



## Gemini Observing Opportunities for Semester 2007B

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The NOAO Gemini Science Center (NGSC) encourages the US community to take advantage of Gemini observing opportunities for semester 2007B (1 August 2007 – 31 January 2008). US Gemini observing proposals are submitted to and evaluated by the NOAO Time Allocation Committee (TAC).

The formal Gemini “Call for Proposals” for 2007B will be released on or about 1 March 2007, with a US proposal deadline of Monday, 2 April 2007 (since the nominal 31 March deadline is on a Saturday). As this article is prepared well before the release of the Call for Proposals, the following list of instruments and capabilities are only our expectations of what will be offered in semester 2007B. Please watch the NGSC Web page ([www.noao.edu/usgp](http://www.noao.edu/usgp)) for the Gemini Call for Proposals, which will list clearly and in detail the instruments and capabilities that will be offered.

NGSC anticipates the following instruments and modes on Gemini telescopes in 2007B:

### Gemini North:

- Near-infrared Integral Field Spectrometer (NIFS).
- Near Infra-Red Imager (NIRI) and spectrograph with both imaging and grism spectroscopy modes.
- Altair adaptive optics (AO) system in Natural Guide Star (NGS) mode, as well as in Laser Guide Star (LGS) mode. LGS science verification (SV) runs are taking place in 2007A and LGS full science mode will be offered in 2007B, contingent on the success of these runs. Altair can be used with NIRI imaging and spectroscopy and with NIFS IFU imaging and spectroscopy, as well as NIFS IFU spectral coronagraphy.
- Michelle, mid-infrared (7-26 micron) imager and spectrometer, which includes an imaging polarimetry mode.
- Gemini Multi-Object Spectrograph (GMOS-North) and imager. Science modes are multi-object spectroscopy (MOS), long-slit spectroscopy, integral-field unit (IFU) spectroscopy and imaging. Nod-and-shuffle mode is also available.
- All of the above instruments and modes are offered for both queue and classical observing. Classical runs are offered only to programs that are three nights or longer in length.
- Time trades will allow community access to the high-resolution optical spectrograph, HIRES, on Keck, as well as to the Suprime-Cam wide-field imager and the infrared imager and spectrograph (MOIRCS) on Subaru.

### Gemini South:

- Gemini Near Infra-Red Spectrograph (GNIRS).
- Thermal-Region Camera Spectrograph (T-ReCS) mid-infrared (2-26 micron) imager and spectrograph.
- Gemini Multi-Object Spectrograph (GMOS-South) and imager. Science modes are multi-object spectroscopy (MOS), long-slit spectroscopy, integral-field unit (IFU) spectroscopy and imaging. Nod-and-shuffle mode is also available.

- All modes for GMOS-South, GNIRS, and T-ReCS are offered for both queue and classical observing. Classical runs are offered only to programs with a length of three nights or longer.

Detailed information on all of the above instruments and their respective capabilities is available at [www.gemini.edu/sciops/instruments/instrumentIndex.html](http://www.gemini.edu/sciops/instruments/instrumentIndex.html).

The percentage of telescope time devoted to science program observations in 2007B is expected to be greater than 90 percent at Gemini North and greater than 75 percent at Gemini South.

We remind the US community that Gemini proposals can be submitted jointly with collaborators from other Gemini partners. An observing team requests time from each relevant partner. Multi-partner proposals are encouraged because they access a large fraction of the available Gemini time, thus enabling larger programs that are likely to have substantial scientific impact. Please note that all multi-partner proposals must be submitted using the Gemini Phase I Tool (PIT).

Efficient operation of the Gemini queue requires that it is populated with programs that can effectively use the full range of observing conditions. Gemini proposers and users have become increasingly experienced at specifying the conditions required to carry out their observations using the on-line Gemini Integration Time Calculators (ITCs) for each instrument.

NGSC reminds you that a program has a higher probability of being awarded time and of being executed if ideal observing conditions are not requested. The two conditions that are in greatest demand are excellent image quality and no cloud cover. We understand the natural high demand for these excellent conditions, but wish to remind proposers that programs that make use of less than ideal conditions are also needed for the queue.

There is continuing need for proposals that can be run under the poorest conditions. To help fully populate the queue, a category of “Poor Weather” proposals has been established. Poor weather programs may be submitted for any facility instrument; for these proposals, neither the PI nor the partner country will be charged for any time used. For additional information, please see the link at [www.gemini.edu/sciops/ObsProcess/ObsProcCfP\\_background.html](http://www.gemini.edu/sciops/ObsProcess/ObsProcCfP_background.html).

NOAO accepts Gemini proposals via the standard NOAO Web proposal form and the Gemini PIT software. We note to proposers who plan to use the PIT that NOAO offers a tool that allows one to view how their PIT proposal will print out for the NOAO TAC (please see [www.noao.edu/noaoprop/help/pit.html](http://www.noao.edu/noaoprop/help/pit.html)).

