

NSF Division of Astronomical Sciences

Portfolio Review

Charge to the Committee

Context

This review, a recommendation of the Astro2010 astronomy and astrophysics Decadal Survey, is motivated by the aspirations and priorities of the astronomical community, as evidenced in Astro2010, and by the current challenging outlook for the Federal budget.

The review is designed to examine the balance across the entire portfolio of activities supported by NSF's Division of Astronomical Sciences (AST). (The 2005–06 AST Senior Review, in contrast, was confined to facilities.) The primary goal of this review, and of any resulting adjustments of the AST portfolio, is to maximize progress on the compelling science described in Chapter 2 of the Astro2010 report by balancing the recommendations for new facilities, instrumentation and programmatic enhancements with the capabilities enabled by existing facilities, grants programs, and other supported activities.

The following boundary conditions should be adopted for the review:

- All of the AST-funded facilities, grants programs, and other activities should be considered together with the Astro2010 recommendations. The review should be forward-looking and focus on the potential of all facilities, programs, and activities for delivering the desired capabilities and not on past performance.
- The review should assume several budget scenarios, to be provided by AST to encompass the period through 2025, and consider the costs of (i) delivering the existing capabilities and programs, as well as of (ii) new facilities as determined by the Astro2010 estimating processes.
- The review will not reopen debate on the recommendations and science program of Astro2010.
- The Committee's deliberations should take into consideration the national and international astronomy landscape and the consequences of its recommendations for domestic and international partnerships as well as for the state of the profession.

The Charge

The Committee is asked to construct its recommendations in a two-stage process:

1. Recommend the *critical capabilities* needed over the period from 2015 to 2025 that would enable progress on the science program articulated in Chapter 2 of Astro2010. These recommendations should encompass not only observational capabilities, but also

theoretical, computational, and laboratory capabilities, as well as capabilities in research support, workforce, and education.

2. Recommend the *balance of investments* in new and in existing, but evolved, facilities, grants programs, and other activities that would deliver the needed capabilities within the constraints of each of the provided budgetary scenarios. These recommendations may include closure or divestment of facilities as well as termination of programs and other activities.

The elements of the recommended portfolio should be prioritized in sufficient detail to enable AST to make subsequent adjustments in response to variations in Federal and non-Federal funding.

The Committee should consider the effects of its recommendations on the future landscape of U.S. ground-based astronomy and theoretical and laboratory astrophysics. The recommended portfolio and any changes should be viable and lead to a vigorous and sustainable future. In particular, the Committee is asked to examine how the recommended portfolio supports and develops a workforce with the requisite abilities and diversity to exploit the recommended research and education investments.

The Committee will be a sub-committee of the Directorate for Mathematical and Physical Sciences Advisory Committee (MPSAC). The Committee is asked to provide its recommendations by 31 March 2012 for presentation to the MPSAC, so NSF can consider them in formulating the FY 2014 Budget Request.