



NATIONAL OPTICAL ASTRONOMY OBSERVATORY

SYSTEM PROJECT OFFICE

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**TELESCOPE SYSTEM
INSTRUMENTATION PROGRAM (TSIP)**

**FY 2004 PROGRAM ANNOUNCEMENT
AND PROPOSAL SOLICITATION**

Issued October 30, 2003

PROPOSAL DEADLINES

December 1, 2003**Letters of Intent to Propose** (required)
are due by December 1, 2003.

February 27, 2004**Full proposals** are due by February 27,
2004

The Telescope System Instrumentation Program is administered on behalf of the National Science Foundation by the NOAO System Project Office. NOAO is operated by the Association of Universities for Research in Astronomy under a cooperative agreement with the National Science Foundation

TELESCOPE SYSTEM INSTRUMENTATION PROGRAM
FY 04 PROPOSAL SOLICITATION



TABLE OF CONTENTS

OVERVIEW OF PROGRAM 1

- Two Categories of TSIP Proposals, 1
- Eligibility Information, 3
- Estimated Annual Funding,
- Administration of Awards, 4
- Community Access to Telescopes of Successful Proposers, 4

PROPOSAL PREPARATION AND SUBMISSION REQUIREMENTS 5

- Letters of Intent (Required), 5
 - Content of Letters of Intent, 5
- Full Proposals, 6
 - Required Sections and Page Limits, 6
 - Cover page, 6
 - Science, 6
 - Technical, 6
 - Management, 6
 - Budget and Budget Narrative, 7
 - Community Access, 7
 - Formatting Guidelines, 8
 - How to Contact TSIP, 8

PROPOSAL REVIEW 9

- Review Criteria, 9

AWARD ADMINISTRATION AND PROGRAM OVERSIGHT

10

- NOAO SYSTEM PROJECT OFFICE OVERSIGHT, 10
 - Approval of Management Plan, 10
 - Regular periodic reports, 10
 - Quarterly reviews for instrumentation projects, 10
 - Annual status reports, 10
 - Formal decision following CDR, 11
 - Review of progress on improvement proposals, 11

OVERVIEW OF TSIP PROGRAM

The highest priority “moderate initiative” for ground-based O/IR astronomy in the current decade, as recommended by the National Research Council’s Astronomy and Astrophysics Survey Committee (*Astronomy and Astrophysics in the New Millennium*, 2001, p. 107) was the creation of a Telescope System Instrumentation Program (TSIP). The report of the AASC Panel on Optical and Infrared Astronomy from the Ground envisioned TSIP as a \$5 mil. per year instrumentation grants program that would have several positive effects on the emerging paradigm of an “integrated observing system,” a new perspective on the public and private facilities used for ground-based O/IR astronomy, in which complementarity and cooperation provide motivation for strategic decisions. The O/IR panel report describes TSIP as having three goals:

1. “... Guid[ing] the evolution of the telescope system so that it becomes more powerful and more diverse; it would do this by, for example, favoring instruments with unique capabilities and those that would be particularly effective in reaching ... scientific goals...”
2. “Achieving greater public access to these facilities”
3. “Encouraging and leveraging the contribution of institutions that contribute nonfederal funds to the U.S. astronomy enterprise”

Formally established by the National Science Foundation in 2002, the TSIP program is designed to accomplish these goals by funding the development of instruments or other improvements for the telescopes of the private observatories, in exchange for which telescope time on those facilities is made available to the community.

Funding for TSIP is provided by the NSF Division of Astronomical Sciences. These funds pass to successful TSIP proposers through sub-awards that are first approved by the NSF, then issued and administered by the Association of Universities for Research in Astronomy (AURA) through the National Optical Astronomy Observatory (NOAO). NOAO is responsible for project oversight of successful proposals so as to assure cost and schedule performance for these sub-awards.

