Gemini Observatory: Exploring The Universe From Both Hemispheres

Semester 2010B Call For Proposals

Gemini Observatory invites its community to propose scientific investigations for the 2010B semester, 1 August 2010 - 31 January 2011. The Call is open to all partners.

The submission deadline is WEDNESDAY MARCH 31 2010. Applications should be submitted via your national Gemini proposal process. Submission times and other details vary by partner; please consult your National Gemini Office pages for more information. Multi-partner joint proposals should be submitted by the deadline of the partner country to which the Principal Investigator is affiliated.

The purpose of this page is to highlight the most relevant information for the 2010B call. Significant additional information is contained on supporting pages; users are encouraged to follow the links for more detailed information. If hardcopy is preferred, the primary pages are available as a single pdf document.

Highlights for 2010B

General
Relevant milestones for 2010B can be found in the 2010B schedule. The deadline for Phase I submission is **March 31 2010** (Poor weather and Director's Discretionary Time proposals are accepted at any time via the Phase I Tool), and for successful proposals the Phase II submission deadline is **July 12th 2010.** Both queue and classical Phase IIs must be submitted by this deadline.
Target accessibility limits will be imposed, so as not to bias the queue at the start or end of the semester. The target accessibility limits for 2010B are, for **Gemini North 17 < RA < 13.5 and -37 < dec < +79, and for Gemini South 16 < RA < 12 and -89 < dec < +28**. There are additional constraints if a program requires unrestricted access (e.g. MOS observations requiring pre-imaging, long observations or observations with strict constraints), and also for LGS programs at Gemini North.
In 2010B instrument access to ports is complex at both telescopes, due to planned engineering, instrument upgrades and commissioning. Details are given in the telescopes sections below. Although **this Call does not restrict RA availability for any of the instruments, it is expected that access will need to be restricted once the engineering schedule is known and the demand is determined** at the International Time Allocation Committee meeting.
The community should note that the Observatory requires proposals which **use the full range of observing conditions**. This includes proposals that can use cloudy CC90 conditions, which implies a loss of signal of between 30% (CC70) and a factor of 6.
The Phase I Tool (PIT) is updated for 2010B; See the PIT page for downloads and important information. **Starting in 2010B word limits will be imposed for the abstract, science and technical justification sections for PIT submissions to all partners. The limits are 200, 1000 and 1000 words respectively.**
Gemini North
It is expected that 85% of the semester will be available for science. This amounts to 156 nights and includes 12 nights for GNIRS science verification (SV) and 1.5 nights for demonstration science with the

upgraded GMOS-N. These nights are distributed across the partnership. A list of instruments and capabilities is given below.

A later call will be made for SV proposals for GNIRS.

GMOS-North is expected to be available with new red-sensitive CCDs from 1 December 2010. Proposals are welcomed which can take advantage of the improved red response, and the new Z and Y filters, for targets with 2 < RA < 13.5. Proposals for which the improved red response is necessary should not be submitted for targets with 17 < RA < 2. The Integration Time Calculator will be available for both the new and old detectors. Time requests for targets with 17 < RA < 2 should be based on the old detectors, and those for targets with 2 < RA < 13.5 should be based on the new detectors. The instrument will be unavailable for a four week period during the detector upgrade.

Michelle will most likely only be available for two short periods during the semester, depending on demand.

Gemini South

It is expected that 76% of the time will be available for science use on Gemini South in 2010B. This amounts to 140 nights, and includes 18 nights of NICI campaign science. These nights are distributed across the partnership. A list of instruments and capabilities is given below. Due to the need to balance the queue, and the traditionally high demand for GMOS-S dark time programs, bright time programs on Gemini South are particularly encouraged.

The telescope will be shut down for 24 nights for mirror coating, probably during September to October 2010.

Phoenix and T-ReCS may be unavailable late in the semester (not before November 2010) due to MCAO commissioning.

NICI, the AO-fed Near-Infrared Coronagraphic Imager, will be available to the community in 2010B in the L band, on a shared risk basis. The M band is not useful due to saturation when using the broadband filter. Note that the good observing conditions required for NICI are much more likely in the second half of the semester. See below for other restrictions.