Feel free to contact me ([vsmith@noao.edu](mailto:vsmith@noao.edu)) if you have any questions about proposing for US Gemini observing time.

# Avoid Fear and Loathing in January: Prepare your Gemini Phase II Plan at the AAS Meeting

*Ken Hinkle & Dick Joyce*

All users granted time on the Gemini telescopes must complete a Phase II observing plan. The Phase II plan is a script executed at the telescope by the Observing Tool (OT) to carry out the observations. All Gemini programs, both queue and classical, are carried out by the OT and must therefore have an associated Phase II plan.

Nevertheless, completing a Phase II plan can be arduous and requires significant attention to detail to ensure that every aspect is correct. One of the functions of the NGSC is to check all of the US Phase II submissions. Gemini performs an additional check, all in an effort to eliminate errors that could result in slow or improper execution of programs at the telescope.

Principal Investigators granted time in semester “A” can get help completing their Phase II plans at the January meetings of the American Astronomical Society (AAS). NGSC has a booth outfitted with high-speed Internet access at every winter AAS meeting, and our staff is eager to assist users with this process. The OT has a number of visual features that are much easier to demonstrate in person.

At the January 2007 AAS meeting, about ten teams came to the NGSC booth to either prepare their Phase II plans or seek advice. We plan to have an expanded space at the AAS meeting next January, and encourage all US Gemini users to meet with us. Working on Phase II plans with the help of our staff at the AAS meeting affords the user an opportunity to receive immediate advice and complete this required task as quickly and painlessly as possible.



At the January 2007 AAS meeting in Seattle, NGSC staff member Tom Matheson shows Marcel Agüeros (Columbia University) how to set up the Phase II for his 2007A program.

Since most Gemini observations are made in queue mode, the Phase II plan is the only link most users have to the actual observations. In queue mode, each science target is observed at an optimum time subject to the constraints specified in the proposal. As a result, a science program will be broken into groups that can be observed at any one time. Typically, a program will be observed in pieces throughout the semester by different Gemini observers who will not know the user or the details of their program. The observations at the telescope will therefore be carried out exactly as defined in the Phase II plan.

Gemini has provided several sets of instructions to help users prepare their Phase II plan. The Web site [www.gemini.edu/sciops/ObsProcess/ObsProcPh2Index.html](http://www.gemini.edu/sciops/ObsProcess/ObsProcPh2Index.html) contains a tutorial on using the OT for Phase II preparation. Many of the instrument descriptions provide further details as well as “Library Examples” — templates that can be copied into your Phase II plan to greatly simplify the process. Click on one of the instruments on [www.gemini.edu](http://www.gemini.edu) and follow the links to these templates.



NGSC staff member Bob Blum follows the Phase II progress of Sean Brittain (Clemson University) at the January 2007 AAS meeting. Here they are identifying guide stars using the image editor of the Observing Tool.

## bHROS May Move from Gemini to SALT



Since the bench-mounted High Resolution Optical Spectrograph (bHROS) was first offered by Gemini in semester 2006A, the demand for the instrument has been low – bHROS has never met the minimum time required to keep it scheduled. Several new instruments will be commissioned at Gemini South over the next two years. The pressure from these instruments makes it unlikely that bHROS would be scheduled in the future.

As a result of this low demand, the Gemini board asked the observatory to consider a proposal from the South African Large Telescope (SALT) to loan bHROS to them in exchange for telescope time. This would not only benefit SALT, it would also allow continued access to high-resolution optical spectroscopy for the Gemini community. Gemini is currently negotiating such an agreement with SALT.

–Katia Cunha

## GEMINI SCIENCE 2007

**Gemini Science Meeting – June 11-13**

**Gemini Users Meeting – June 14**

**Gemini/National Offices Staff Meeting – June 15**

**Foz do Iguaçu, Brazil**

Gemini Science 2007 will highlight recent science results from the Gemini North and South telescopes, and will include talks about future Gemini instruments and software development.

Don't miss this opportunity to learn about Gemini's scientific productivity and meet fellow Gemini users – and visit the spectacular Iguaçu Falls. There is no registration fee for the conference. You may register and make hotel reservations online via the conference Web site ([www.lna.br/~gsm2007/](http://www.lna.br/~gsm2007/)).

**Registration Deadline – April 10, 2007**

Travel Tip: Domestic airline service to Foz do Iguaçu is readily available from Sao Paulo (airport code GRU) and Rio de Janeiro (airport code GIG), the major points of entry into Brazil.

# NGSC Instrumentation Program Update

Verne Smith & Mark Trueblood

The NGSC Instrumentation Program continues its mission to provide innovative and capable instrumentation for the Gemini telescopes in support of frontline science programs. This article gives a status update on Gemini instrumentation being developed in the US, with progress since the December 2006 *NOAO/NSO Newsletter*.