In its first award year (FY02), TSIP funded two of the proposals submitted, one of them for the fabrication of OSIRIS, an integral field IR spectrograph for the Keck telescopes, and one for preliminary design work on KIRMOS, a multi-object spectrograph for the Keck telescopes. These two sub-awards contributed \$3.89 mil. to the creation of powerful new capabilities for the O/IR system of telescopes and also provided 41 nights of time on the Keck telescopes to the community.

In its second year (FY03), TSIP again funded two new instrumentation projects, one of them for the continuation of design work on KIRMOS, and the other to design and fabricate MMIRS, a “fast-track” multi-object IR spectrograph for the MMT and Magellan telescopes. As a result of last year’s funding, 12 additional Keck nights and 27 nights on each of the MMT and Magellan will be provided to the community.

TWO CATEGORIES OF TSIP PROPOSAL

There are two categories of TSIP proposal: instrumentation proposals and improvement proposals.

INSTRUMENTATION PROPOSALS are proposals for the design and construction of new, facility-class instruments for existing or pending telescopes, i.e., optical or infrared instrumentation of any kind (including adaptive optics systems) for any telescope now in operation or under construction.

Such proposals should include plans for two clearly distinct phases: a definition and design phase (Phase AB), and a construction and commissioning phase (Phase CD). The design phase concludes with a Critical Design Review (CDR) that verifies the cost and schedule for the construction phase.

Instrumentation proposals may request funding for up to five years of effort, including both phases AB and CD. All funded projects will be evaluated at the time of Critical Design Review (CDR). If the CDR leads to significant changes in cost and schedule compared to the original proposal, the decision to renew the proposal for continuing effort through the construction phase will be made based on peer-reviewed re-evaluation.

Proposals for instrumentation construction should provide community observing time equivalent in value to **50%** of the NSF-supplied cost of the proposed new instrumentation.

➤ **NEW IN FY04 PROGRAM**

In the FY04 TSIP program, instrumentation proposals will be permitted for telescopes of any aperture. Proposers for instruments on telescopes smaller than 6-m aperture should bear in mind that TSIP strives to significantly increase the power of the U.S. telescope system. Successful proposals for instruments on smaller telescopes will have demonstrated the potential to significantly enhance the scientific capabilities of that system. In FY04, proposals for instruments on smaller and larger telescopes will be ranked independently, though the award decision will depend on a merging of these two ranked lists.

IMPROVEMENT PROPOSALS are proposals for improvements to existing large telescopes other than new instrumentation. Any improvement that enhances scientific utility or efficiency other than the construction of a new instrument may be proposed for any telescope larger than 6-meter aperture. This includes upgrades to existing instruments, improvements to telescope image quality or operational efficiency, improvements to data handling and distribution infrastructure, improvements in support or services for visiting users of the telescopes, and any other improvements that can increase the telescope capabilities.

Improvement proposals may request funding for up to five years of effort. Funding will be provided in annual increments, contingent on satisfactory annual progress as evaluated by an annual progress review conducted by NOAO and reported to NSF.

Proposals for infrastructure improvement should provide community observing time equivalent in value to **100%** of the NSF-supplied cost of the improvements.

Both categories of proposals must contain a description of the amount, scheduling, and nature of observing time to be made available to the U.S. community as a consequence of the requested funding. This observing time will be allocated by NOAO through the same mechanisms of merit review of proposals used to allocate time on the NOAO telescopes. Instrumentation proposals will be considered based either upon current availability of observing time or upon anticipated availability of observing time at future dates. Improvement proposals will *only* be considered for telescopes already in operation as of the first incremental funding date so that observing time can be made available as soon as the proposed effort begins.