Exchange

Up to 5 bright/gray nights of classical time are available with the **HIRES** optical spectrograph on Keck. The requested nights must be within the following **windows with a minimum of 1 and a maximum of 2 nights in any one window: August 17 - 30, October 16 - 27 and December 14 - 25.** Proposals should be submitted via the normal Gemini process. All proposers for Keck time must also complete the Keck cover page. Email this page to your NTAC chair. *[more information]*

5 to 10 classical nights are available on Subaru with **COMICS** (mid-infrared camera and spectrograph), **FOCAS** (optical faint object camera and spectrograph), **HDS** (optical high dispersion spectrograph), **IRCS** (infrared camera and spectrograph, with Natural Guide Star Adaptive Optics capability), **MOIRCS** (near-infrared imager and multi-object spectrograph) and **Suprime-Cam** (wide field optical imager). The Subaru nights will be distributed across bright, grey and dark periods with typically 2 or 3 nights in each of these moon phases, depending on the total number of nights allocated. **A minimum of 1 and a maximum of 4 nights can be requested in the following windows only:**
bright - October 17 - 26 or December 16 - 24,
grey - December 11 - 15,
dark - November 2 - 8 or December 31 - January 6.
The final schedule is dependent on allocation and instrument availability. Note that Subaru may be closed between August and September. Proposals should be submitted via the normal Gemini process. *[more information]*

Additional Information

Details of the capabilities available at each Gemini telescope are given below. Please see the page of supporting information for additional general information.

Gemini North: Facilities

- All instruments are offered in queue and classical mode, except for Laser Guide Star AO which is queue mode only.
- Facility instruments:
  - GMOS North **- 0.36-1.10 micron imager and spectrograph:** imaging and long-slit, multi-object and integral field spectroscopy. 5σ one hour point source sensitivities are approximately R=26 for imaging and R=21-23 for spectroscopy.
  - NIRI **- 1-5 micron imager and low-resolution spectrograph:** imaging and spectroscopy fed with the direct or AO-corrected beam. 5σ one hour point source sensitivities are approximately K=23 for imaging and K=18 for spectroscopy.
  - NIFS **- 0.95-2.40 micron integral field unit spectrograph:** IFU spectroscopy fed with the direct or AO-corrected beam. 5σ one hour point source sensitivities are approximately K=18.7.
  - Altair **- facility AO system:** for use with NIRI (except M band imaging and L & M band spectroscopy) and NIFS.
    - Natural Guide Star AO: Traditional adaptive optics guiding on a nearby star.
    - See the Laser Guide Star AO web pages for important performance information and restrictions. Note that LGS observations must specify "Laser guide star" in the AO resources section in the PIT, and must request Cloud Cover = 50% and Image Quality = 70%. Faint tip tilt stars will also require darker skies: 17.5 < R < 18 needs SB=80%, 18 < R < 18.5 needs SB=50%.
  - Michelle **- 7-26 micron spectrograph and imager:** imaging and R=100-3000 and echelle spectroscopy; imaging polarimetry is also available. 5σ one hour point source sensitivities are approximately N=11 for imaging and N=6-9 for spectroscopy.

• See the target accessibility page for important information regarding instrument availability and a plot of accessible RA and Declination. **For Semester 2010B targets must be limited to 17 < RA < 13.5, and -37 < dec < +79,** the LGS system has a stricter elevation constraint of >40 degrees.

Gemini South: Facilities

- All instruments are offered in queue and classical mode.
- Facility instruments:
  - GMOS South **- 0.36-0.95 micron imager and spectrograph**: imaging and long-slit, multi-object and integral field spectroscopy. 5σ one hour point source sensitivities are approximately R=26 for imaging and R=21-23 for spectroscopy. GMOS South has slightly better sensitivity in the UV and blue than GMOS North.
  - NICI **- 1-5 micron dual-channel coronagraphic imager:** In 2010B NICI is offered for community use for both coronagraphic and non-coronagraphic imaging. The L band is

available on a shared risk basis. AO guiding on extended targets (up to 0.8") is available on a shared risk basis. For coronagraphic imaging the occulted target should also be the AO guide target. The Campaign Targets are not available for community NICI observations. Constraints must be at least as good as Cloud Cover = 50% and Image Quality = 70%.

- T-ReCS **- 8-26 micron imager and spectrograph:** imaging and moderate resolution (R=100 and R=1000) spectroscopy. 5σ one hour point source sensitivities are approximately N=11 for imaging and N=8 for spectroscopy .

