

## **TERMS OF REFERENCE**

### **NOAO DIRECTOR SEARCH PROCESS**

**June, 2007**

On April 30, 2007, the AURA Board announced that a search would commence to fill the position of Director of the National Optical Astronomy Observatory (NOAO). Dr. Todd Boroson was appointed as Interim Director.

#### **POSITION DESCRIPTION**

The NOAO Director is appointed by the AURA Board and reports to the Board through the AURA President. While AURA has no minimum criteria in terms of nationality or specific academic or managerial experience, the job of the NOAO Director, as leader of the U.S. national observatory, requires strong qualifications in all areas.

The roles and responsibilities of the Director are enumerated in the AURA Policy Manual, attachment I. All AURA Directors are expected to exercise scientific leadership for both the astronomical community and AURA. Over the next decade, NOAO will face unique challenges that will require a Director possessing institutional vision as well, including a commitment to develop and carry out the NOAO Long Range Plan.

The Director will be expected to meet the following goals and objectives:

#### **GENERAL:**

- Manage the overall operation of NOAO including the distribution of observing time, and scientific resources.
- Maintain and enhance the quality of senior staff at NOAO through recruitment, training and other methods, and ensure the continuity of critical functions (through staff overlap, matrix assignments, redundancy, etc.).
- Provide outstanding leadership for the advancement of astronomy within NOAO, NSF, and the science community in general.
- Advance the role and standing of NOAO within the science community and seek new scientific opportunities to enhance the long-range mission of a National Observatory.
- Contribute to and participate in the development of an overall AURA strategic vision and the role of NOAO within a long range AURA strategic plan.
- Keep the AURA governance, AURA President, NSF, and the science community fully informed concerning substantive scientific and managerial issues, new initiatives, and other matters relating to top management commitments.
- Act as an effective advocate for NOAO and develop strong linkages within NOAO units, with Gemini, with other independent observatories, with non-US entities, and with other Federal Agencies.
- Optimize the scientific output of NOAO through staff and visitor publications and other measures of scientific recognition.

- Actively pursue the development of the overall scientific workforce through programs that promote the participation of women and under-represented minorities in the field of astronomy and in AURA managed observatories.

#### CONTRACTUAL OBLIGATIONS:

As a result of a Management Review which took place in 2006, the National Science Board decided to award AURA a five year renewed cooperative agreement to begin April, 2009. AURA has been asked to meet the following expectations:

- Develop and employ effective mechanisms for engaging the observatories' full range of stakeholders in order to ensure that NOAO facilities, services and programs best reflect the community's evolving needs and priorities;
- Operate and modernize the existing observational facilities and computational infrastructure and ensure that the primary criterion for their utilization be the scientific merit of the proposed research as judged by appropriate, merit-based review processes;
- Assure productive and efficient research access by the US astronomical community to the twin telescopes of the international Gemini Observatory through merit-based review processes;
- Serve as steward of high quality scientific data from the above facilities on behalf of the US communities, through pipelines, reduction processes, dissemination and archiving;
- Develop and incorporate new capabilities, such as telescopes, instruments, and services, at the existing observatories as required by the US astronomical community, within available resources, to ensure community access to state-of-the art facilities and support;
- Implement strategic partnerships with US universities, federal, non-federal and international entities, specifically including the Telescope System Instrumentation Program, that will enhance the scientific capabilities available to the entire astronomical and solar communities;
- Represent NSF in community-based planning, design, and development efforts for potential new federally –funded initiatives in ground-based, optical and infrared astronomy;
- Support the education and development of the future workforce for astronomical and solar sciences including, in particular, those groups which are underrepresented in the US science workforce;
- Recruit and develop an outstanding scientific staff to execute innovative science programs at NOAO that demonstrably support the community-based research carried out at these facilities;
- Propose a plan, in consultation with AST, for expeditious implementation of the recommendations of the 2006 AST Senior Review;

- Integrate research and education for the benefit of the public through a program of education and public outreach;
- Provide for management and budget autonomy of NOAO and NSO;
- Manage the NOAO staff and all activities carried out at the observatories according to current best-practice and in full compliance with all relevant laws and regulations, maintaining quality and relevance in administration and management in a cost-effective manner.

