



# OBSERVATIONAL PROGRAMS

## Proposals Received for Semester 2000B

*Todd Boroson*

The recent 2000B proposal deadline marked the first occasion that Gemini North and Hobby-Eberly were included in the facilities for which NOAO received proposals. A total of 423 proposals were received for all telescopes, including 17 proposals for Chilean time on CTIO telescopes, which were forwarded to a Chilean TAC. The remaining 406 proposals included 78 for Gemini North, 13 for Hobby-Eberly, and 8 for the MMT. Forty-three of the proposals asked for time on more than one telescope, with 28 of these asking for time at more than one site—most often KPNO and CTIO.

The oversubscription rates for the large telescopes were in the range from 3 to 4, except for Gemini North, which had an oversubscription rate of more than 6. Only a limited amount of time, 17.5 nights, will be available to US proposers for Gemini North in Semester 2000B. The Gemini proposals were divided approximately evenly between Hokupa'a/QUIRC, the U. Hawaii AO-corrected near-IR imager, and OSCIR, the U. Florida mid-IR imager/spectrograph. Nights requested in the Gemini North proposals ranged from 2.5 to 50 hours.

Included in the total were 17 proposals to begin new survey projects. Up to twenty percent of the time on all telescopes (except Gemini North in this semester) is being made available for large projects that will make useful, uniform databases available to the community on a short timescale. Although the exact oversubscription rate is more difficult to evaluate, this represents a healthy demand for the nights remaining after the allocation to the five ongoing survey programs (see "2000B Observing Request Statistics" article at the end of this section).

## Looking Ahead to 2001

*Todd Boroson*

The fall proposal round for observations in the 2001A semester (nominally 1 February–31 July 2001) will be here soon, with the usual due date of 30 September 2000. Proposal materials should be available around the first of September at <http://www.noao.edu/noaoprop/>.

In addition to the usual KPNO and CTIO telescopes, the 2001A round will likely include the first opportunity for regular Gemini proposals using the facility instrument NIRI, the U. Hawaii-built near-infrared imager. 2001A will be the first semester of "normal" Gemini North observations, with both queue and classically scheduled programs.

The 2001A semester will also include the opportunity to propose for about 13 classically scheduled nights at the MMT Observatory's new 6.5-m telescope, and for about 8 nights of queue-scheduled observations at the Hobby-Eberly Telescope at McDonald Observatory. The next opportunity for new survey proposals will be the following semester deadline, 31 March 2001.



## First “Gemini” Data!

*Caty Pilachowski*

Gemini’s first satisfied users are happy recipients of data from the Keck “NIRSPEC” 1-5  $\mu\text{m}$  IR spectrometer. These observations are made possible by the exchange of twelve nights of NIRSPEC time over the next two years in return for one of Gemini’s Aladdin InSb arrays. The NIRSPEC observations are being organized and undertaken as a “service” program by Gemini staff. Forty-six proposals (24 from the US) were received in the first round for April 8 observations, and an additional 23 proposals were received for the second evaluation cycle for observations in May. On the first scheduled night, data were obtained for two (US) programs, despite thick cirrus. Because of mechanical problems with NIRSPEC, the “Gemini” nights of May 10 and 11 are being rescheduled, probably to later in May.

Additional opportunities to apply for Keck NIRSPEC observations will occur over the next 18 months. The next opportunity to apply for observations is likely to be October 2000 for observations later in the year. For further information on the Keck NIRSPEC observing opportunity, see <http://www.us-gemini.noao.edu/sciops/instruments/nirspec/nirspecIndex.html>.

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## IRAF Update

*Doug Tody*

As we write this, May 2000 is only several days away and the end of an era is rapidly approaching. Jeannette Barnes is retiring in May after nearly 40 years at KPNO and later NOAO, and after a 20-year association with the IRAF project. Literally hundreds of astronomers around the world know Jeannette and will remember the enthusiasm and hard work that she has given to astronomy over the years. We will miss her and the motivation and leadership she has provided to NOAO and IRAF these many years.

While the next patch release of IRAF is not expected until next summer, a number of recent application updates and enhancements have extended the capability of the current release of IRAF. Among the updates detailed below are a new version of X11IRF tools (XGterm, XImtool, etc.), the execution of

IRAF scripts at the host level, the initial release of the IRAF astrometry package, and a new “charge shuffling” mode for the ICE CCD data acquisition package.

The current release of IRAF is V2.11.3, which was updated for all supported IRAF platforms in late 1999. No further patch releases are expected until perhaps summer 2000. Preliminary tests on a Solaris 8 system here at NOAO indicate that the current Sun/IRAF release is compatible with Solaris 8, although we have not yet run extensive tests. The current RedHat Linux release, version 6.2, also appears to be reasonably compatible.

The new version of the X11IRAF tools (XGterm, XImtool, etc.) has been completed and is currently undergoing final testing. This version, which should be released for all supported IRAF platforms

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in early May, is primarily a bug-fix release to support the IRAF science GUIs and to improve the stability of XGterm during extended use. Most changes will be transparent to users, but a few new features were added. XImtool now allows the hardcopy image annotation to be more customizable, various new keystroke accelerators were added to XImtool, XGterm was updated to be based on X11R6, and the Client Display Library (CDL) is now part of the X11IRAF distribution (a separate distribution will continue to be available). The Object Manager GUI toolkit now contains a new Tabs widget and 3-D Scrollbar, and the entire package was updated to support new platforms such as Intel Solaris 7, LinuxPPC, and the new Linux glibc libraries. The new version of X11IRAF is available from our FTP archives at [iraf.noao.edu](http://iraf.noao.edu) in the `/iraf/x11iraf` directory.

