

**Minutes of the Briefing to the
Astronomy and Astrophysics Advisory Committee
25 September 2012 (Teleconference)
National Science Foundation, Arlington, VA**

Members:	Stefi Baum Sarah Church (former Chair) Debra Elmegreen Joshua Frieman Martha Haynes (Chair)	Mordecai-Mark Mac Low Paul Vanden Bout Brian Winer (former member) Charles Woodward (former member)
New Members	James Buckley William Cochran	Priscilla Cushman Paula Szkody
Agency personnel:	James Ulvestad, NSF-AST Thomas Statler, NSF-AST Vern Pankonin, NSF-AST Maria Womack, NSF-AST Ed Ajhar, NSF-AST Dan Evans, NSF-AST	Richard Barvainis, NSF-AST Ilana Harrus, NASA J.D. Harrington, NASA Joan Centrella, NASA Glen Crawford, DOE
Others:	Heidi Hammel, AURA Miriam Quintal, Lewis-Burke Michael Bagley, Bagley Associates	

MEETING CONVENED 1:00 PM EDT, 25 September 2012

The purpose of this meeting was for NSF-AST to brief the AAAC on the recommendations of the Portfolio Review.

James Ulvestad gave the briefing in three parts. He discussed some of the reasons for conducting the Portfolio Review (PR), one being that future budgets would not be sufficient to meet the aspirations and desires of the astronomical community for new instrumentation and programs; the other being that the National Academy of Sciences in their astronomy and astrophysics decadal survey report (*New Worlds, New Horizons* = NWNH) stated that if the budget was truly flat and there was no possibility of implementing any of the recommendations of the survey then a second review of the AST portfolio should be done. The NAS survey assumed a budget for AST that would rise 4% in purchasing power through the decade. Such reviews should also be carried out periodically for responsible stewardship of the AST portfolio.

One committee member asked Ulvestad, How do you define purchasing power? Ulvestad replied that the PR Committee settled on approximately 2.5% annual inflation after 2012. One could argue about the basis of that number but the charge to the committee was to give AST notional budgets not details. An additional question about guidance for decommissioning costs prompted an answer from Ulvestad. The PR Committee was told to stay away from that issue but AST did tell them that if they were recommending closure one had to anticipate that it took at least a couple of years of operations money. That's one reason why the committee adopted 2017 as a fiducial date.

One member asked about input from the national observatories, noting that the NRAO response document from 9/23 suggested they had new information not available to committee. Did they not provide this? Ulvestad answered that the facilities were asked in November 2011, with a

deadline in January 2012, for updated long-range plans and their vision of the future. These documents were not made public. The facilities had 2 months to prepare their input. An AAAC committee member asked whether there was sufficient expertise on the PR committee. Ulvestad replied that there was an effort to have sufficient expertise, including users of all of AST facilities. It was a difficult assessment to say how much was "enough". AST specifically advised committee members that they were not on the committee to represent a constituency, but to represent the community as a whole.

Ulvestad reviewed the recommendations of the PR Committee. At either assumed budget level, the current facility portion of the portfolio remained the same. At the lower level, the facilities/grants/mid-scale programs are all at ~75% of FY10-12 level (i.e., maintain present balance). At the higher level, funds are restored to the grants and midscale programs, investing in more new NWNH-recommended facilities later. The dedicated programs such as the University Radio Observatories and optical instrumentation are merged into a midscale innovations program. For the Facilities, the PR Committee recommended that AST fund:

- Priority 1: ALMA, ATST, VLA, LSST (operations start in 2020), CTIO, Gemini-S, Dunn Solar Telescope (until ~2017)
- Priority 2 (Keep now, possibly revisit later): Arecibo, SOAR, Solar synoptic, Gemini-N
- Priority 3 (Divest expeditiously): McMath-Pierce Solar Telescope, federal (NOAO) telescopes on Kitt Peak, Green Bank Telescope (NRAO), Very Long Baseline Array (NRAO)

A question was asked about across the board cuts. Ulvestad indicated that the PR Committee did not recommend across the board cuts. The recommended portfolio was not a contraction of all telescopes; it was divesting some facilities and keeping others at or near a healthy state. For the grants it was not a close-your-doors scenario. Success rates for types of midscale programs that previously had a guaranteed funding line (e.g., University Radio Observatories) would go down. A follow-up question was "Is divestment of optical and radio facilities in the northern hemisphere philosophically and demographically palatable?" Ulvestad replied that it was true that primary targets for divestment are in the north but the PR Committee's view was that science emphasis will shift to the south because of ALMA and LSST; hence optical telescopes that are best placed to follow up or complement ALMA and LSST were judged to be of higher science benefit. An additional question, "Does this hand back to the private observatories something that has been a community enterprise for the last several decades?" Ulvestad replied that the PR Committee indicated in the report that they hoped nights would be returned to the community through midscale competition.

Ulvestad discussed AST's response to the report recommendations. NSF's response document was issued on August 31. NSF must decide on the nature of divestments near the end of CY 2013 in order to realize significant savings by FY 2017. No decisions have been made by NSF and discussions within NSF will lead to the President's FY14 budget request, which will then be subject to action by Congress. Divesting a telescope does not necessarily imply closing a site, but the principle of divestment in a responsible manner will be emphasized in the process. These decisions have an impact on the management competitions that will be taking place over the next two years. AST agreed with the Committee assessment that failure to act on their recommendations would reduce the grants program four-fold in Scenario B and the resulting grants success rate would be in 3%-4% range. This success rate would essentially end NSF research funding of the U.S. astronomy community and the PR Committee found this risk unacceptable.

An AAAC member asked whether AST is considering the impact on the user communities. Ulvestad replied that AST is looking in Chapter 6 and Chapter 10 for the committee's views on the health of the profession. Some rough demographic figures are that there are roughly 1,000 users of each of the national facilities. In FY12 AST received 750 grant proposals with 110 or so of them funded. A committee member noted that there is concern about mapping of users of today onto facilities, and users of tomorrow onto capabilities. Ulvestad observed that new surveys are new ways of doing astronomy that involve lots of astronomers using data sets rather than writing observing proposals. This shift has happened in particle physics, and happens when facilities become so expensive that you need new ways of using them. Another question asked was "How big is the "window of realization"? Ulvestad replied that the longer one takes the more you get into the status quo scenario which has its own dangers. NSF cannot waste 6 months.

In other business, the AAAC Chair indicated that the committee needed to start planning the agenda for the November meeting. It was suggested that it would be good to have a list of dangling alliances; e.g., the slating of the Mayall telescope for BigBOSS, as possible agenda items. Ulvestad noted that what NSF can say about such items would be limited by the budget embargo but he was willing to discuss the issues.

MEETING ADJOURNED AT 4:00 PM EDT, 11 MAY 2012