

Implementing the Senior Review Recommendations – the Renewal Proposal Takes Shape

Todd Boroson

Since the last *NOAO-NSO Newsletter* in March 2007, we have made good progress in developing plans for how the NOAO program will change in response to the NSF Senior Review. First of all, the schedule has changed. The National Science Board granted an 18-month extension on the current cooperative agreement between AURA and NSF, resulting in a revised due date for the new proposal of 1 December 2007, rather than the June 15 deadline we had been working toward. One benefit of this extension is that we can take more time to discuss the impact of the changes with a wider swath of the community, and then incorporate this input.

We have already presented many of the ideas for the evolution of the program to various oversight groups, and some were explained in the *March Newsletter*. One of the dominant themes will be renewed emphasis on the “System”—the idea that the combination of public and private (or federally-funded and non-federally-funded) facilities can be viewed as a complete suite of capabilities, if access and strategic planning and development are coordinated effectively by discussions involving the whole community. We intend to use this concept both to address specific Senior Review recommendations, such as increased access to small and mid-sized telescopes, and to manage the priorities and evolution of the NOAO program.

In order to do this, we will make a structural change to the NOAO organization. The programs that can provide benefit to the distributed

System will be managed together as a System Division. These programs will include our Major Instrumentation Program (now called System Instrumentation), the Data Products Program, our telescope Time Allocation Committee activity, the new GSMT Program Office, and a new program, called System Development, which will lead community interaction to guide the development of a more robust System. These programs, most of which are often lumped into the category of administration by program reviews, are actually science-driven activities, and not overhead of operating the organization. The goals of these programs will be more coordinated with each other and aligned with the development of the System through integrated planning discussions.

Another activity that will receive increased attention in the changing program is engagement of the community. It is obvious that this is a complex and difficult thing to do effectively. The “community” is so diverse in scientific interests and in expectations for the role of NOAO that frequent effective communication in both directions is essential.

Given limited resources, it may not be possible to ever establish a program that satisfies the entire community, but NOAO is expected to try. Thus, you will see us take many more opportunities to present and explain our program, and many more requests for input from you. We will explore new mechanisms and new media for doing this. Please be proactive in providing feedback, in whatever ways are convenient for you.



Renewing Small Telescopes for Astronomical Research (ReSTAR) Seeks Community Input

Todd Boroson

One of the strong points made by the report of the NSF Senior Review was the community’s desire for more access to small and mid-sized telescopes with powerful, modern instruments.

The Senior Review recommended that “NOAO take a hard look at the capabilities of the full suite of telescopes with which NOAO is involved and to work with the community to consider new ways to use these telescopes more creatively and efficiently to execute better science programs.” Moreover, “it recommends that NOAO continue to

see managing the provision to the community of facilities to execute first rank science using small and mid-sized telescopes as a core part of its mission.” NOAO is committed to achieving these goals and needs your help in doing so.

The full suite of telescopes with NOAO involvement includes Gemini, KPNO, CTIO and the TSIP facilities, which are predominantly 6.5 meters in aperture or larger. We have already begun to improve the infrastructure, and will explore additional capabilities at Kitt Peak

continued

ReSTAR Seeks Community Input continued


National Observatory (KPNO) and Cerro Tololo Inter-American Observatory (CTIO). We note that additional community access will be gained on NOAO 4-meter telescopes by restoring the observing time sold to operations partners when those agreements expire.

New operating modes, new instruments, or new telescopes may be needed at KPNO and CTIO. In considering how NOAO's program should move forward, we also want to explore the possibility of creating a real system from the existing telescopes operated by US institutions with apertures less than 6.5 meters. A prerequisite for all of this is knowing what the community wants—not just the underlying science goals, but the required instrumental capabilities, site conditions, operations modes, and numbers of nights.

Following discussions with our NSF program manager, Tom Barnes, I have asked Caty Pilachowski (Indiana University) to chair a community panel charged to put this information together. In addition to Caty, the membership of this committee includes Charles Bailyn (Yale University), Michael Briley (University of Wisconsin/Oshkosh and NSF observer), Chris Clemens (University of North Carolina), Deidre Hunter (Lowell Observatory), Jennifer Johnson (Ohio State University), Bob Joseph (University of Hawaii), Steve Kawaler (Iowa State University), Lucas Macri (NOAO), Randy Phelps (California State University - Sacramento), John Salzer (Wesleyan University), Michele

Thornley (Bucknell University), and David Weintraub (Vanderbilt University).

This committee, named Renewing Small Telescopes for Astronomical Research (ReSTAR), will meet for the first time in mid-May and will try to conclude their activities and issue their report by the end of 2007. ReSTAR members will accomplish part of their work by bringing their wisdom to the meetings and by analyzing statistical information on requests and publications, but much of the information they gather should come from the users and potential users of these facilities. At their first meeting, the members of ReSTAR will establish a strategy for incorporating broad community input into their analysis.

ReSTAR has already set up or is planning several mechanisms for community input. There is a Web site at www.noao.edu/system/restar/ with instructions on how to submit information and opinions. This Web site will announce meetings and track some aspects of their progress. The committee is also planning a forum at the Honolulu AAS meeting for discussion of their activity and to solicit ideas. Finally, ReSTAR may form subpanels and coordinate virtual meetings with those in the community who want to contribute input on specific disciplines or techniques. Watch the Web site for further information. 

