

**Division of Astronomical Sciences**  
**Senior Review**  
**Charge to the Committee**

**Background**

This review, a recommendation of the most recent Decade Survey<sup>1</sup>, is motivated at this particular time by a confluence of the current flat outlook for the Federal budget, the increased cost (relative to previous programs) of the ambitions of the astronomical community as evidenced in the Decade Survey and other reports such as “Connecting Quarks with the Cosmos,” and by the growth in the Division of Astronomical Sciences (AST) budget over the past five years, which provides ~\$60M a year more to spend on astronomical research than was available in FY2000.

This review is designed to examine the balance of the (AST) investments in the various facilities and selected other activities that we support. The primary goal of the review and the resultant adjustment of balance is to enable progress on the recommendations of the Decade Survey, including such things as operations funds for ALMA, and other priorities such as those recommended in “Connecting Quarks with the Cosmos”. At the same time AST seeks to preserve, indeed grow, a healthy core program of astronomical research. Possible reinvestment of some of the Division’s resources in the highest priority components of the existing facilities and programs is therefore an important consideration.

The following boundary conditions should be adopted for the review:

- The review will assume that the AST budget will grow no faster than inflationary increases for the remainder of the decade
- AST will not use resources from the unrestricted grants programs (AAG) to address the challenges of facility operations or the design and development costs for new facilities of the scale of LSST, GSMT, SKA, etc.
- The Committee will not revisit the priorities and recommendations of community reports such as the Decade Survey; the committee will not consider proposals for future individual projects nor will it determine how funds are to be distributed among individual ongoing development efforts, but rather identify resources that can be distributed to these future efforts through AST’s normal review and priority setting processes.
- The adjustments in balance that may result must be realistic and realizable; the committee should recognize that savings will not be immediate and additional costs may be associated with reprogramming.

- The committee’s deliberations should take into consideration systemic issues such as U.S. scientific leadership within a global context, the ability to complement observations at other wavelengths, filling critical niches in the overall U.S. system, and the needs for training and technical innovation.
- Recommendations should be based on well-understood criteria established by the committee and articulated to the community.
- There should be ample opportunity for community input.

### **The Charge**

The committee is asked to examine the impact and the gains that would result by redistributing ~\$30M of annual spending from Division funds. These funds would be obtained by selective reductions in the operations of existing facilities and instrumentation development programs, possibly in combination with opportunities to deliver scientific knowledge at reduced cost to NSF or increased efficiency through new operating modes. Near-term needs for new investment lead us to conclude that we must try to generate the \$30M in annual redistributed funding by the end of FY2011. The \$30M (annual) would be used to bolster the highest priority components of existing facilities, to begin to cover ALMA operations costs, and as a source of support for implementation of Decade Survey recommendations.

In short, the committee is asked to trade progress on new and enhanced programs against the preservation of existing capability by proposing changes that are viable and that lead to a vital and sustainable future.

The committee is asked to provide its recommendations by 31 March 2006, if possible, so the report can be presented to the MPS AC at its April meeting and considered in formulating the FY2008 budget.

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1) “ Cross disciplinary competitive reviews should be held about every 5 years for all NSF astronomy facilities. In these reviews, it should be standard policy to set priorities and consider possible closure or privatization.”