- Visitor instruments:
  - Phoenix **- 1-5 micron high spectral resolution (R~50000 - 75000) spectrometer**. 5σ one hour point source sensitivities are approximately K=12.5.
- See the target accessibility page for important information regarding instrument availability and a plot of accessible RA and Declination. **For Semester 2010B targets must be limited to 16 < RA < 12, and -89 < dec < +28.**

Questions and Answers

All questions concerning proposals, or any other subject, should be made using the Gemini HelpDesk. This web-based system will send the request to your National Gemini Office staff in the first instance who will then escalate it to Gemini staff if necessary.

Comments and suggestions on the format and content of this page and supporting pages are welcome, and should be sent to Sandy Leggett.

Gemini Observatory: Exploring The Universe From Both Hemispheres

Semester 2010B Time Distribution

Gemini North: Time Availability and Distribution

A minimum of 85% of the time will be available for science use on Gemini North in 2010B. This amounts to 156 nights and includes 12 nights for GNIRS science verification (SV) and 1.5 nights for demonstration science with the upgraded GMOS-N. The remaining time will be used for observatory maintenance tasks, and the planned commissioning of GNIRS and the new CCDs for GMOS-N; any unused engineering time will be returned to science. Note that historically around 5% of each semester's science time is used to complete highly ranked programs from the previous two semesters to which the ITAC granted rollover status. The number of hours allocated to each partner in 2010B is given in the following table.

Partner	Estimated Hours Available
US	608
UK	263
Canada	143
Australia	59
Argentina	22
Brazil	60
Univ. of Hawaii (host)	157
Gemini Staff	117
Total	1429 (=143n)

Gemini South: Time Availability and Distribution

A minimum of 76% of the time will be available for science use on Gemini South in 2010B. This amounts to 140 nights, and includes 18 nights of NICI campaign science. The remaining time will be used for observatory maintenance tasks, and Flamingos-2 and MCAO commissioning activities. Any unused engineering time will be returned to science. Note that historically around 5% of each semester's science time is used to complete highly ranked programs from the previous two semesters to which the ITAC granted rollover status. The number of hours allocated to each partner in 2010B is given in the following table.

Partner	Estimated Hours Available
US	526
UK	222

Canada	117
Australia	60
Argentina	22
Brazil	61
Chile (host)	108
Gemini Staff	103
Total	1219 (=122n)

Time Adjustments

To maintain overall balance amongst the partnership, the values shown above for both Gemini North and South have been adjusted from the nominal partner shares as a result of actual time charged through 2009B. The time allocations also include a purchase by Brazil of 35 hours of UK time at each telescope. The values shown in the tables above were recommended by the Operations Working Group in February 2010. The number of nights is approximated by int(hours/10).

Gemini Observatory: Exploring The Universe From Both Hemispheres

2010B Instrument Availability and Target Accessibility

This page provides best estimates, at the time of the Call for Proposals, of instrument availability and target (RA, dec) restrictions for 2010B.

Instrument Changes

As there are more instruments than the number of available ports on each telescope, instrument swaps will be required. Therefore not all instruments will be available for the entire semester. When possible instrument swaps will be scheduled to minimize impact on the queue and instrument swaps will be driven by demand. Hence the final schedule will not be made until after the semester programs are known. It may be the case that certain targets or entire programs will not be feasible once the final schedule is determined, at ITAC or thereafter. If an instrument is requested for less than 6% of the Bands 1+2 time, the Observatory reserves the right to limit the RA range available to programs, or to not schedule the instrument. During classical runs, no instrument changes on the Instrument Support Structure are permitted.

In 2010B instrument access to ports is especially complex at both telescopes, due to planned engineering, instrument upgrades and commissioning. Although **this Call does not restrict RA availability for any of the instruments, it is expected that access will need to be restricted once the engineering schedule is known and the demand is determined** at the International Time Allocation Committee meeting.

Gemini North Instrument Availability and Target Accessibility

All instruments are restricted for sky visibility as described in the Table and Figure below. Observations requiring the Laser Guide Star (LGS) system are further restricted by the limitation that the LGS must be used at or above 40 degrees elevation. How this translates into RA and dec restrictions is indicated in the Table. In addition in 2010B, GMOS-North is expected to be unavailable for a four week period for the detector upgrade. Michelle will most likely only be available for two short periods during the semester, depending on demand.