GSMT Program Office News - Evolution of the Science Working Group

Jay Elias

One of the primary activities of the NOAO Giant Segmented Mirror Telescope (GSMT) Program Office (the successor to the New Initiatives Office) is support of the GSMT Science Working Group (SWG). The SWG is intended to provide scientific advice through NOAO to the NSF regarding community needs for access to an extremely large telescope in the era of the Atacama Large Millimeter Array and the James Webb Space Telescope.

Specifically, these activities are expected to include:

- Establishing and maintaining the national GSMT Design Reference Mission (DRM) to set scientific performance expectations for candidate designs
- Providing an independent evaluation of the community's operational needs, the costs, and the scientific sociology of

a GSMT, and then helping the community to understand the implications of these elements for both the facility and the underlying capabilities of its science instruments and human resources

- Providing the results of these studies in a timely fashion as input to the next decadal survey. The NSF considers that a re-affirmation of GSMT's priority in the resulting decadal survey report is a necessary condition for commitment of construction or operations funding.

At present, the membership of the GSMT SWG is being modified to ensure that it provides a broad representation of US community interests and scientific expertise. Updates on future SWG activities can be found on the GSMT Program Office Web site at NOAO (www.gsmt.noao.edu).

A Tribute to Jeremy Mould

Todd Boroson & the Staff of NOAO

On April 29, Jeremy Mould stepped down as director of NOAO. Jeremy had served as the NOAO director since April 2001, and he has provided critical leadership, both within the organization and in the community. Jeremy began his directorship by writing the previous five-year proposal to manage and operate the national observatory, at a time when NOAO had just been criticized by the 2000 decadal survey for not being an "effective national organization." This criticism arose, in part, from the lack of a clear process for implementing the decadal survey recommendations for ground-based, optical/infrared (O/IR) astronomy, including particularly the Large Synoptic Survey Telescope (LSST) and the Giant Segmented Mirror Telescope (GSMT).

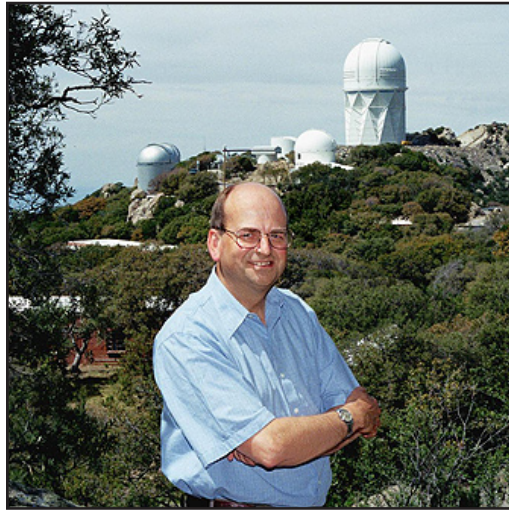
Jeremy took on this challenge directly, and he was instrumental in restructuring NOAO to be a more effective national organization, and one that is perceived that way in the community. Under Jeremy's leadership, NOAO staff started the NOAO LSST program and the New Initiatives Office. The NOAO LSST program became the seed of what is now the LSST project, which has just submitted a construction proposal to the NSF. The NOAO New Initiatives Office effort on GSMT merged into the ambitious project now known as the Thirty Meter Telescope (TMT). The NOAO pieces of both of these projects

continue to provide input from the community and representation in these flagship projects of the near future.

Although these new programs were the most visibly changing parts of the NOAO program during Jeremy's directorship, he also oversaw and coordinated many other new activities, including astronomical site testing in Antarctica, the development of partnerships to build large-scale instruments such as NEWFIRM, the One-Degree Imager, and the Dark Energy Camera (see the CTIO section in this *Newsletter* for the latest developments with it). He also increased the attention given to data archives and our involvement in the National Virtual Observatory, the completion and commissioning of the SOAR telescope, and the transition of the NOAO Gemini Science Center, as Gemini itself evolved from a construction project to an operating observatory.

Jeremy performed all of these tasks with a keen intelligence, a sharp eye for detail, and a dry sense of humor peppered with the occasional bit of Aussie slang.

Jeremy will remain on the NOAO scientific staff, and the entire staff and organization wish him continued success in his new role.



Users Committee Seeks Input

James Lowenthal (Smith College)

The NOAO Users Committee provides the national observatory with feedback and advice on all aspects of its operations that might impact you as a user of NOAO facilities and services. The more input we receive directly from users, the more effectively we can carry out this charge.

The committee will have its 2007 annual meeting in Tucson in early October. On the agenda will be discussion of the short- and long-term instrumentation plans for KPNO, CTIO, and Gemini; implications of the NSF Senior Review for NOAO facilities and operations; and the role of NOAO facilities in the national telescope system.

