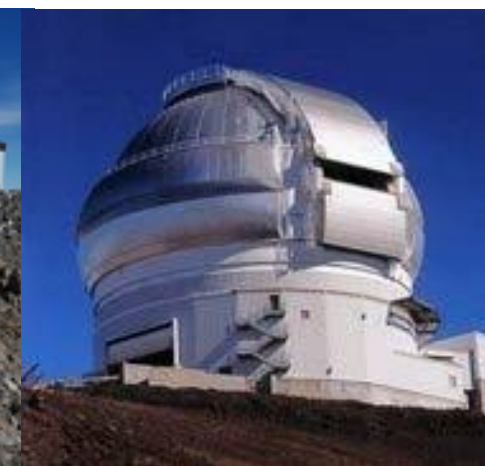




# NSF/AST Responses to AAAC Recommendations in 2016-2017 Annual Report

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# Continue Inter-Agency Cooperation

- Recommendation: We recommend that DOE, NSF, and NASA continue their successful cooperation in Astronomy and Astrophysics.
- Response: NSF will continue cooperation and collaboration with NASA and DOE to exploit synergies and shared scientific priorities in Astronomy and Astrophysics.
- Current examples for NASA include co-sponsorship of the Decadal Survey, joint NSF-NASA FACA review panels (e.g. your committee), cooperation on space weather and solar research, joint ground-space observations of astrophysical objects, collaboration on the exoplanet research program (WIYN 3.5m telescope), cooperation on Near Earth Object detection and characterization (Arecibo, Green Bank, and future LSST Observatories), and semi-annual joint NSF-NASA staff meetings.
- Current examples for DOE include the Dark Energy Camera, Dark Energy Survey Instrument (DESI), LSST, and the CMB Task Force.



## Plan for coordination of LSST, WFIRST, and Euclid

- Recommendation: We recommend that the three agencies begin to develop a plan for including multiple stakeholders to consider the costs and benefits of coordination of LSST, WFIRST, and Euclid on the broad science areas these missions will advance.
- Response: NASA, NSF, and DOE have formed a Tri-Agency Group to discuss the possible implementation – and cost – of joint pixel analysis for data from LSST, Euclid, and WFIRST. (Direct quote from P. Hertz presentation.) NSF's support through carefully defined use of LSST construction funding is combined with that from the other agencies to develop a set of requirements, as well as a cost proposal, for implementing joint pixel analysis. The community-based Dark Energy Science Collaboration is a strong participant in that activity. Jason Rhodes will discuss on Day 2.



## Grow MSIP within constraints

- Recommendation: The AAAC continues to support NSF/AST's efforts to grow and develop the MSIP program, provided this is done while maintaining a balanced portfolio of investments by NSF/AST.
- Response: NSF/AST established the MSIP program to create opportunities for mid-scale projects otherwise not commensurate with existing programs. In the context of the reduced agency budget request, the recommendation for balance was taken very seriously; to maintain the quality of center operations and allow for the possibility of some funds above the request level from the Congressional appropriations process, the MSIP request was reduced for 2018. The solicitation may be released only in alternate years.



Proceed with divestment, engaging operations partners

- Recommendation: The AAAC concurs with *NWNH-AMA* recommendation that the NSF facility divestment process be moved forward and that the agencies work to ensure that individual investigators are funded, in order to capitalize on and leverage the full capabilities of the large projects that represent such important and substantial investments by the agencies.
- Recommendation: The AAAC supports the NSF approach of working to divest facilities to partners or non-federal organizations that will continue to operate them as scientific facilities.
- Response: Next slide



# Divestment Status – AST Portfolio Review

## Portfolio Review Received in August 2012

### Partnerships Finalized

- 2.1m NOAO telescope (Kitt Peak): Caltech led consortium, 2016-2018
- 4m NOAO Mayall telescope (Kitt Peak): DOE-funded dark-energy project, 2019-2023
- NSF/NOAO share 3.5m of WIYN telescope (Kitt Peak): joint NASA-NSF exoplanet project, 2019-2025
- LBO/VLBA: Separation from NRAO in FY2017, MOA with U.S. Navy, 50% of operations costs through 2021
  - GONG (Solar monitoring telescopes): Interagency Agreement with NOAA through 2021

### Partnerships in Progress

- Green Bank Observatory: Separation from NRAO in FY 2017 – current 20% operational collaboration, expression of interest from DoD
  - Potential university consortium assuming operation of the Sacramento Peak Solar Observatory (about 50%)
- One expression of interest for McMath-Pierce solar telescope on Kitt Peak being pursued.

### Environmental Review Process

- Arecibo Observatory: Final Environmental Impact Statement (EIS) published Aug 2017
  - Green Bank Observatory: Scoping meetings held, Draft EIS anticipated Fall 2017
  - Sacramento Peak Observatory: Scoping meetings held, Draft EIS anticipated Fall 2017



## Implement the *OIR System Report*

- Recommendation: The AAAC supports efforts by AURA, NOAO, LSST, and NSF to implement the recommendations of the *OIR System Report*. We acknowledge that implementation of these recommendations will be constrained by the need to maintain a balanced investment across the portfolio of NSF/AST.
- Response: In March 2016, AST asked NOAO to either plan for or carry out the tasks in the recommendations that are relevant to NOAO. Most of the tasks require resources above the NOAO base budget, and therefore require supplemental funding. In July 2016, NOAO submitted to NSF a plan to accomplish the tasks with an estimate of the resources required. The plan noted that a total of ~\$5 million over 3-4 years above the NOAO base would be needed. The plan is being funded in supplement installments as funding is available.



## Coordinate efforts on spectrum management

- Recommendation: The agencies should consider coordinating their separate efforts on advising on the use and protection of the electromagnetic spectrum to better protect access to the electromagnetic spectrum for astronomical and astrophysical research.
- AST has brought on two new program officers, Jonathan Williams and Ashley Zauderer, to concentrate on spectrum management. They will spearhead the coordination efforts.





## Move forward with preparation for the Decadal Survey

- Recommendation: The AAAC supports the continued exploration, with the support of the agencies, into future directions and experiments, missions, and programs to be considered for support by the 2020 decadal survey.
- Recommendation: The AAAC recommends that the agencies work with the National Academies to ensure a timely beginning to the next decadal survey, along with updates to the structure as recommended by *NWNH/AMA*.
- Response: NRAO/AUI has enabled the RSM community to define their scientific priorities and develop a concept for a next generation VLA in a series of Kavli-sponsored workshops. NOAO/AURA is collating white paper input on OIR priorities and concepts for new facilities, and will be hosting a follow-up community workshop next February. NSF will continue to work with NASA and DOE to engage the CAA in the timely initiation of the Decadal Survey.



## Maintain balance and a viable grants program

- Recommendation: In formulating their programs for FY 2018, NSF, NASA and DOE should strive to maintain viable research grant programs and preserve the highest priority decadal survey recommended programs.
- Response: The reduced budget envelope for 2018 necessitated difficult choices to maintain a resilient program. The significant cut to MSIP was a conscious choice to provide some shielding for the grants program. Should the final appropriation exceed the request, the high priority for restoration in the AST budget is the research grants.