#### STRATEGIC PLANNING:

The long term vision and direction for NOAO as the national observatory is developed within the NOAO strategic plan, incorporated within an overall AURA Strategic Plan. Appendix II is the NOAO Strategic Plan as of the end of 2006. It reflects AURA's approach to establishing NOAO as "an effective national organization" through the development of the system of US telescopes, and direct roles in public-private partnerships for the major Decadal Survey facility recommendations.

Over the past year the NSF Senior Review has suggested a new balance in NOAO's priorities and a mission emphasis on proactively promoting a positive evolution of the system and delivering community access to an optimized suite of high-performance telescopes of all apertures. The full implementation of this new mission emphasis will take place over the next five years under the direction of the new Director.

In addition, the community is now preparing for the next Decadal Survey to take place in the 2010 time frame. The role of the national observatory will be central to the landscape and the recommendations that emerge from this process.

A major expectation for the NOAO Director will be the development of a new Strategic Plan which addresses:

- NOAO's contractual obligations under the new cooperative agreement,
- The implementation of the Senior Review recommendations in consultation with the NSF, and
- The role of NOAO in the next Decadal Survey.
- The future astronomy landscape including scientific directions and trends, evolution of Gemini as an organization and as an element of the U.S. system, evolution of the system of public and independent telescopes, international competition and opportunities for international collaboration.

#### **SEARCH PROCESS**

The search will follow the following terms of reference:

- The Search will commence upon the publication of a public notice. The Search should result in a recommendation at the end of six months. Attachment III provides a draft time line.
- Potential sources for the public notice will be:
  - Science Magazine
  - Nature Magazine
  - Physics Today
  - Chronicle of Higher Education
  - The AAS job register/e-mailer distribution list
  - The AAS Committee on the Status of Women in Astronomy
  - The AAS Committee on the Status of Minorities
  - All major Astronomy Department Chairs
- AURA will establish a website to include all relevant information for prospective candidates, including this document.
- The Committee may, at its discretion, invite applications from specific individuals.
- All candidates and nominees will be required to submit a resume and provide names for three references.
- The Search Committee may recommend reopening the search at the end of the six month period. (That is, finding the best candidate is more important than filling the vacancy quickly.)
- The Search process will maintain confidentiality to the maximum extent practicable.
- The Search will be closed. That is, the identity of the candidates under consideration will not be made public.
- The Search process will ensure a thorough vetting of all relevant issues and candidate strengths and weaknesses.
- The Search Committee will forward to the Observatory Council three candidate names characterizing relative strengths and weaknesses of each. The Search Committee need not assign a priority for the three candidates.
- The Observatory Council will provide a report to the Board and may provide specific recommendations at their discretion.
- If any questions emerge concerning salary, benefits, or any other special conditions normally a part of the negotiation process, the Search Committee will defer such questions to the President.

**SEARCH COMMITTEE**

The role of the Search Committee is to identify outstanding candidates, encourage them to apply, evaluate their relative strengths and fitness to do the job, and to provide a short list. The Search Committee will consist of persons of high standing among their peers. The Committee will be named by the Observatory Council. The Committee includes the following individuals:

Chair—Pat Osmer  
 Todd Boroson (Interim Director)  
 Fred Chaffee  
 Erica Ellingson  
 Mario Hamuy

Phil Massey  
 Sally Oey  
 Verne Smith  
 Lisa Storrie-Lombardi  
 Frank Winkler

In order to receive and manage input from the NOAO staff, the Interim Director will form a liaison committee that will include representatives of the scientific, technical, and administrative staffs, north and south, plus a representative for NSO. The role of the liaison committee would be to serve as a conduit for getting information in efficiently. Their primary job would be to solicit comments from the staff on the qualifications and criteria, issues facing NOAO, and also gather information on any particular question that the search committee has. The Interim Director will distribute whatever information is public to the whole staff and will serve as the interface between the staff and the Search Committee.

It is the policy of AURA to encourage diversity in all aspects of the search and recruitment process including the constitution of the Search Committee and of the candidates.