	Accessible	Restricted**	Inaccessible
Declination, non-LGS	-30d to +73d	-37d to -30d, +73d to +79d	< -37d and > +79d
Declination, LGS	-22d to +65d	-27d to -22d, +65d to +68d	< -27d and > +68d
Right Ascension, non-LGS	19h to 11h	17h to 19h, 11h to 13.5h	13.5h to 17h
Right Ascension, LGS	20h to 10h	18h to 20h, 10h to 12.5h	12.5h to 18h

**GMOS MOS programs requiring pre-imaging should not have targets in this region. Programs with targets in this region should not require a large amount of time, or have strict timing or observing constraints.

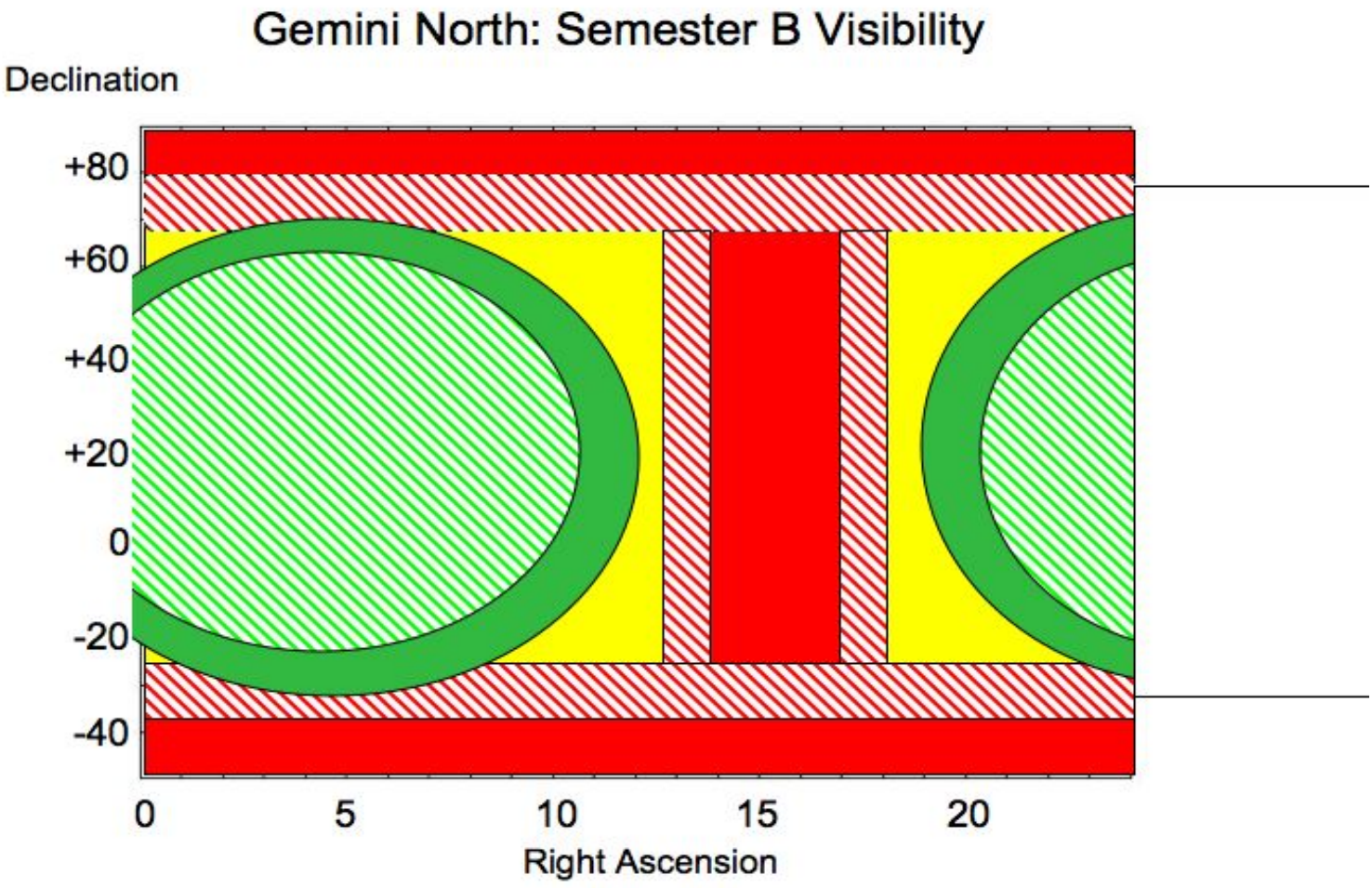

Figure 1: Schematic representation of target accessibility at Gemini North during semester 2010B. Green regions offer unrestricted access, red regions are inaccessible. Hatched areas indicate the more restricted LGS regions. The yellow region is possible, but restricted. See text, and values in the Table above.