## NICI

*The Near Infrared Coronagraphic Imager (NICI) will provide a 1- to 5-micron dual-beam coronagraphic imaging capability on the Gemini South telescope. Mauna Kea Infrared (MKIR) in Hilo is building NICI, under the leadership of Doug Toomey.*

After arriving at the Gemini Hilo Base Facility, NICI was thoroughly inspected by the MKIR team. NICI then underwent a series of flexure tests and interface testing with Gemini software systems. All tests were passed, after which the instrument was crated for transport and shipped to Cerro Pachón.



Figure 1. NICI arrives at the Gemini South telescope on Cerro Pachón.



Figure 2. NICI in the Gemini South Instrument Lab.

NICI arrived at Gemini South as shown in figure 1, and is being checked out in the instrument lab prior to commissioning as shown in figure 2.

As of the end of December, MKIR reports that 99 percent of the work toward final acceptance of NICI has been completed.

## FLAMINGOS-2

*FLAMINGOS-2 is a near-infrared multi-object spectrograph and imager for the Gemini South telescope. FLAMINGOS-2 will cover a 6.1-arcmin-diameter field at the standard Gemini f/16 focus in imaging mode, and will provide multi-object spectra over a 6.1 x 2-arcmin field. It will also provide a multi-object spectroscopic capability for Gemini South's multi-conjugate adaptive optics system. The University of Florida is building FLAMINGOS-2, under the leadership of Principal Investigator Steve Eikenberry.*

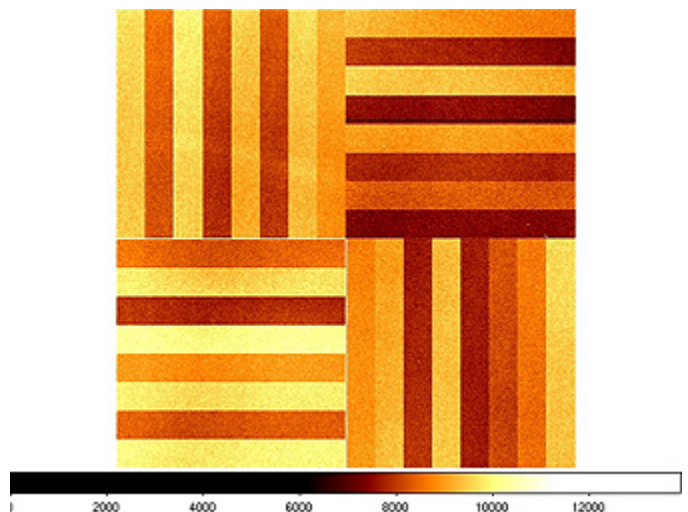


Figure 3. Warm readout of the Flamingos-2 Science Grade Hawaii-2 focal plane array.

The NGSC held a quarterly review of the FLAMINGOS-2 instrument in Gainesville with the University of Florida team on January 12. The instrument continues in the integration and testing phase of the project. Progress was made in solving problems in the electronics and mechanical subsystems, leading to the warm readout of the Science Grade array shown in figure 3. Additional progress was made in addressing problems of image quality and flexure, with efforts now focused on testing these improvements and addressing some mechanical issues. Once these are addressed, work will turn to preparing for the Pre-ship Acceptance Test.

As of December, the University of Florida team reports that 95 percent of the work toward final acceptance of FLAMINGOS-2 has been completed.

# NGSC Booth at the 2007 AAS Meeting in Seattle

The NOAO Gemini Science Center is an active participant in the winter meetings of the American Astronomical Society (AAS). NGSC staff members attend the meeting and staff a booth to meet with you and answer your questions—a major part of our mission as the gateway to Gemini for US astronomers. Featured information includes guidance on how to apply for time on the Gemini telescopes, details

about currently available instrument capabilities, and tips on the Phase II process, including one-on-one tutorials.

Brochures are available on the Gemini instruments, the Gemini Science Archive, and how to propose for Gemini time. Look for us at the January 2008 AAS meeting in Austin, Texas.



Snapshots from the NGSC booth at the January 2007 AAS meeting in Seattle. Top right, from left to right: Aaron Grocholski (University of Florida) and Verne Smith (NGSC); Malcolm Hicken (Harvard University) and Tom Matheson (NGSC); Sean Brittain (Clemson University) and Katia Cunha (NGSC). Bottom row, from left to right: Edo Berger (Carnegie Observatories), Alicia Soderberg (California Institute of Technology), and Tom Matheson (NGSC); Doug Welch (McMaster University), Verne Smith (NGSC), David Sprayberry (NOAO) seated in background, Bob Blum (NGSC), and Phil Puxley (National Science Foundation) with back to camera; and a potential Gemini user browsing NGSC-produced instrument brochures.