2007 NOAO Users Committee

- Ian Dell'Antonio, Brown University (ian@het.brown.edu)
- James Lowenthal, Smith College (*Chair*) (james@ast.smith.edu)
- Stacy McGaugh, University of Maryland (ssm@astro.umd.edu)
- Ata Sarajedini, University of Florida (ata@astro.ufl.edu)
- Nathan Smith, University of California, Berkeley (nathans@astro.berkeley.edu)
- Angela Speck, University of Missouri (speckan@missouri.edu)
- Nicole Vogt, New Mexico State University (nicole@nmsu.edu)

Please take a few minutes to fill out a form at our Web site (www.noao.edu/dir/usercom/) or send one of us an email about what is good and bad regarding the NOAO facilities that you use, or additional capabilities that you think NOAO should offer.

AURA Turns 50

Jeremy Mould

AURA celebrated its 50th birthday in April at its annual general meeting in Tucson. Steve Strom addressed the AURA Member Representatives, recalling the achievements fostered during AURA's "career," starting from the 36-inch, 84-inch, and McMath telescopes, through the construction of the 4-meter telescopes. Steve traced the parade of scientific discoveries from the flat rotation curves of disk galaxies to the distant supernovae that heralded dark energy.

From an original seven members, AURA now includes 32 institutions and seven international affiliates. AURA has expanded its centers from Kitt Peak through Cerro Tololo Inter-american Observatory to the Hubble Space Telescope Science Institute and now the Gemini Observatory, which has an 8-meter telescope in each hemisphere.

Astronomy has swept forward on a wave of technology, and AURA has enhanced that progress with national centers that operate on the principle of peer-reviewed access for astronomers from all institutions.

Kitt Peak will celebrate its 50th birthday this time next year. Recently, I visited the Titan Missile Museum, south of Tucson, and saw technology of the 1960s frozen in time. Some of the infrastructure of Kitt Peak dates from the same era, but the capabilities of our telescopes advance continually with every new instrument built, and renewal of some key elements of that infrastructure is underway thanks to the NSF Senior Review (see pages 23 and 26 for more on this topic.)

Stephen Strom Retires From NOAO

Sidney Wolff



Steve Strom—retired! To those who know him well, that phrase will seem like an oxymoron. Officially, Steve "retired" from NOAO on 11 May 2007,

but given his plans for the future, the quotation marks around the "r" word are definitely appropriate.

The key milestones in Steve's career are well known: undergraduate and graduate degrees from Harvard University, four years at Stony Brook, where he put the astronomy program on the map, followed by his first appointment at Kitt Peak (1972-1984). He then chaired the Five College Astronomy Department before returning to NOAO in 1997.

Steve's earliest series of papers took advantage of new computer capabilities to develop non-local thermodynamic equilibrium (non-LTE) models and apply them to abundance studies of early-type stars. He was briefly tempted by the study of galaxies, publishing important papers on surface brightness profiles, globular cluster systems, and compositions and composition gradients. However, even at this stage in his career, there were hints of what was to come in a handful of papers on young clusters and Herbig Ae/Be stars.

Beginning in the 1980s, his research began to focus increasingly on the formation of stars and planetary systems. As early as 1989, he, Karen Strom, and their collaborators used infrared excesses to estimate disk lifetimes to be 3-10 million years, thereby constraining the time scale for planet formation. With Suzan Edwards and other collaborators, he published the pioneering paper on the regulation of angular momentum by accretion disks. Recent papers have focused on accretion and transition disks, using their properties to obtain information about the likelihood that planets are forming within these disks.

Steve's influence on astronomy extends well beyond his research. He has always been committed to developing young people, and many of us—myself included—can trace key milestones in our careers to opportunities that Steve made possible. An illustration of his commitment to helping others to advance in the field is the fact that of his ten most cited papers, he is first author on only two—even though I know from personal experience that on many of them he was a more than an equal contributor of key ideas, and did much of the observing, data reduction, and writing.

Most significant, however, is Steve's impact on the overall strategic directions of US astronomy. He played a major role in all four of the last decadal surveys. He wrote the "Future Directions" report for NOAO, which set it firmly on the path toward what became the successful Gemini telescopes project. Even in

his "retirement," Steve is committed to working to ensure that the US community gains access to a 20-30 meter class telescope. Always, Steve has inspired those who work with him to try to achieve stretch goals—never to settle for the status quo or the merely easy.

Steve has long been motivated by the vision set forth by Leo Goldberg: "*What this country needs is a truly National Observatory to which every astronomer with ability and a first-class problem can come...*" In his remarks to the annual meeting of the AURA member representatives on the occasion of AURA's 50th anniversary, Steve laid out how he thinks this vision must evolve during the coming decades, with the independent observatories and the national observatory working in partnership to build a system of complementary facilities that, taken together, will provide open, competitive access to the full range of capabilities for "every astronomer with ability and a first-class problem." This is surely a stretch goal, and our best tribute to Steve would be to continue on the path that he has so effectively advocated.

In addition to continuing his research and participating in the science working group for the 20-30 meter telescope, Steve plans to devote more time to his other passion—photography of the southwest—as well as writing a popular guidebook to the observatories of the region in partnership with Doug Isbell of NOAO. Check out his Web site to see examples of his photography (www.stephenstrom.com).