Gemini South Instrument Availability and Target Accessibility

All instruments are restricted for sky visibility as described in the Table and Figure below. In addition in 2010B, Phoenix and T-ReCS may be unavailable late in the semester (not before November 2010) due to MCAO commissioning. The telescope will be shut down for 24 nights for mirror coating, probably during September to October 2010.

	Accessible	Restricted**	Inaccessible
Declination	-87d to +22d	-89d to -87d, +22d to +28d	< -89d and > +28d
Right Ascension	19h to 9h	16h to 19h, 9h to 12h	12h to 16h

**GMOS MOS programs requiring pre-imaging should not have targets in this region. Programs with targets in this region should not require a large amount of time, or have strict timing or observing constraints.

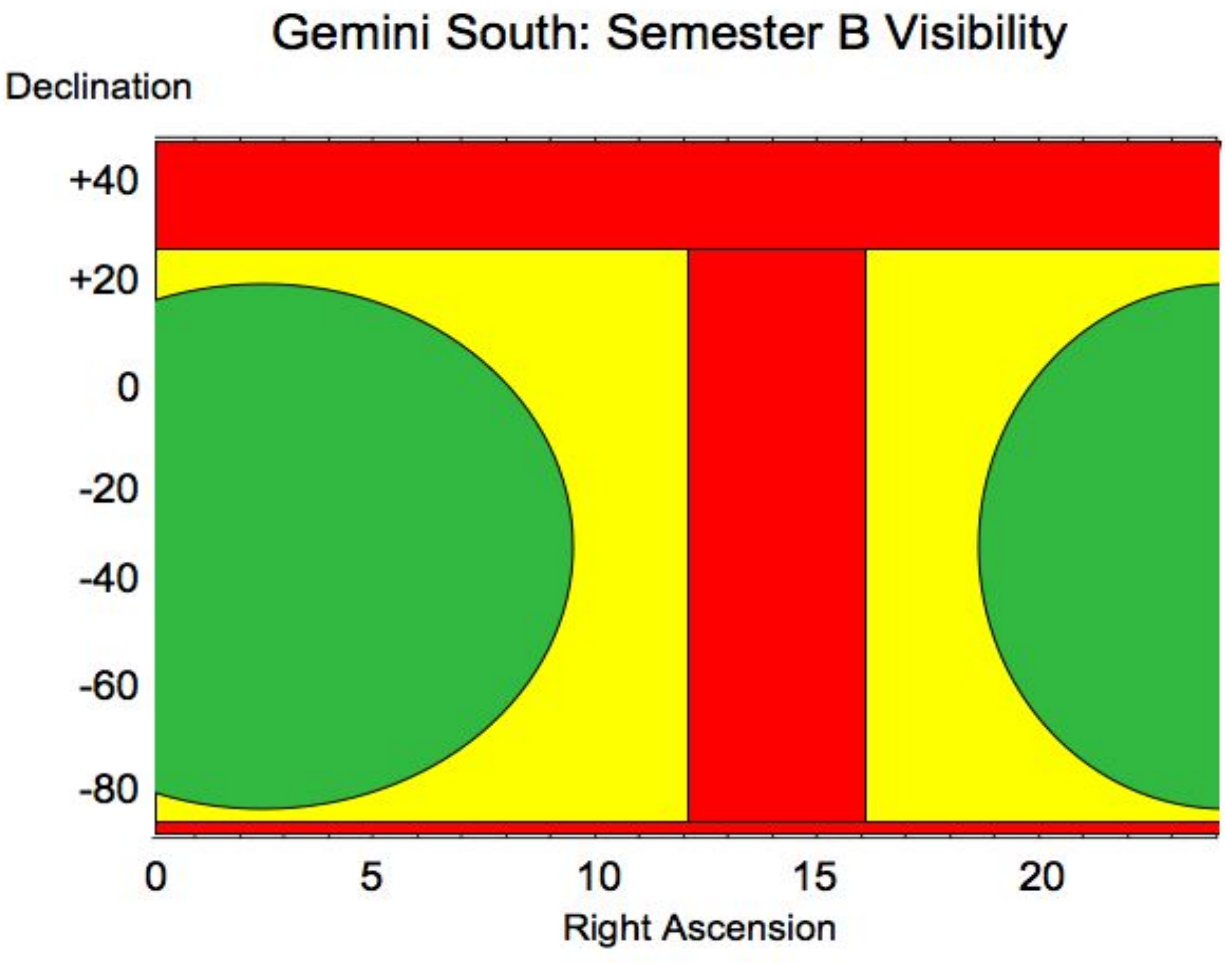

Figure 2: Schematic representation of target accessibility at Gemini South during semester 2010B. Green regions offer unrestricted access, red regions are inaccessible. The yellow region is possible, but restricted. See text, and values in the Table above.

Gemini Observatory: Exploring The Universe From Both Hemispheres

Semester 2010B Important Dates

Key dates and events in the proposal process are shown below. The Phase I and Phase II deadlines are highlighted.

Date	*Event*	*Comments*
31 March 2010	**Proposal deadline**	**Proposals received by National Gemini Offices (NGOs) - see partner pages.**
Set by partner	NTAC meetings	Separate scientific and technical assessments by each Gemini partner ("National TACs").
On or before 13 May 2010	E-transmission	Electronic transmission of proposals to Gemini from NTACs
26-27 May 2010	ITAC	International Time Allocation Committee meets to resolve issues and recommend programs.
7 June 2010	Final queue/schedule, and ITAC & Gemini feedback to NGOs	After approval by Gemini Director.
14 June 2010	**10B schedule and Phase IIs available**	**2010B OT released, "skeletons" available.**
2 July 2010	Phase II reviews start	The response time is 7 days for checking by NGOs (from "For Review") and by Gemini CSs (from "For Activation").
12 July 2010	**Phase II deadline**	**PI deadline for submission of completed Phase II Programs to National Offices (earlier submission is encouraged).**
26 July 2010	**"For Activation" deadline**	**NGO deadline for submission of completed Phase II Programs to Gemini.**
01 August 2010	Start of semester 2010B	2010B programs may be observed earlier to fill queue nights.

Gemini Observatory: Exploring The Universe From Both Hemispheres