Instrumentation proposals must have clear staffing and budgeting profiles and schedules for development of the proposed instrument. A management plan with clear milestones must be well defined. In particular, proposals should be clearly divided into a concept and design phase (Phase AB), and a development and construction phase (Phase CD). Staffing and budgeting profiles for the two phases should be distinct. Proposals should contain full costs for both phases, and sources of uncertainty or needs for contingency should be clearly explained. Proposals should also contain a science justification explaining how the proposed instrument fits into the overall context of scientific capability needed by the entire U.S. astronomical community. Proposals may reference scientific priorities and needs as stated in various community studies or workshops. See, for example, The First Workshop on the Ground-Based O/IR System (October 2000) http://www.noao.edu/gateway/oir_workshop/report.pdf

Improvement proposals must show clearly what improvements in capabilities will be a consequence of the requested funding. A management plan with clear milestones against which progress can be measured must be well defined. Requests for funding that are simply substitutes for existing operations funds for telescopes are not appropriate for TSIP funding.

For both categories of proposals, the value of community observing time to be allocated as a consequence of the requested funding is to be described and justified in the proposal. Determination and justification of the value of observing time is the sole responsibility of the proposers. Further details on the costing of telescope time are given below.

ELIGIBILITY INFORMATION

The TSIP program is open to all U.S. institutions having a mechanism for providing observing time on a telescope through the NOAO time allocation process. This includes U.S. institutions that operate such telescopes, as well as U.S. institutions that can provide assured access through negotiated arrangements for observing time on U.S. or non-U.S. optical/IR telescopes.

ESTIMATED FUNDING LEVEL

It is anticipated that \$4 million will be available in FY 2004 for the TSIP program. These funds may eventually increase to \$5 million per year.

ADMINISTRATION OF AWARDS

Awards will be fixed price grants administered to institutions as sub-awards from the NOAO Contracts Office and divided into multiple stages. New instrument development sub-awards will have a minimum of two stages (AB and CD); these may be further subdivided during post-award negotiations. Payment will be made annually in advance for Phase AB. The funding profile for Phase CD will be negotiated at the time of Critical Design Review. Infrastructure improvement proposals will be funded annually, in advance, subject to satisfactory progress reviews.

COMMUNITY ACCESS TO TELESCOPES OF SUCCESSFUL PROPOSERS

Each proposal *must* include a commitment of observing time on the telescope for which the instrument or improvement has been proposed. For improvement proposals, the value of the time offered must be equal to 100% of the NSF-supplied funds. For new instrument proposals, the value must be equal to 50% of the NSF-awarded funds.

For all proposals, the value of community observing time is to be described by an explicit calculation in the proposal narrative. Determination and justification of the value of observing time is the sole responsibility of the proposers. Following the annual selection of TSIP awards, a description of the successful proposals and the costing of the observing time will be published on the NOAO System Web site: http://www.noao.edu/system/tsip/keck_cost.html This site currently presents the accepted calculation of the cost of a night on one of the W.M. Keck telescopes resulting from the FY 2002 proposal cycle and the cost per night for the MMT and Magellan telescopes resulting from the FY 2003 proposal cycle.

Proposers must specify in the proposal narrative any conditions they wish to impose on the community access they are offering. NOAO is willing to provide interface and support services for community access, and the details of such arrangements can be negotiated following the successful review of a TSIP proposal. *Note particularly that it is not necessary that access be granted as individual observing runs.* An alternate possibility is to undertake a large survey or surveys, defined—at least in part—through community input, from which the data would be made publicly available.

PROPOSAL PREPARATION AND SUBMISSION REQUIREMENTS

LETTERS OF INTENT TO PROPOSE (REQUIRED)

➤ The deadline for Letters of Intent is 5:00 P.M. (local time) December 1, 2003.

