmap. The science proposal should include an explicit summary of what has been accomplished to date (focusing principally on advances accomplished since the last Senior Review), a self-assessment of performance against the prior Senior Review Proposal's objectives, and a synopsis of how the recommendations of the 2012 Senior Review were addressed. Also include a set of Prioritized Mission Objectives (PMOs) for the next four years, and a detailed description of how the PMOs will be accomplished. For missions currently in extended phase, it is not necessary to cite the mission's original science objectives. Each team is expected to conduct extended phase scientific investigations of the highest scientific merit with a clear implementation plan. These investigations should be distinct from the task of archiving data. The reporting of results to the scientific community via refereed journal articles and other means should be summarized in a way that makes it possible to assess the productivity over the last two years (if currently in extended Phase E). Proposers should specifically address how future achievements will build upon past results. The scientific merit of the program is a major criterion used to determine ranking.

Instructions for the Technical/Budget Section:

The section should begin with a discussion of the overall technical status of the components of the mission. These should include the spacecraft, instruments, and ground system including spacecraft control center and science center(s). The discussion should summarize the health of the components and point out limitations as a result of degradation, aging, use of consumables, obsolescence, etc. Any funding to Instrument Teams or other groups should be described and justified in detail. Projects are also instructed to show, in an appropriate summary manner, the anticipated 'in kind' support from NASA-funded sources other than the project's in-guide budget. These 'in kind' sources include tracking support from the NASA tracking networks and support from the multi-mission infrastructure projects at GSFC, MSFC, JPL, and elsewhere. Representations of direct or in-kind funding from international partners, from other US Government agencies, or non-Government institutions should be provided separately, for informational purposes.

A second part of this section should discuss the proposed budgets. Labor, major equipment, and other expenses for the in-guideline budget must be explained in sufficient detail to determine the merit and incremental cost of each proposed task. Labor costs should be explicitly sub-categorized as Civil Servant or Contractor. The proposed cost must represent the entire value of the project, including project expenditure, expenses paid by the Center, tracking networks (DSN, TDRSS, etc.), tail circuits, and multi-mission infrastructure projects such as the Advanced Multi-mission Operations System (AMMOS) at JPL and the Space Science Mission Operations (SSMO) Project at GSFC. Missions in extended phase are asked to separate the costs of obtaining, validating, calibrating, and archiving data from costs of completing scientific investigations with the data obtained.

Each project must propose an in-guide plan, which follows the NASA budget guideline for the period under review. The attached spreadsheet contains instructions and the mandatory form for the budget portion of the proposal. This form will serve as a standard budget spreadsheet for all proposals, and allows the panel to make the appropriate comparisons. For the period under consideration in this Senior Review, the budget should be itemized, as required in the spreadsheet, and described and justified in full detail in the technical and budget section. *The project is also required to submit Technical and Budgetary Prioritized Mission Objectives (PMOs) to facilitate the SR Panels ability to assess planned operating efficiencies and budgetary reductions in accordance with the Extended Mission paradigm.* Appendix A provides the mandatory budget summary form with instructions and definitions. The budget spreadsheet provides tables for NASA-provided 'in kind' support and instrument team budgets. This form will serve as a standard budget summary for all proposals; each proposal may include additional details in a format determined by each project.

If the current budget guideline for the project (as part of the current NASA operating plan) for any of the fiscal years is greater than zero, provide a plan that meets that guideline.

If the project believes that the current budget guideline is insufficient, the project should identify the impact of the current budget on the mission, with emphasis on the science content. If the current budget guideline for the project for any of the years is zero, and it is proposed to carry on the investigations during that year, then the project should propose a minimum scenario to keep the mission viable. By identifying such a minimum acceptable funding level, the project is indicating that any lower funding level is untenable, and that the project should be terminated rather than be funded at a sub-minimal level.

