



National Science Foundation  
WHERE DISCOVERIES BEGIN

SEARCH



FUNDING AWARDS DISCOVERIES NEWS PUBLICATIONS STATISTICS ABOUT NSF FASTLANE

## Awards



[Search Awards](#)

[Recent Awards](#)

[Presidential and Honorary Awards](#)

[About Awards](#)

### How to Manage Your Award

[Grant Policy Manual](#)

[Grant General Conditions](#)

[Cooperative Agreement Conditions](#)

[Special Conditions](#)

[Federal Demonstration Partnership](#)

[Policy Office Website](#)



### Award Abstract #0443999

## Enabling a Giant Segmented Mirror Telescope for the United States Astronomical Community

**NSF Org:** [AST](#)  
[Division of Astronomical Sciences](#)

**Initial Amendment Date:** September 27, 2005

**Latest Amendment Date:** May 9, 2011

**Award Number:** 0443999

**Award Instrument:** Cooperative Agreement

**Program Manager:** Jeffrey R. Pier  
AST Division of Astronomical Sciences  
MPS Directorate for Mathematical & Physical Sciences

**Start Date:** September 1, 2005

**Expires:** June 30, 2012 (Estimated)

**Awarded Amount to Date:** \$18,000,000.00

**Investigator(s):** William Smith nsfnotifications@aura-astronomy.org (Principal Investigator)  
David R. Silva (Co-Principal Investigator)

**Sponsor:** Association of Universities for Research in Astronomy, Inc.  
1212 New York Avenue, N.W.,  
Washington, DC 20005-3929 (202)483-2101

**NSF Program(s):** MID-SCALE INSTRUMENTATION

**Program Reference Code(s):** 0000, OTHR

**Program Element Code(s):** 1257

### ABSTRACT

AST 044399

ABSTRACT

The design and development of a Giant Segmented Mirror Telescope is the highest ranked ground-based initiative in the 2000 astronomy and astrophysics Decadal Survey. The GSMT is envisioned to be a public/private partnership requiring approximately equal contributions from both funding sources for design, construction and operation. Funds from this award will further the GSMT effort in the following areas:

(1) The design and development phase for a 30-meter diameter segmented-mirror,

optical/infrared telescope, the Thirty Meter Telescope (TMT);

(2) The design and development phase another alternative extremely large telescope (ELT) concept, such as the 22-meter Giant Magellan Telescope (GMT), to the point where its performance, cost and risk can be assessed;

(3) Technology development common to both ELT concepts;

(4) Conceptual designs for two instruments: one for TMT and one for the alternative ELT concept;

(5) Support for an education and public outreach program; and

(6) Support for a Theory Challenge program aimed at engaging theorists in shaping the design of ELTs.

The first of these investments will leverage \$35M in non-federal funding (donated by the Moore Foundation to the California Institute of Technology and the University of California), plus funds requested by the Association of Canadian Universities for Research in Astronomy from the Canadian Foundation for Innovation. This investment will enable the Association of Universities for Research in Astronomy to participate on behalf of the U.S. community in a partnership to advance the design to a fully-costed preliminary design by 2008.

The second major investment will support a design study for an alternate technical approach that will be funded as a competitive subaward. At this time, the GMT is the only competitive alternative design concept.

The power of Extremely Large Telescopes to address questions that excite the imagination of the public, as well as students and teachers, provides a natural focus for a vigorous program of science education and public outreach activities. Activities to be supported by this award emphasize national education needs in science, technology, engineering and math (STEM), and build on extant activities within AURA and the partnering institutions in the TMT project.

Please report errors in award information by writing to: [awardsearch@nsf.gov](mailto:awardsearch@nsf.gov).



[FUNDING](#)   [AWARDS](#)   [DISCOVERIES](#)   [NEWS](#)   [PUBLICATIONS](#)   [STATISTICS](#)   [ABOUT NSF](#)   [FASTLANE](#)

[Research.gov](#) | [USA.gov](#) | [National Science Board](#) | [Recovery Act](#) | [Budget and Performance](#) | [Annual Financial Report](#)  
[Web Policies and Important Links](#) | [Privacy](#) | [FOIA](#) | [NO FEAR Act](#) | [Inspector General](#) | [Webmaster Contact](#) | [Site Map](#)



The National Science Foundation, 4201 Wilson Boulevard, Arlington, Virginia 22230, USA  
Tel: (703) 292-5111, FIRS: (800) 877-8339 | TDD: (800) 281-8749