Letters of Intent for all TSIP proposals are *required*. Letters of Intent may be submitted in electronic version, paper copy, or both. Acceptable formats for the electronic versions are plain ASCII text, MS Word, Adobe PDF, or PostScript formats. Letters of Intent will be individually acknowledged within 48 hours of receipt. If submitted electronically, Letters of Intent should be sent to syspo@noao.edu. If submitted by mail, Letters of Intent should be sent to:

The System Project Office
National Optical Astronomy Observatory
P.O. Box 26732 – 950 N. Cherry Ave
Tucson, AZ 85726-6732
Tel: (520) 318-8000
Fax: (520) 318-8170

PURPOSE AND CONTENT OF LETTERS OF INTENT

The purpose of obtaining Letters of Intent is to assemble a peer review panel without conflicts of interest and with expertise appropriate to the anticipated proposals. Letters of Intent should include (a) designation of the proposal as either an instrument or improvement proposal, (b) names, institutions, and contact information of the PI and Co-I's, (c) general description of the instrument or improvement, (d) anticipated funding period in months, (e) anticipated cumulative funding proposed, (f) description of telescope facilities to which community access will be available, if proposal is successful.

Questions from proposers during the period preceding the due date for Letters of Intent may be sent to syspo@noao.edu. Collected questions and answers from proposers will be displayed on the System Office Web site: http://www.noao.edu/system/tsip/2002_faq.html Questions from previous TSIP proposers are archived on this Web site.

FULL PROPOSALS

➤ The deadline for full proposals is 5:00 P.M. (local time) February 27, 2004

All TSIP proposals must be submitted electronically as a *single* document file that includes all required sections. The electronic files should be mailed to syspo@noao.edu by 5:00 P.M. (proposer's local time) on the date due. Acceptable file formats for the electronic version are Adobe PDF or Postscript. The NSF-style budget pages, for which EXCEL templates will be provided to all proposers, should also be submitted as .pdf files, one page for each year of requested funding, plus a summary budget page showing cumulative funding requested (for multi-year proposals). Proposals will be individually acknowledged within 48 hours of receipt.

REQUIRED SECTIONS AND PAGE LIMITS FOR FULL PROPOSALS

➤ COVER PAGE

The Cover/Certification page should be included as the first page of each proposal. A sample Cover/Certification page is attached to this Proposal Solicitation. A WORD version of the Cover/Certification will be available on the TSIP Web site and from the System Project Office (syspo@noao.edu). Signed copies of this document must be received by mail (or by fax to 520-318-8170) by the System Project Office within five days of proposal submission.

➤ PROPOSAL NARRATIVE

The proposal narrative must contain five sections: (1) Science, (2) Technical, (3) Management, (4) Budget (including the NSF-style budget sheets mentioned below), and (5) Community Access. The length of the proposal narrative *without the budget section* should not exceed 30 pages. There are no page limitations on the Budget section. The entire proposal, including budget pages, must be submitted as a single .pdf or PostScript document.

(1) The **Science** section should describe the scientific capability that the proposed instrument or improvement provides or enables. *Proposers should specifically state how the proposed development will improve or enhance the ground-based O/IR system.* Text in this section may refer to scientific motivations for particular capabilities derived from community meetings or workshops (e.g., The First Workshop on the Ground-Based O/IR System; see http://www.noao.edu/gateway/oir_workshop/). If the narrative does not refer to community-based efforts to identify needed capabilities, it should make the scientific case that the capability to be developed is as desirable as those that have been prioritized through such efforts. Specific scientific goals for the instrument or improvement and/or generally described studies that could be undertaken with community time may be described.

(2) The **Technical** section should describe the technical approach that will be used in order to provide the proposed capability. The intent of this section is to convince the evaluation committee that the technical approach is viable and that the proposing team has the resources and the expertise to carry it out. This section should include an overview of the instrument or improvement, including optics, mechanical design, electronics, and software. It should present a discussion of the technical issues or concerns, and strategies for addressing them. It should also describe the flow down from scientific goals to functional performance requirements, and should provide evidence that the proposed instrument will satisfy these requirements.