Call for Proposals Supporting Information

This page contains information on the following topics relevant to applying for time on Gemini. The information is general in nature, for details specific to the upcoming semester, please see the current call for proposals.

Time Allocation Process

An overview of the proposal submission and time allocation process is given here. The assessment and ranking of proposals within each partner country will be via National Time Allocation Committees (NTACs) supported by the National Gemini Offices. Assembly of the final semester schedule and queue, definition of scientific ranking bands and resolution of conflicts and joint proposals between partners is done by the International Time Allocation Committee (ITAC).

Submissions to Use Multiple Telescopes

Each observing proposal may request resources from a single telescope only (Gemini North, Gemini South, Keck or Subaru). Proposals for multiple telescopes are no longer permitted, and the Phase I tool will not allow resources from multiple telescopes to be selected. Proposals may include the use of multiple instruments on the same telescope. If a program requires resources from multiple telescopes, separate proposals must be submitted for each telescope; in this case, each proposal should clearly reference the other(s). The proposals will be ranked and scheduled independently. Proposals that can be carried out with either GMOS (note that they have different capabilities) must nevertheless specify one of them; the NTACs or ITAC may make changes.

Queue Rollover

Programs assigned by the ITAC into Band 1 are eligible for rollover into the next semester, for no more than two consecutive semesters, in order to increase the likelihood of program completion. Rollover status will be assigned by the ITAC. Programs with rollover status will automatically be carried forward for up to 2 semesters until their time allocation is exhausted, i.e. PIs need not re-apply if the currently approved allocation is sufficient to reach the science goals of the program. Target of Opportunity programs are not given rollover status. National policies that affect eligibility are defined by the relevant NTAC.

Electronic Submission

All partners support electronic submission of proposals from within the Gemini Phase I Tool (PIT). In the US, submission of non-joint proposals using the NOAO web form continues to be supported. Versions of the PIT are created for each semester, including new features described in PIT Hot News.