## **ROLES AND RESPONSIBILITIES OF THE NOAO DIRECTOR**

### **A. ORGANIZATIONAL PURPOSE OF NOAO**

1. To maintain, support and make available high-quality optical/IR telescopes, auxiliary instruments and data reduction facilities and software to users chosen on the basis of scientific merit from the astronomical community (both outside and staff).
2. Be among the leading centers in developing frontier, innovative instrumentation and techniques for astronomical observations at visible and infrared wavelengths.
3. Maintain a first-class scientific staff, which will provide leadership for developing such facilities and equipment, will carry out forefront basic research, and will support the observatories' mission in other ways utilizing their astronomical expertise.
4. Assume major responsibilities for design, development and fabrication of new optical astronomical facilities, which are most properly national user centers and/or of too great a complexity/scope to be carried out by a single university.

### **B. BASIC RESPONSIBILITIES**

The Director-NOAO reports through the President to the Board of Directors of AURA, Inc., and has overall responsibility for the conduct of the program of the National Optical Astronomy Observatories, and more specifically for assembling, maintaining, and providing scientific leadership to a first-class scientific staff; for maintaining, operating, and developing high-quality astronomical facilities for use by the astronomical community; for initiating a program of frontier instrumentation for optical and infrared astronomy; and for assuming responsibility for the design and development, as national centers, of major new optical facilities. The Director is responsible for selection of Associate Directors and other key personnel through whom this program is planned, conducted, and monitored; for assignment of authority and resources to these staff members consistent with AURA policy; and for overseeing their performance and providing guidance.

The Director will be responsible for conducting the program of NOAO in a manner consistent with the policy guidelines provided by AURA and NSF and, as appropriate, to recommend extension or modification of such policy.

### **C. SPECIFIC FUNCTIONS**

In discharging the above responsibilities, the NOAO Director will:

1. Establish and maintain a structure within NOAO, which will foster a spirit of scientific inquiry and service to the science of astronomy.

2. Identify individuals for those senior positions in NOAO which report directly to the Director, and provide guidance, encouragement, and supervision to them.
3. Supervise, encourage, and provide for the development of the scientific staff of NOAO.
4. Respond to and support AURA Board committees including the Observatories Visiting Committee.
5. Establish and administer procedures for allocation of resources within NOAO.
6. Prepare and submit to NSF, subsequent to AURA approval, annual and long-range program plans to reflect the needs of the astronomical community, including NOAO scientific staff.
7. Implement approved program plans consistent with AURA policies.
8. Promote a program of training in NOAO that will enhance the managerial, technical and scientific skills of its staff.
9. Report on the status of the program to the AURA President and, via the President, to the AURA Board and its committees.
10. Serve as principal interface for programmatic matters between AURA and the NSF Division of Astronomical Sciences, and exercise substantial delegated responsibility for such interface in contractual matters.
11. Serve as AURA's principal spokesperson to the scientific community on matters relating to NOAO.
12. Maintain contact with the scientific community in order to remain informed on community needs to represent AURA's plans, and to obtain an evaluation of activities proposed and under way in NOAO.
13. Participate in a program of individual research as time permits.

**NATIONAL OPTICAL ASTRONOMY OBSERVATORY  
STRATEGIC PLAN—2006  
(To be reformulated by the new NOAO Director)**

**MISSION AND ROLES**

As the national observatory for O/IR astronomy, the mission of NOAO is “*to promote excellence in astronomical research by providing the interface to state of the art facilities and data for U.S. ground-based astronomy and, thus, becoming the national observatory*”.

**CUSTOMER**

NOAO serves the U.S. astronomical community, which, through AURA, influences national and international agencies to fund it and to host it in Chile.

**CONTEXT**

**NOAO Role in the System:** NOAO operates telescopes at Kitt Peak and Cerro Tololo and provides the interface for US astronomers to the international Gemini Observatory. Independent observatories operate a larger set of facilities, and NOAO provides very limited access to these facilities in return for NSF funding for instrumentation administered through sub awards. We conceive of the whole entity of U.S. astronomical facilities as a system. Leading strategic planning for the system is a responsibility of NOAO, which must involve the independent observatories, so that their plans can be integrated into a system plan. NOAO’s system responsibility is called out by the AASC decadal survey, but community acceptance will only follow when NOAO’s efforts in this direction actually bear fruit.