(3) The **Management** section must describe the management approach to be used on the proposed project, including the following:

- Overall project structure and organization, including an organization chart
- Project risks and key challenges and strategies for addressing these
- Procedures and process to be used to manage the project, including:
 - Procedures to assign tasks and to control project personnel
 - Metrics to monitor and assess progress
 - Procedures and tools to plan and organize the project work
 - Plant and equipment
 - Personnel or subcontractors
 - Dependencies among aspects of development, design, or fabrication
 - Project management documentation that will be generated
- A Work Breakdown Structure (WBS) and schedule based on the WBS showing time line of major tasks, resource loading, task durations, and task costs built up to the overall project cost, including:
 - Dates of planned meetings and reviews and other critical milestones
 - Processes and procedures for quality assessment and control
 - Proposed mechanisms to facilitate NOAO oversight activities (See section on Award Administration and Program Oversight below.)

(4) The **Budget and Budget Narrative** section should present the total cost of the instrument or improvement, and an annual payment schedule or funding profile for the TSIP funds requested. The payment schedule should be justified on the basis of the Work Breakdown Structure and planned commitments for large capital items. The budget should explicitly identify payroll, benefits, non-payroll, and agency-agreed overhead costs as they would be determined in a proposal to NSF. For instrument proposals, summary budgets should be given separately for phase AB and phase CD. Annual and summary budgets (for multi-year proposals) must be included in all proposals using the formats required for NSF proposals. A sample of the NSF-style budget form is attached to this Proposal Solicitation; EXCEL spreadsheet templates for these budgets will be provided to each proposer submitting a Letter of Intent.

(5) The **Community Access** section must detail the manner in which telescope time is to be made available, including the total number of nights and their distribution over time, constraints on their use, the facilities to be made available, and so forth.

This section must include an *explicit calculation of the value of observing time used to determine the nights to be made available to the community* if the proposal is funded. This value should be calculated using such items as total construction cost, together with annual costs for operations and instruments. To provide accountability to the community, the explicit calculation and explanation of the value of nights provided for successful TSIP proposals will be published on the System web site: <http://www.noao.edu/system/tsip/>

In addition, the Community Access section should include a comprehensive description of instruments available to visitors, services for visitors, data quality, data analysis capabilities, and any other factors that may affect the assessment of the value of observing time on a particular telescope. Proposals should state a clear schedule and any contingency planning for providing the allocated community observing time.

Questions that arise during the period following the due date for Letters of Intent may be sent to syspo@noao.edu. Submitted questions and answers will be posted to the Web site.

FORMATTING GUIDELINES FOR FULL PROPOSALS

- **Page Limits:** Excluding the Budget section, the proposal narrative should not exceed 30 pages. There is no limit on the number of pages for the Budget section.
- **Margins and Spacing:** Proposals should be single or double-spaced and formatted with margins of *at least* 1.5 inch (2.5 cm) at the top, bottom, right, and left sides of the page. Type size may not be smaller than 10 point, and tables and charts (especially Gantt charts) should be clear and easily legible in .pdf form. Proposers are urged to proofread the .pdf versions of their proposals before submission to check the legibility of tables, charts, and budget pages.
- **Budget Forms:** The standard NSF budget page (sample attached) is required. Each proposals must include a single budget page in this format for each year of support requested, as well as a cumulative budget page (for multi-year proposals only) showing the total funding requested over the full term of proposed TSIP support. Explicit definitions of the budget categories required in the NSF budget form can be found in the current NSF Grant Proposal Guide, section III.C.g: “Proposal Contents–Budget,” <http://www.nsf.gov/pubs/2003/nsf032/start.htm>

The budget forms must be submitted as *single-page* .pdf documents included in the main proposal file. Budgets should *not* be submitted as separate EXCEL files or as EXCEL worksheets/workbooks.

- **Size of Submitted Electronic Files.** Proposers are urged to compress images, pictures, and other graphics such that the size of the proposal file can be successful mailed electronically to the syspo@noao.edu address. All proposals submissions will be acknowledged by the System Project Office within 48 hours of receipt; if your submission is not acknowledged, it is very likely that the file was too big to be transmitted successfully.