A new IRAF capability introduced with the release of IRAF V2.11.2 allows IRAF scripts to be executed as host level commands (an Open IRAF feature). Users who have questions about how to use and implement this new facility should check our Web page for further details (see [http://iraf.noao.edu/iraf/web/new\\_stuff/cl\\_host.html](http://iraf.noao.edu/iraf/web/new_stuff/cl_host.html)).

The initial version of the IRAF astrometry package is now in the final stages of testing and documentation, in preparation for formal release later this year. This package includes a general-purpose astrometric catalog extraction and filtering task, and a related image survey image extraction task. A network-based catalog access interface developed earlier is used in this application. Code developed for the catalog extraction and filtering task was successfully used in the new NOAO on-line proposal system to extract Gemini guide stars.

As part of our work to support Gemini reductions—and generally enhance the IRAF reduction packages—Frank Valdes has identified the information needed to describe spectroscopic data in two-dimensional image formats. This includes most of the new multiplexed formats such as multifiber, slit masks, and IFUs. The description is intended to

allow software, such as the tasks in the IRAF APEXTRACT package, to automatically locate and extract the often large numbers of spectra. The information can also be used to reconstruct data cubes for IFUs. The analysis may be found at <http://iraf.noao.edu/projects/ccdmosaic/imagedef/spec2d.html>. These conventions are still under development, and review and comments are welcome.

The IRAF group is working with the NOAO Deep Wide-Field Survey team to further develop the software used to pipeline process the survey data. While the primary goal of this effort is to help process the data for the survey, the experience gained in carrying out an actual survey project will be very worthwhile, given the increasing importance of surveys in ground-based astronomy, including a number of programs currently underway or planned involving the NOAO telescopes. The effort will also result in new capabilities and tasks for processing multi-band optical and IR data in IRAF. Valdes and Davis are both involved in the effort at this stage, which is concentrating on reduction of the OIR image data. In later phases of the project, we will look at catalog generation and at how to make the data products available online on the Internet.

Rob Seaman has prepared a version of the ICE CCD data acquisition package to support a new “charge shuffling” dual-exposure mode for spectral imaging at Kitt Peak National Observatory. Charge shuffling involves repeatedly shifting the charge back and forth from side to side of a CCD, while nodding the telescope alternately from an object to a blank sky position. The CCD is optically masked such that the sky pixels are kept dark, while the object pixels are exposed and vice versa. The nodding and shuffling and opening and closing of the camera shutter occurs on a short enough time scale that the sky brightness variations are frozen.

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## Observational Programs

The output of this process is a dual exposure of contemporaneous object and sky spectra accumulated through the exact same optical path. This mode is beneficial, for instance, for multi-slit observations such that the width of each slitlet can be minimized to allow many more slits per exposure. New parameters added to ICE include the number of nods and the number of pixels to shift for each exposure. A variety of different nodding patterns are supported, such as a simple ABAB object/sky pattern and a bracketed pattern that begins and ends with a half-length sky subexposure. The on-object and on-sky exposure times may be specified separately. Work continues on the header keyword definitions and data reduction software to support the new exposure type.

The tenth annual conference on Astronomical Data Analysis Software and Systems (ADASS) will be held at the Swissotel Boston, on 12–15 November 2000, and will be hosted by the Smithsonian Astrophysical Observatory. The ADASS Conference Series provides a forum for scientists and computer specialists concerned with algorithms, software, and operating systems that deal with the acquisition, reduction, and analysis

of astronomical data. The program includes invited talks, contributed papers, display sessions, and computer demonstrations, as well as user group meetings and special interest meetings (“BOFs”). These activities aim to encourage communication between software specialists and users, and also to stimulate further development of astronomical software and systems. For further details see the ADASS X Web page at <http://hea-www.harvard.edu/ADASS/>.

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For further information about the IRAF project, please see the IRAF Web pages at <http://iraf.noao.edu/> or send e-mail to [iraf@noao.edu](mailto:iraf@noao.edu). The ‘adass.iraf’ newsgroups (available on USENET or via a moderated mailing list to which you can subscribe by filling out a form on the IRAF Web page) provide timely information on IRAF developments and are available for the discussion of IRAF-related issues.

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### *How to Get NOAO Proposal Information*

The Web: <http://www.noao.edu/gateway/propinfo.html>  
Questions: [noaoprop-help@noao.edu](mailto:noaoprop-help@noao.edu)  
To e-mail a staff member: [first initial & last name@noao.edu](mailto:first initial & last name@noao.edu)

*2000B Observing Request Statistics  
August 2000-January 2001*

*S U M M A R Y*

<i>CTIO Telescopes</i>	4-m	1.5-m	YALO	0.9-m	SCHM
No. of requests	135	43	13	22	6
No. of nights requested	437	230	119	147	46
No. of nights available*	129	132	31	113	81
Oversubscription	3.39	1.74	3.84	1.30	0.57
Average request	3.24	5.34	9.16	6.68	7.67

<i>KPNO Telescopes</i>	4-m	WIYN	2.1-m	CF	0.9-m
No. of requests	112	43	54	18	9
No. of nights requested	350	121	250	133	53
No. of nights available*	128	58	155	150	65
Oversubscription	2.74	2.09	1.61	0.89	0.82
Average request	3.13	2.81	4.62	7.39	5.89

<i>Gemini, HET, and MMT Telescopes</i>	GEM-N	HET	MMT
No. of requests	78	14	8
No. of nights requested	111	29	18
No. of nights available*	18	8	14
Oversubscription	6.33	3.62	1.30
Average request	1.24	2.07	2.19

\* The number of nights available is approximate until engineering time assignments have been allocated.

Note: For more detailed information, please e-mail [catyp@noao.edu](mailto:catyp@noao.edu).