AURA and NOAO have a strong record of bringing advanced concepts to decadal surveys. As foreseen by the AASC, NOAO’s largest new facilities will be public/private partnerships or international partnerships. Challenges posed by this context include

- Building partnerships between natural competitors
- The balance between the national centers’ budgets and the individual grants program
- The diversity of facilities’ needs between small colleges and major (Category I) research universities

**National Astronomy Landscape:** The context in which NOAO operates

- Intellectually, involves the emergence of the new disciplines of particle astrophysics and astrobiology;
- Internationally, involves an informal network of national observatories, e.g. AAO (binational), ESO (intergovernmental), Gemini (international funding agencies), NAOJ and HIA (Japanese and Canadian ground-based astronomy);

- Nationally, is characterized by a tight federal budget with steady, but not increasing, availability of NSF funds; increasing, but indirect, access to DOE funds (supporting particle astrophysics); and little access to NASA funds.

As our anchor agency, NSF strongly encourages NOAO to promote public education, understanding, and support of astronomy. NSF also values diversity in the workforce of its centers, and NOAO thus needs to match its scientific and technical staff to the profile of the nation's graduate schools and colleges.

## **ACTIONS**

As top priorities, NOAO will:

- Implement the O/IR initiatives of the decadal survey; importantly, establish firm partnerships for the GSMT, and LSST, leading to construction starts before 2010.
- Make the NOAO Gemini Science Center the exemplar of Gemini partner offices.
- Play a lead role in the NVO by operating an O/IR ground-based node that meets or exceeds international virtual observatory standards.

NOAO will also:

- Working with AURA members, independent observatories, and appropriate partners, develop a long range plan and evolve the O/IR system into an integrated national observing system, and set the User Support standards for observatories in the System, so as to become the gateway for a US and international system for merit-based proposals.
- Restructure NOAO to create a shared infrastructure support organization to serve Gemini, TMT, LSST, etc within the national observatory.
- Focus with highest priority on facilities of scale. Retire or devolve from NOAO productive facilities that are not fully the state of the art as fast as new facilities are created.
- Include a user grants program in proposals for new facilities.
- Develop the concepts for new facilities that will seed the next decadal survey, e.g. a 10 km baseline interferometer array, a global network of telescopes for full time domain coverage, South Pole telescopes.
- Work with the community to achieve a robust national instrumentation capability.
- Become the national leader in astronomy education.
- Exploit scientific synergies with NASA missions invigorated by the exploration vision, especially facilities complementary to TPF and dark energy probes.
- Explore U.S interest in an international meta-observatory.

## **METRICS**

Evaluate our strategy:

- The schedule for new facilities in the decadal survey
- Usage and scope of the O/IR node of the NVO

Things we will track:

- The number and scope of facilities making up the US observing system.
- Large telescope productivity exceeding the citation rates of NOAO's 4-meter telescopes by the end of the decade.
- Impact on the next AASC decadal survey in 2010 in the form of
  - recognition of NOAO's system approach
  - a high priority for NOAO's concepts for new O/IR facilities
- Production of new state of the art instruments for telescopes in the US system.
- Numbers of students and teachers involved in NOAO's education programs, numbers of visitors to our observatories, and media impact of discoveries made using the US observing system.

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**TIMELINE FOR NOAO DIRECTOR SEARCH**

June 2007	NOAO Director Search Committee Announcement Terms of Reference Finalized
June 2007	First Telecon Meeting of Search Committee -Discuss strategy, timeline for search, determine meeting date availability, requirements for candidates, identify potential candidates, etc.
June 2007	Advertisement Finalized for placement in July issues of: - <i>Physics Today</i> - <i>Nature</i> - <i>Science</i> - <i>AAS Register</i> -AAS Committee on the Status of Women in Astronomy -AAS Committee on the Status of Minorities -AURA Website -Posted in AURA centers -Sent to MRs, Board, and Councils
July through September 2007	Committee meets periodically via telecon to discuss progress
October 1, 2007	Deadline for applications with reference letters
November 2007	In-Person Meeting of Search Committee -evaluate applicants and develop short list (if necessary) -Interviews with Committee (exact dates will be determined early in the process)
December 2007	Committee Report and Preferential List to OC
February 5-8, 2008	OC Meeting OC Recommendation to the Board
February 2008	Board to act on OC recommendation
March 2008	NSF approval/New Director named