QUESTIONS ABOUT PROPOSAL PREPARATION

Scientific and technical questions on proposal preparation should be documented and sent to the System Project Office at syspo@noao.edu. All questions will be answered promptly and those judged of interest to other proposers (excluding all proprietary or confidential information) will be published on the TSIP FAQ page: see for example: http://www.noao.edu/system/tsip/2002_faq.html Purely administrative questions can be addressed to the TSIP administrative manager at (520) 318-8124 (diane@noao.edu)

PROPOSAL REVIEW

REVIEW CRITERIA

Review and ranking of all TSIP proposals will be carried out by a peer review panel assembled by NOAO and approved by NSF. (NOAO staff are specifically excluded from the review panel.) This panel will meet in April 2004 to conduct their review. Comments will be returned to all proposers following the review panel meeting. The merit review for TSIP proposals will include the same criteria as for proposals submitted to NSF. These criteria are:

- **What is the intellectual merit of the proposed activity?**

How important is the proposed activity to advancing knowledge and understanding within its own field or across different fields? How well qualified is the proposer (individual or team) to conduct the project? (If appropriate, the reviewer will comment on the quality of prior work.) To what extent does the proposed activity suggest and explore creative and original concepts? How well conceived and organized is the proposed activity? Is there sufficient access to resources?

- **What are the broader impacts of the proposed activity?**

How well does the activity advance discovery and understanding while promoting teaching, training, and learning? How well does the proposed activity broaden the participation of underrepresented groups (e.g., gender, ethnicity, disability, geographic, etc.)? To what extent will it enhance the infrastructure for research and education, such as facilities, instrumentation, networks, and partnerships? Will the results be disseminated broadly to enhance scientific and technological understanding? What may be the benefits of the proposed activity to society?

Additional review criteria specific to TSIP proposals include the following:

- Overall cost-effectiveness of the proposed effort
- Overall value of the proposed amount of time to the U.S. astronomical community
- Degree to which proposed effort reflects general improvement in the U.S. ground-based O/IR system. The context for judging such improvement rests on community strategic planning activities, but includes consideration of both long-term and short-term returns and of priorities not addressed by previous cycles of TSIP.
- Overall quality of the management and technical plans for accomplishing the effort
- Broader impacts of the proposed effort on, for example, the improvement of infrastructure for education through involvement of students in the proposed efforts, or the improvement of research infrastructure through the training of instrumentalists

Based on the review panel rankings and available funding, NOAO will request NSF approval of sub-awards to fund successful proposals.

AWARD ADMINISTRATION AND PROGRAM OVERSIGHT

NOAO SYSTEM PROJECT OFFICE OVERSIGHT

Following NSF approval of the sub-awards, the NOAO Contracts office will negotiate award contracts with the selected proposers. These contracts will include the following elements:

- Description of instrumental capability or improvement to be provided
- Timeline, including milestones and payments
- Telescope time to be provided, together with contingencies and limitations
- Management plan
- Reporting and review schedule

NOAO's role is to provide oversight to the management of successful projects—not to impose additional obligations on procedures already in place. Listed below are examples of oversight activities in which NOAO technical management is typically involved. The actual reports and meetings agreed upon in each case will be negotiated specifically *to minimize* impact on the management approaches and mechanisms already established by the awardees.

➤ **APPROVAL OF MANAGEMENT PLAN**

The Technical Project Manager of the NOAO System Project Office will review and approve the management plan for the work. This is to ensure that sufficient project management is being provided by the proposing institution, that sufficient resources are identified to carry out the work, and that the budget and schedule are credible. An acceptable management plan is required before a sub-award can be recommended to NSF for approval.

➤ **REGULAR PERIODIC REPORTS**

During the design and/or construction of instruments, the instrument PI or Project Manager will be required to submit monthly reports to keep the System Project Office informed of progress and problems. These reports will summarize work completed, equipment or parts purchased, issues identified, and progress relative to the accepted management plan. All reports and review results will be publicly available on the NOAO System Web site.

