Minutes of the Meeting of the Astronomy and Astrophysics Advisory Committee

2 May 2013
National Science Foundation, Arlington, VA, via teleconference

Members attending:	Andreas Albrecht (Vice-Chair)	Martha Haynes (Chair)
	Stefi Baum	Geoffrey Marcy
	James Buckley	Mordecai-Mark Mac Low
	William Cochran	Richard Matzner
	Priscilla Cushman	Paula Szkody
	Debra Elmegreen	Paul VandenBout
	Joshua Frieman	
Agency personnel:	James Ulvestad, NSF-AST	Paul Hertz, NASA
	Thomas Statler, NSF-AST	Eric Smith, NASA
	Maria Womack, NSF-AST	Hashima Hasan, NASA
	Randy Phelps, NSF-OIA	Kathy Turner, DOE
Others:	Steve Unwin, JPL	Pete Roming, SWRI
	Dan Leone, Space News	

MEETING CONVENED 11:00 AM EDT, 2 MAY 2013

The Chair called the meeting to order.

The minutes of the February 12-13, 2013 and March 1, 2013 meetings were approved.

The Chair briefly reviewed the annual report with the Committee and others.

Jim Ulvestad commented that several OSTP persons had indicated that they had read the report; the strategy of a crisp and concise report seemed to have been a success. The Chair made the point that agencies are doing projects together the way they should be. A discussion at the Board on Physics and Astronomy placed an emphasis on collaborations, especially international and the complications they entail; this is the only way that big projects will get done.

Paul Hertz reported that this is a time of opportunity for the Astrophysics Division. The FY 2014 budget request remains at a high level. Both the large and small space-based observatories are spanning all areas of the electromagnetic spectrum in studying the universe. The James Webb Space telescope (JWST), the highest priority of the astrophysics community, is on schedule and fully funded for an October 2018 launch. Two new Explorer projects have been down-selected and are beginning development for launch in this decade. Individual investigators are leading data analysis, theory, and technology development projects selected through open, competitive, peer-reviewed solicitations. NASA Astrophysics is preparing for the strategic mission that will be developed following JWST.

However, the budgetary future still remains uncertain. The FY 2013 rescission and sequester has had an impact. A constrained budget for FY 2014 and planning for FY 2015 and beyond means priorities must be set and choices must be made. Congress appropriated $659M for Astrophysics and $628M for JWST in FY 2013. The Astrophysics appropriation is $10M over the President's budget request; the additional amount is earmarked for WFIRST studies. The JWST appropriation was the same as the request. The exact amount of the rescission and sequester are not public until the operating plan is approved by Congress. Astrophysics will take reductions in carry-over for operating missions including rephasing of guest observer (GO) funds, rephasing of unneeded FY 2013 reserves for developing missions, rephasing research and analysis (R&A) funding until FY 2014 for some principal investigators (PIs) thereby reducing uncommitted funding available in FY 2014 for new selections, and slowdown in the development of future Explorers. These impacts will include lowering the R&A selections rates in 2013 for FY 2014 funding, delaying future Explorer Announcements of Opportunity (AOs), and other reductions in FY2014 where funding requirements are deferred from FY 2013.

In response to the recommendation of the 2012 Senior Review, reductions are planned for Fermi to take advantage of operational efficiencies; these reductions were planned to be phased over three years. The FY 2014 President's Budget Request (PBR) requests less funding for Fermi than planned; the savings from operational efficiencies will need to be realized immediately in FY 2014. The Fermi Guest Observers program will be eliminated for one year (FY 2014). NASA is working with DOE and its international partners on Fermi to make the necessary changes in Fermi operations. **[Note: Although it was thought at the time of the AAAC meeting that elimination of the Fermi GO program for a year was necessary to accomplish the required funding reductions, the Fermi project has been able to realize the necessary reductions without elimination of the GO program for a year.]**

The Explorer program continues to support missions in development and missions in operations. The pace of how the Astrophysics implements the program, however, will have to be adjusted to stay within the funding profile requested for the Explorer program in the FY 2014 budget request. The FY 2014 budget request does not support the selection of an astrophysics mission of opportunity from the 2012 Astrophysics Explorer Mission of Opportunity AO. The evaluation of proposals will be completed but a selection will not be made.

Jim Buckley pointed out that the gamma-ray community will take a significant reduction in funding versus other areas in astronomy; in particular, the cuts will affect postdocs significantly.

Debra Elmegreen asked whether the Euclid project was a contributing factor to the Explorer problems. Hertz replied that the reduction in the FY2014 budget was the contributing factor in the slow-down in the development of future Explorers.

Kathy Turner reported that the FY 2013 President's Budget Request for High Energy Physics (HEP) was for $776M but the final amount is expected to be less due to the continuing resolution, sequestration and other issues. The PBR included a request for a Major Item of Equipment (MIE) fabrication start for the Large Synoptic Survey Telescope (LSST) camera, which was not approved. As a result, long-lead procurements cannot be made in FY 2013.