Projects may also submit an “Over-guide Budget” if the proposed in-guide budget poses a significant (self-assessed) risk to the continued operations of a given mission. The proposed over-guide budget should be included with full cognizance of the very tight fiscal constraints that NASA faces. In other words, this over-guide request should be a carefully considered request, not a maximal request. The science/technical/budget description of this scenario should address the added scope and expected benefits compared to the in-guideline scenario. The added return (science, technical, spacecraft health and safety, etc.) from the over-guide versus the in-guideline plan should be clearly identified. The budget section should explicitly detail the use of the additional requested funds. The added return should be clearly connected to the additional budget required (over the current budget guideline) so that the Senior Review can recommend none, some, or all of the added return and estimate the budget required for partially funding any proposed increases.

Required Appendices:

The following appendices are required and do not count against the page limit:

- Standard budget in the mandatory format. The spreadsheet template in Appendix A provides the mandatory summary format for your budget and supplies a spreadsheet template.
- Acronym list. Include a full list of all acronyms used with their designations spelled out.
- On-line bibliography of publications.

Proposal Submission:

The proposals will be uploaded electronically in PDF format to the NASA NSPIRES website and must be received by Jan 31, 2014 at 5 pm EST. Please note the following changes from previous practice: 1) the submissions will be made through the NASA NSPIRES website; 2) the standard budget template must be appended to the proposals; 3) the entire submission must be made as a single file in PDF format.

Further Information Required for the Senior Review Deliberations:

After submission of proposals, members of the Senior Review panels may have further questions or requests for clarification. If that is the case, for the MO&DA panel, identical requests for further information will be sent to all projects prior to the review.

As part of a proposal submission, we request that you provide an on-line bibliography of recent publications. The proposal should contain the URL to this bibliography. The Astrophysics Division recommends that the bibliography should be listed in sequence with the most recent refereed publications first. The bibliography should contain, as a minimum, the most recent (2-3 years) papers, although it may list all papers for the lifetime of the mission. It is appropriate to list papers to American Astronomical Society (AAS) meetings, conferences, workshops, PhD theses, etc., but these should be listed separately from the listing of the refereed papers.

The Meeting of the MO&DA Senior Review Panel:

We anticipate that the MO&DA Senior Review panel will meet for four days and follow this agenda:

- Day 1: Morning: Instructions, MO&DA program background, logistics (writing assignments, etc.), and a discussion of conflicts of interest and the procedures to minimize their impacts. Rest of the day: Project presentations, plus questions and answers (project assignments TBD);
- Day 2: Complete project presentations, and begin assessments;
- Day 3: Continue assessments, and draft preliminary summary of findings; and,
- Day 4: Finalize draft, and present preliminary findings to DD.

Presentations to the Review Panel:

For the main Senior Review panel held in Washington, each Extended Phase Mission will be allotted 90 minutes for an oral presentation to the Extended Mission Senior Review Panel. During each EPM project presentation, the project representatives should plan on using one hour of the allocated time for their prepared presentation, and reserving one-half hour for questions and answers. To minimize the burden on projects but also allow for adequate expertise and support to be present, no more than three

people may represent any one of the projects. The project presentations should accomplish several objectives:

- The primary purpose of the oral presentations is to provide a forum for questions from panelists and answers from the projects.
- Secondly, this is an opportunity for projects to provide any significant updates; e.g., science results obtained since proposal submission.
- Lastly, and with the lowest priority, it is an opportunity to repeat the highlights of the proposals, which have been read by all panelists.

The HST and CXO site visits will be similar in format to the main Senior Review panel, but will be concentrated on allowing the panel to gain insight into the overall operations of largely community-driven observatories, as well as the required infrastructure for their maintenance. The visits are to assess the scientific productivity, spacecraft robustness, and operating efficiency of the Mission. Members of the Senior Review panel may request discussion with key support personnel as necessary to complete the SR Panel charge.

We anticipate that the HST and CXO Senior Reviews panels will meet for four days each, and follow this agenda:

- Day 1: Morning: Instructions, MO&DA program background, logistics (writing assignments, etc.), and a discussion of conflicts of interest and the procedures to minimize their impacts. Rest of the day: Project presentation, plus questions and answers;
- Day 2: Site visit, individual discussion, and commence assessments;
- Day 3: Continuation of site visit, follow-up question session as needed. Begin the draft of the findings; and
- Day 4: Continue to draft summary of findings, and present preliminary findings to DD.

