NASA Astrophysics

NASA Response to AAAC 2017-2018 Report

Response to Recommendations - 1

Recommendation: All current and planned surveys should publicly release their data with suitable access tools and documentation.

Response: NASA concurs. NASA releases all its data to the public through its Astrophysics archives and will continue to do so. Tools and documentation are provided. Funding to analyze data in NASA's Astrophysics archives is provided through open, peer reviewed solicitations. Interoperability between the NASA archives and with non-NASA archives worldwide is provided through the NASA Astronomical Virtual Observatories (NAVO), using International Virtual Astronomical Observatories (IVAO) protocols.

Recommendation: The three agencies should coordinate, and where possible standardize, the guidelines and expectations for the releases of data sets, data products, data access tools, and related software used to produce future surveys, astrophysical simulations, and missions.

Response: NASA concurs. NASA continues to engage with NSF and DOE on the coordination of processing and archiving data from WFIRST, Euclid, and LSST. A joint processing working group is conducting a detailed study over two years to assess the benefits, approach, and cost of implementing joint processing. A final report to the Agencies is expected in 2019.

Discussion topic

Response to Recommendations - 2

Recommendation: We recommend that the three agencies either broaden the current discussions or create parallel discussions to consider broadly the costs and benefits of coordination on the science areas of interest to both the Euclid and LSST communities. We recognize that if a decision is made to plan for coordination between LSST and Euclid during construction of LSST and to execute such a plan during LSST operations, the budgets for both the construction and operation of LSST would likely need an augmentation.

Recommendation: The agencies should continue to prioritize a balanced portfolio, and in particular maintain a viable research and analysis program, using existing mechanisms familiar to the community such as the portfolio reviews and pacing of the early funding and review milestones for new projects. The agencies should communicate clearly with the community as these processes evolve to match the pressures on their programs.

Response: NASA concurs. A balanced portfolio of missions (Large, medium, and small), technology development, archives, and research and analysis is essential for a healthy science program. NASA remains committed to working to keep projects on schedule and on budget. NASA will continue to use the Senior Review process to assess the value of continued operation of missions. NASA looks to NAS studies and its advisory committees to assess the balance between missions, technology, archives, and research.

NASA communicates its strategy to the scientific community and seeks input through a variety of public forums, including its Astrophysics Implementation Plan, advisory groups, working groups, Town Hall meetings, and newsletters.

Response to Recommendations - 3

Recommendation: The AAAC supports an intensification by NSF and NASA of existing collaborations that support multi-messenger astronomy, inspiring a new generation of engineers and scientists to work in this emerging area.

Recommendation: The AAAC recommends that all three agencies, in recognition of the compelling science opportunities provided by the emerging field of multi-messenger astronomy, do their best to support the capabilities, facilities, missions, and programs on which progress in this area depends. For the NSF, multi-messenger astronomy is a well-recognized high priority. We recommend that DOE and NASA stay in close communication with NSF to avoid inadvertently hindering, through actions affecting their own programs or missions, this high priority of their partner agency.

Response: *NASA concurs. NASA and NSF have formed an Interagency Taskforce to look at current state-of-the-art collaboration opportunities to support multi-messenger astrophysics. Specifically, this Taskforce will look at current models of collaborations to identify gaps and best practices and will then recommend actions to the two Agencies.*

As a first step, the Taskforce organized and held a Town Hall at the Summer 2018 AAS meeting in Denver CO, requesting input from the astrophysics community of how to enhance multi-messenger astrophysics practices at the two Agencies. The Town Hall was well attended and will be held again at the Winter 2019 AAS meeting and April 2019 American Physical Society meeting.

Response to Recommendations - 4

Recommendation: NASA and NSF should enhance their collaboration with each other and with other groups, including international agencies and commercial interests, to protect the accessibility of essential astronomical wavelengths to researchers.

Recommendation: Efforts, ideally coordinated with all three agencies, should be made to increase awareness of spectrum management issues among astronomers, the general public, and government agencies. Possible agents for meeting this recommendation might include the NSF-funded national facilities for operations at radio and optical wavelengths.

Response: The draft U.S. Spectrum Policy decision memo does not include the use of spectrum for observational radio astronomy, a unique key to understanding our universe highlighted by the National Academies reports. It is important that we preserve scientifically important bandpasses because once they are gone, they are nearly impossible to reinstate. NASA suggests that, if they have not already been engaged, NSF be given an opportunity to provide additional text addressing this omission in the draft policy decision memo.

Discussion topic

Response to Recommendations - 5

Recommendation: The AAAC supports the recommendations of the 2017 WFIRST Independent External Technical/Management/Cost Review (*WIETR)* report and the subsequent process implemented by the NASA Associate Administrator in October of 2017 for realizing the science that would be delivered through the *Wide-Field Infrared Survey Telescope*. The AAAC agrees with the need to maintain cost containment for the WFIRST mission, and supports a rigorous cost assessment and mission review prior to WFIRST entering Phase B.

Response: NASA concurs. The WFIRST scope has been reduced, and other changes have been made, to align WFIRST with a $3.2B cost target. WFIRST recently was given approval to begin Phase B with explicit direction to maintain the $3.2B cost target.

Recommendation: In order to maintain a balanced investment in astrophysical research while continuing to support WFIRST, the highest ranked priority for NASA by the most recent decadal survey, *NWNH,* we recommend that the NASA budget be increased above the Presidents' request to allow a funding level for the astrophysics division that would enable the funding of WFIRST to continue in the context of a balanced portfolio of investment.

Recommendation: The AAAC urges Congress to increase the proposed FY 2019 appropriation for NASA above the President's request, enabling NASA and the administration to maintain their past support for the highest priority of *NWNH* for a new space initiative (NASA's Wide-Field Infrared Survey Telescope, WFIRST), allow a balanced program within NASA astrophysics, and still enable the President's proposed new initiatives for NASA.

Response: These recommendations are not addressed to NASA. However both the House and the Senate marked the NASA astrophysics budget above the request, including directed appropriations for continuing the development of WFIRST.

Response to Recommendations - 6

Recommendation: The AAAC supports the recommendations of *NWNH* and *NWNH-AMA* that the NASA Astrophysics Division execute at least four Announcements of Opportunity for the Explorer program this decade, followed by Mission of Opportunity calls and mission selection, to preserve this valuable program of agile, low-cost missions in space.

Response: NASA concurs. AOs followed by selections have been released in 2011 (TESS, NICER), 2014 (IXPE, GUSTO), 2016 (mission candidates in competitive Phase A), and 2019 (planned).

Recommendation: The AAAC supports the NASA Astrophysics Division CubeSat initiative and recommends it continue to execute Announcements of Opportunity to determine the viability of CubeSats as a valuable component of NASA's efforts in astrophysics.

Response: NASA concurs. CubeSats continue to be solicited as part of the ROSES NASA Research Announcement. NASA is allocating $5M per year for CubeSats.

Recommendation: NSF and NASA should continue to carry out and evaluate their strategies for reducing proposal pressure, reporting to the community for feedback on their evaluation strategies and the results.

Discussion topic