The FY 2014 PBR is $776 million, which will be above the FY 2012 budget if approved. Basically the FY 2014 budget philosophy is to enable new world-leading HEP capabilities in the U.S. through investments on all three frontiers. This will be accomplished through ramp-down of existing projects and research. The FY 2014 request shows increases for HEP Research which are driven by this R&D "bump," while construction/MIE funding is decreased relative to FY

2012. The PBR includes a MIE fabrication start for the LSST-camera and Muon g-2 experiment. It also includes Long Baseline Neutrino Experiment (LBNE) and Muon-2e construction funding. The PBR does not include a MIE fabrication start for Large Hadron Collider (LHC) upgrades, Dark Matter 2nd Generation (DM-G2) or Mid-Scale Dark Energy Spectroscopic Instrument (MS-DESI) experiments.

Steffi Baum asked whether the budget cuts would have an impact on DOE's funding for LSST. Kathy Turner indicated that the budget reductions and restrictions would mean the needed approval would not be in time and could possibly delay the camera.

Jim Ulvestad pointed out that the camera and telescope were separately tracked, so this need not hold up the telescope. If the camera was delayed, this would not slow down the construction of the telescope (he mentioned the "critical path" concept in projects).

The American Physical Society Division of Particles and Fields (APS-DPF) "Snowmass" community planning process will conclude in August 2013 and will identify compelling HEP science opportunities over an approximately 20 year time frame. It is not a prioritization but it will make scientific judgments for future planning. Following this, HEP is planning a process (via a HEPAP "P5" subpanel) to develop a new strategic plan and project priorities for HEP in various funding scenarios, using the DPF/Snowmass and other inputs.

The DOE Office of Science is developing a policy for digital data management that is consistent with recent Office of Science and Technology Policy (OSTP) guidance on "Increasing Access to the Results of Federally Funded Research" (http://www.whitehouse.gov/blog/2013/02/22/expanding-public-access-results-federally-funded-research This policy will come into effect October 1, 2013. The focus of the policy is sharing and preservation of *digital research data*– the data required to validate research findings.

A brief review of existing and planned projects was given to the Committee.

Jim Ulvestad presented an update on AST activities. He provided some programmatic updates on the Atacama Large Millimeter-submillimeter Array (ALMA) project. There are 66 antennas in Chile with 55 at the high site. There were 112 early-science projects selected from Cycle 0 proposals (~900 proposals submitted) with 90% of them completed. There were 196 high-priority projects selected from 1133 Cycle proposals. The inauguration was March 13, 2013.

A full year NSF appropriation was passed in late March. The NSF divisions have not yet been given budget numbers to propose a plan for FY 2013. A final Congressionally-approved AST budget may not be known until June. Individual investigator research awards and decision on fourth quarter funding for facilities is unlikely before mid-June. Senate Appropriations Committee language included specific numbers and instructions for MPS/AST, but interpretation in the sequestration scenario is not yet finalized.

Resolution of the President's FY 2014 Budget Request depends on the outcome of national issues regarding economy and sequestration. The Major Research Equipment and Facilities Construction (MREFC) Large Synoptic Survey Telescope (LSST) construction start in FY 2014 was requested and the Advanced Technology Solar Telescope (ATST) is undergoing a re-baseline assessment because of the 30-month delay in site access. The FY 2014 AST request of $243.6M is a 3.9% increase over FY 2012. Facility funding is relatively flat or decreasing, except for the ALMA ramp. Beginning of the ATST Operations ramp was deferred until FY 2015. There is a $7M request for a Mid-Scale Innovations Program in the FY2014 PBR.

Ulvestad indicated that it would be difficult if not impossible to make cuts to facilities to satisfy final FY 2013 budget allocations at this point in time and this would cause AST to hold off on any awards for a while.

A response document (to the Portfolio Review recommendations) was issued in late August 2012, noting that decisions needed to be made by the end of 2013; no divestments decisions have been made. AST is exploring various partnership models for major facilities that were recommended for divestment. The Division is proceeding on competitions for management of NOAO, NRAO, and Gemini, all to be decided in 2015. Solicitations will be released this summer that will describe the scope of work for each of the facilities being competed. The Green Bank Telescope (GBT) and the Very Long Baseline Array (VLBA) will be partitioned from the NRAO competition.

A committee member inquired whether ALMA was part of the NRAO competition. Ulvestad replied that both ALMA and EVLA would be included in the competition.

The bottom line is that until facility divestments occur, or budgets rebound significantly, it is not possible to (1) maintain the current grants programs, (2) start a competed mid-scale line and (3) support ALMA and ATST operations profiles. (Future LSST ramp exacerbates, but does not cause, the problem.)

A topic that was discussed was whether the growth of soft-money researchers was outpacing federal money; what about faculty hires in astronomy. There was mention about a National Academy of Science book/report on faculty hires that could be referenced. Jim Buckley, Bill Cochran, Andy Albrecht, Richard Matzner all volunteered to look at the National Science Indicators office for information related to this. Jim Ulvestad indicated he would set up a telecon to discuss the issue.

There was discussion of future meetings. The Fall meeting is scheduled for November 13-14. The meetings for 2014 were not decided. Liz Pentecost will send out a doodle poll for selection of dates.

Jim Ulvestad explained the process of adding new members and who can be the vice-chair. He indicated that the AAAC will be sitting without a vice chair following the turnover in membership at the end of June, and that he would discuss the issue with the incoming Chair, Andy Albrecht, the following week.

MEETING ADJOURNED AT 4:00 PM EDT, 2 MAY 2013