➤ **QUARTERLY REVIEWS FOR INSTRUMENT PROJECTS**

It is expected that instrument development projects will have formal management and will include regular reviews, typically every three months. These will be attended by the System Project Office Technical Project Manager and any associated technical personnel who might provide needed expertise. The review documentation and response to the review will be publicly available.

➤ **ANNUAL STATUS REPORTS**

At each annual TSIP review meeting, the panel will review the ongoing TSIP-funded projects in addition to new proposals. These reports, which must be submitted to the System Project

Office by each proposal deadline, will describe work completed in the past year, work planned for the next year, progress relative to the original proposal, and problems encountered.

➤ **FORMAL DECISION FOLLOWING CDR**

Following the Critical Design Review at the end of Phase AB, a formal decision on continuation of TSIP funding through Phase CD is required. If the project is maintaining the cost and schedule in the original proposal within contingency, continuation will be automatic, subject to availability of NSF funds for TSIP. If there are projected cost overruns or schedule slips, the NOAO System Project Office will convene a panel to evaluate the project in context of other existing or proposed TSIP projects and determine if the project should be continued with a revised cost and schedule. A revised subaward would require NSF approval.

➤ **REVIEW OF PROGRESS ON IMPROVEMENT PROPOSALS**

It is expected that infrastructure improvement projects will also have regular reviews, typically every six months, similar in nature to the quarterly reviews for instrument projects. Review materials and reports will be publicly available. The generic criteria to be used in annual evaluation for continuation of funding are successful completion of the work according to the original plan, and the improvement in performance of the facility described in the technical proposal. If improvements are not being made as proposed, the NOAO System Project Office will convene a panel to evaluate the project in context of other existing or proposed TSIP projects and determine whether the project should be continued. A revised subaward would require NSF approval.



**TELESCOPE SYSTEM INSTRUMENTATION PROGRAM
PROPOSAL COVER AND CERTIFICATION SHEET**

Title of Proposed Project		
Requested Funding Amount (\$)	Proposed Duration (in Months)	Requested Starting Date
Name of Principal Investigator/Project Director		PI/PD Electronic Mail Address
PI/PD Institution		PI/PD Telephone Number
Address of Awardee Institution/Organization		
Signature of Principal Investigator		Date

Name of Co-Principal Investigator/Project Director		Co-PI/PD Electronic Mail Address
Co-PI/PD Institution		Co-PI/PD Telephone Number
Signature of Co-PI/PD		Date

Certification for Authorized Institutional Representative

By signing this certification and submitting this proposal, the authorized official of the applicant institution is: (1) certifying that statements made herein are true and complete to the best of his/her knowledge; and (2) agreeing to accept the obligation to comply with AURA award terms and conditions if an award is made as a result of this proposal application. Further, the applicant is hereby providing certification regarding debarment and suspension and lobbying activities, as set forth in the National Science Foundation Grant Proposal Guide (GPG). Willful provision of false information in this proposal application and its supporting documents, or in reports required under an ensuing award is a criminal offense (U.S. code, Title 18, Section 1001).

In addition, if the applicant institution employs more than fifty persons, the authorized official of the applicant institution is certifying that the institution has implemented a written and enforced conflict of interest policy that is consistent with National Science Foundation Grant Policy Manual Section 510; that to the best of his/her knowledge, all financial disclosures required by that conflict of interest policy have been made; and that all identified conflicts of interest will have been satisfactorily managed, reduced or eliminated prior to the institution's expenditure of any funds under the award, in accordance with the institution's conflict of interest policy. Conflicts which cannot be satisfactorily managed, reduced or eliminated must be disclosed to AURA.

