K P N O

O P E R A T I O N S

WIYN Update

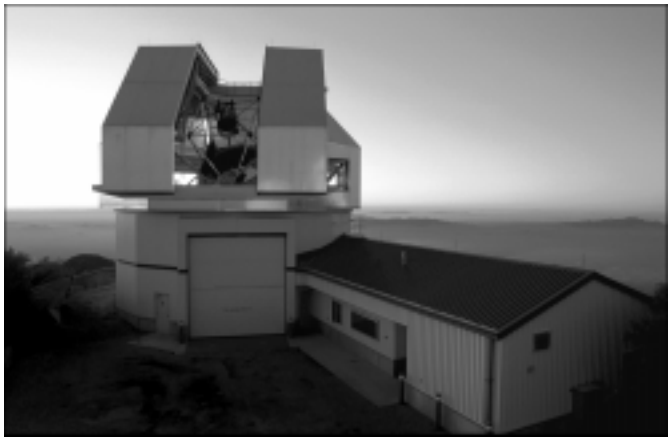
Richard Green and Abi Saha

Two major events have drawn the focus of the WIYN Consortium this spring—one was the five-year performance review of the WIYN Observatory; the other was the announcement by David Sawyer that he would be phasing out as WIYN Operations Manager to pursue other career interests.

The WIYN agreement called for a review of the Observatory after five years of scientific operations. We were fortunate to engage Jeremy Mould, the Director of the Research School of Astronomy and Astrophysics at the Australian National University, as Chair, along with Craig Foltz, Director of the MMT Observatory, and Rich Kron, Director of Yerkes Observatory at the University of Chicago, as the review committee. They received a charge from the WIYN Board and a self-assessment prepared by Abi Saha and the WIYN Scientific Advisory Committee. The review committee met on 17–18 April in Tucson, including a visit to the telescope. Their summary and recommendations are in the accompanying article.

The WIYN Board and SAC are grateful for such an incisive and prompt review, full of valuable and constructive suggestions.

David Sawyer announced in February that he is phasing out his involvement with the WIYN Consortium, being available only half-time until June 30th, then one-quarter time until he leaves the position on October 31st. Dave's role in achieving the operational stability cited by the review committee has been invaluable; his ability to build confidence among the partners in the management of WIYN operations has nurtured the trust and cooperation characterizing WIYN.



The WIYN 3.5-m Telescope on Kitt Peak

From now until November, we have in place an interim management plan. Charles Corson, the WIYN site engineer, will take full responsibility for the daily technical support issues at the telescope. Dianne Harmer is now the Coordinator of Observing Support for WIYN. As such, she is the primary point of contact for both the NOAO observers (Queue and dedicated-time) and the university observers, including the scheduling of (and participating in) instrument setups, observer starts, and ORP follow-ups. Dave Sawyer will continue his responsibilities for resource management and reporting, as well as supervision of the summer shutdown activities at WIYN, including aluminizing the primary mirror.

Watch this space for further reports on the next generation of WIYN management.

Report of the WIYN Review Committee

Overview

The WIYN Consortium has requested an evaluation of the effectiveness of its investment in the WIYN Observatory in advancing its goals for support of astronomical research and education.

The review committee finds that in the five years since first light the WIYN Observatory has become a productive forefront astronomical facility. The value of a 3.5 meter facility will not be diminished as the Gemini and other larger telescopes come on line.

The Committee was pleased to find that the WIYN Observatory and the WIYN Consortium are producing forefront scientific results, and that the collaboration is working well.

Particular highlights include:

- The telescope delivers the best images over a wide field of view of any continental US facility.
- Operations have already achieved an outstanding level of reliability and efficiency.
- The project has had a major impact on the research opportunities available to member universities, involving a broad base of faculty and providing important career development paths for younger faculty and postdocs.
- The number of Ph.D. dissertations is especially impressive, and the number of publications is in line with any facility at this early stage of operations. For the astronomy departments of the universities of Wisconsin, Indiana and of Yale University the WIYN Observatory has become the largest source of experimental data for doctoral theses.
- The project has served NOAO's interests in 1) providing a proving ground for technological innovations necessary for Gemini development; 2) enabling access to wide-field spectroscopy for the US astronomical community; 3) bringing substantial new aperture online very cost-effectively; and 4) demonstrating the intrinsic quality of site conditions at Kitt Peak.
- The spirit of institutional cooperation is high, excellent support staff have been hired, and resources have been managed prudently, all of which enables a good foundation for further development.

These aspects position WIYN to make significant contributions in the future. To ensure that opportunity, a number of challenges must be confronted, among which are:

- Identifying resources (funds and people) for new instrumentation and major upgrades on an on-going basis.
- Establishing a path to undertake major new projects (e.g. the construction of new instruments) in a timely way and with efficient use of resources.
- Enhancement of instrument-development capabilities at the universities.
- Involvement of more university academic staff.
- Constraints related to NOAO's separate objectives (e.g. competition for NOAO resources; mountaintop operations and interfaces; obligations to the US community).
- Meeting educational goals at the undergraduate level in a way that mutually

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supports the research effort.

- Formulating an aggressive path for future scientific and educational opportunities.
- Recovering from staff turn-over.

Recommendations checklist

Hardware

All possible resources and manpower should be directed to the improvement of the throughput of the Bench Spectrograph. This is our strongest recommendation.

The WIYN imager and Mini-Mosaic should be outfitted with modern, high-speed controllers as soon as possible. This recommendation is second in priority only to the Bench throughput improvements.

Management

The committee recommends that the WIYN Observatory expand its scientific staff. Research Fellows or postdocs would increase WIYN's high impact science in a few fields.

We recommend pursuing the search for a Director. The Search committee should not neglect operational qualifications in this quest.

Operations

The committee recommends study of the ARC Consortium operations in remote observing.

NOAO should review from a strategic standpoint the decision to cease operation of queue observing.

Instrument development

We recommend that universities offer teaching buyout to help with instrument development.

In the long term, the "soft" ledger imbalance needs attention. [The "soft ledger" is the record of partner contributions that exceed their obligation to the base budget.]

A Busy Summer on Kitt Peak

Bruce Bohannan, Richard Green, and Tony Abraham

Because the summer months of July and August are traditionally monsoon time, with cloudy skies and thunderstorms, KPNO shuts down to pursue a variety of improvement and large-scale maintenance projects. Major activity this summer includes aluminization of the WIYN primary mirror and work on two key improvement projects on the Mayall.

The WIYN primary will receive a fresh coating of aluminum (it was last aluminized in 1998). After the mirror is re-installed, the optics will be collimated and new active optics lookup tables constructed. The latter steps are key to achieving excellent optical performance from the telescope. All of the seeing-related improvement projects at the Mayall have combined with regular optical tune-ups to yield average seeing at the Mayall of less than 1" (*NOAO Newsletter*, March 2000). Similar concentrated effort at WIYN has quadrupled the likelihood of obtaining 0.6" or better (*NOAO Newsletter*, March 2000).

At the Mayall, in addition to the usual computer and mechanical maintenance, installation of the servo system for the active f/8 secondary marks a critical milestone for the project. The active f/8, which will correct for coma induced by flexure of the telescope structure, will be commissioned during the fall and is expected to be in routine operation by the end of 2000B. Installation and commissioning of a wavefront camera, which will enable nightly wavefront measurements and ease construction of active optics lookup tables, is planned for 2001A.