The HST and CXO panels will be requested to:

- 1) Assess the scientific merit and expected science return of HST and CXO. Scientific merit includes the unique capabilities of the observatory, impact of past scientific results and the promise of future impact and productivity. Evaluate whether the scientific merit and expected science return are commensurate with the high standards of a Great Observatory. Review the relevance of the ongoing and projected science in the context of current and future astrophysics missions,

- including synergies with other missions and elements of the Astrophysics Division portfolio and complementarity with ground-based observatories.
- 2) Review how the science produced by HST and CXO addresses the strategic objectives of the Astrophysics Division. Assess how the science of Hubble/Chandra will contribute to the long-term vision of the astronomical community as represented by the 2010 Decadal Survey New Worlds New Horizons in Astronomy and Astrophysics and the Astrophysics Division Roadmap. Determine whether HST and CXO are an integral and vital component of the Astrophysics Division's mission portfolio.
 - 3) Great Observatories represent a significant investment by the Astrophysics Division. Assess the effectiveness of HST and CXO, and its associated operations center and infrastructure in enabling new science, archival research, and theory.
 - 4) Assess the effectiveness of the science and mission operations processes, and identify any obvious technical obstacles to achieving HST's and CXO's science objectives in the next two to four years. As senior members of the astrophysics community who are cognizant of the constrained budget environment and aspirations of your community, make a recommendation on whether or not to extend this mission.
 - 5) Assess the overall quality of observatory stewardship, and review usage of the allocated funds, in light of overall limited financial resources, to maximize science quality, observational efficiency, and return on investment.
 - 6) Provide any relevant recommendations that would enhance the science return of the mission within its available resources.

After the meeting of the Senior Review panel:

By the end of the meeting of the Senior Review panel, there should be a good first draft of the panel's report. The key findings and conclusions should be drafted and reviewed prior to dismissing the panel. At the end of the last day, the panel will out-brief their report to the Astrophysics Division Director and staff. The panel may then take an additional 2-3 weeks to finalize and submit its report.

In May-June 2014, NASA HQ will contact each of the proposing missions/projects and relay direction resulting from the Senior Review. This direction may include new budget guidelines and other specific instructions resulting from the Senior Review process, possibly including notices of intent to terminate. At this time, NASA HQ will post the report of the Senior Review panel and the APD response to a public NASA HQ website. Each of the projects will then submit back to NASA HQ their plan for complying with the new guidance and instructions. The NASA HQ program scientists will ensure that key officials in participating international space agencies or other U.S. government agencies that are partners in a proposing mission are contacted and apprised of NASA's decisions resulting from the Senior Review.

The next Senior Review will be held 2 years hence. Biennial Senior Reviews allow

NASA the ability to rebalance its astrophysics mission portfolio as needed.

Further Information:

For further information, please contact:

Jeffrey J.E. Hayes, FRAS
Discipline Scientist
Program Executive, Mission Operations and Data Analysis
Heliophysics and Astrophysics Divisions
Science Mission Directorate
NASA Headquarters
300 E Street SW, Washington DC 20546-0001
Tel: 202.358.0353, Fax: 202.358.3987, Cell: 202.441.2541
E-mail: jhayes@nasa.gov

Debra J. Wallace, PhD
Program Scientist & Program Executive
Astrophysics Division
Science Mission Directorate
NASA Headquarters
300 E Street SW, Washington DC 20546-0001
Tel: 202-358-0917, Fax: 202-358-0827, Cell: 202-380-7269
E-mail: debra.j.wallace@nasa.gov

Appendix A:

One attachment:
MS Excel spreadsheet: Astro_SR_2014_Std_Budget_Spreadsheet_FINAL.xlsx

Useful Links:

Strategic/Policy Documents and other inputs:

SMD Science Plan (2010):

http://science1.nasa.gov/media/medialibrary/2010/03/31/Science_Plan_07.pdf

APD Astrophysics Decadal Survey:

http://www.nap.edu/catalog.php?record_id=12951

Mission Archive Plans:

NASA Data Policy:

<http://www.nasa.gov/open/plan/science-data-access.html>