Name/Title of Authorized Institutional Representative	Signature	Date
Telephone Number	Electronic Mail Address	Fax Number
Name and Address of Authorizing Institution		

***A .pdf version of this Cover Sheet must be attached as the first page of your electronic proposal.
A signed hard copy of this document should be mailed or faxed within five days after submission to:***

The TSIP Program at NOAO
c/o National Optical Astronomy Observatory
POB 26732 – 950 N. Cherry Ave.
Tucson, AZ 85726-6732
Fax (520) 318-8170



TSIP BUDGET – YEAR 1 of _____

FOR NOAO USE ONLY		
PROPOSAL NO.	DURATION (MONTHS)	
	Proposed	Granted
AWARD NO.		

ORGANIZATION NAME				PROPOSAL NO.		DURATION (MONTHS)		
PRINCIPAL INVESTIGATOR/PROJECT DIRECTOR				AWARD NO.		Proposed	Granted	
A. SENIOR PERSONNEL: PI/PI, Co-PIs, Faculty and Other Senior Associates List each separately with name and title. (A.7. Show number in brackets)				NOAO-Funded Person-months			Funds Requested By Proposer	Funds Granted (If Different)
				CAL	ACAD	SUMR		\$
1.								
2.								
3.								
4.								
5.								
6. () OTHERS (LIST INDIVIDUALLY ON BUDGET EXPLANATION PAGE)								
7. () TOTAL SENIOR PERSONNEL (1-6)								
B. OTHER PERSONNEL (SHOW NUMBERS IN BRACKETS)								
1. () POSTDOCTORAL ASSOCIATES								
2. () OTHER PROFESSIONALS (TECHNICIAN, PROGRAMMER, ETC.)								
3. () GRADUATE STUDENTS								
4. () UNDERGRADUATE STUDENTS								
5. () SECRETARIAL - CLERICAL (IF CHARGED DIRECTLY)								
6. () OTHER								
TOTAL SALARIES AND WAGES (A + B)								
C. FRINGE BENEFITS (IF CHARGED AS DIRECT COSTS)								
TOTAL SALARIES, WAGES AND FRINGE BENEFITS (A + B + C)								
D. EQUIPMENT (LIST ITEM AND DOLLAR AMOUNT FOR EACH ITEM EXCEEDING \$5,000.)								
TOTAL EQUIPMENT								
E. TRAVEL 1. DOMESTIC (INCL. CANADA, MEXICO AND U.S. POSSESSIONS)								
2. FOREIGN								
F. PARTICIPANT SUPPORT								
1. STIPENDS \$ _____								
2. TRAVEL _____								
3. SUBSISTENCE _____								
4. OTHER _____								
TOTAL NUMBER OF PARTICIPANTS ()				TOTAL PARTICIPANT COSTS				
G. OTHER DIRECT COSTS								
1. MATERIALS AND SUPPLIES								
2. PUBLICATION/DOCUMENTATION/DISSEMINATION								
3. CONSULTANT SERVICES								
4. COMPUTER SERVICES								
5. SUBAWARDS								
6. OTHER								
TOTAL OTHER DIRECT COSTS								
H. TOTAL DIRECT COSTS (A THROUGH G)								
I. INDIRECT COSTS (F&A) (SPECIFY RATE AND BASE)								
TOTAL INDIRECT COSTS (F&A)								
J. TOTAL DIRECT AND INDIRECT COSTS (H + I)								
K. RESIDUAL FUNDS (IF FOR FURTHER SUPPORT OF CURRENT PROJECT SEE GPG II.D.7.j.)								
L. AMOUNT OF THIS REQUEST (J) OR (J MINUS K)						\$	\$	
M. COST SHARING: PROPOSED LEVEL \$				AGREED LEVEL IF DIFFERENT: \$				
PI/PD TYPED NAME				DATE		FOR NOAO USE ONLY		
ORG. REP. TYPED NAME				DATE		INDIRECT COST RATE VERIFICATION		
						Date Checked	Date of Rate Sheet	
						Initials-ORG		