Joint Proposals

If you submit the same proposal to several partner countries a "joint proposal" you must do so using PIT. The PIT software, and backend servers installed at each National Office, allow automatic ("one-click") submission of the same proposal to multiple partners. Joint proposals should be submitted by the deadline of the partner country to which the Principal Investigator is affiliated.

Under-Utilized Instruments

Community demand is a critical factor in determining instrument availability. Each instrument introduces significant overhead to the Observatory, and access to instrument ports is at a premium. If an instrument is requested for less than 6% of the Bands 1+2 time, the Observatory reserves the right to limit the RA range available to programs, or to not schedule the instrument.

Rapid Response or Target of Opportunity programs

We continue to encourage Target of Opportunity (ToO) programs (formerly called "Quick Response"), intended to allow observation of targets that cannot be specified in advance but which have a well defined **external trigger** (e.g., Supernovae or Gamma Ray Bursts which will be identified throughout the observing semester by non-Gemini programs). "ToO" mode may be requested with any facility instrument. Proposals for ToO mode should be made via the normal proposal process and must select the type of trigger in the PIT and summarise the *trigger event* (e.g. identification of a target brighter than a pre-determined threshold) in the proposal abstract. *ToO covers trigger types from several months to minutes in response time.* Two types of ToO triggers are defined: "Rapid Response" and "Standard" which differ by response time. Rapid response programs must be allocated time in Band 1. ToO programs will not be given rollover status.

Gamma Ray Burst (GRB) programs: in previous semesters many separate proposals for Gamma Ray Burst follow-up studies were submitted to the NTACs and a subset were forwarded to ITAC. As in those semesters, the ITAC and Observatory will seek to combine or otherwise substitute such proposals, e.g. by forming partnerships or time-division strategies, so that only one proposal is active on each telescope at any time. Applicants for GRB studies are strongly encouraged to coordinate their proposals before submission. The Observatory and ITAC reserve the right to form umbrella programs based on the proposals forwarded by the NTACs.

GMOS Mask Definition

Mask making from non-GMOS images for GMOS multi-object spectroscopy (MOS) observations is available, but GMOS pre-imaging is recommended for MOS programs using slits narrower than 1.0" and for programs requiring very long observations of faint targets. If pre-imaging is required, then sufficient pre-imaging time should be included in the proposal. For classical programs, pre-imaging will be scheduled in the queue. Any unused pre-imaging time will be returned to the program.

Poor Weather Proposals

Often the queue contains insufficient proposals for the poorest conditions, despite the best efforts of the National TACs to pass on a balanced package of proposals to Gemini. To encourage submission of more proposals in this category, those with the observing condition constraints specified below will receive special consideration at the TACs. If the programs are ranked lower than band 3 they may be placed in a "Poor Weather Queue" (Band

4) and neither the PI nor partner country will be charged for any time used. Note however that poor weather programs are lower in priority than scientific ranking band 3. Poor weather programs may be submitted for any facility instrument but the observing constraints *must* match one of the following:

- Image Quality of "any" and Cloud Cover of 70%-ile or worse (non-photometric)
- Cloud Cover of 90%-ile (typically 2 magnitudes of cloud cover and unusable in the mid-IR) and any other combination of conditions

Water Vapour constraints for all poor weather proposals need to be set to "any". The Sky Background constraint can be specified and it is acceptable for these programs to request dark time.

Poor weather programs can now be submitted at any time in the semester. Use the Phase I tool to submit your proposal, selecting "Poor weather" from the drop down menu in the Submit tab. Such programs will be automatically placed in the Band 4 "Poor Weather Queue".

Exchange Time

Gemini Observatory encourages fruitful exchanges with other major observatories in order to expand the instrument capabilities available to the Gemini community. At present, the Observatory has two exchange programs in place. The first agreement is an exchange of classical nights for HIRES time on the Keck I telescope in exchange for classical nights with NIRI and Michelle on Gemini North or T-ReCS on Gemini South. See the Keck time application page for information on applying for the Gemini time through Keck. The second agreement is for classical nights on Subaru in exchange for classical nights with Gemini. The Subaru instruments currently available to the Gemini community are COMICS, HDS, FOCAS and IRCS, MOIRCS and Suprime-Cam. In exchange, the Subaru community has access to both GMOS instruments (North and South), Michelle, NICI, NIRI, NIFS and T-ReCS. See the Subaru call for proposals for more information on applying for Gemini time through Subaru. The details of the amount of time currently available and other restrictions are provided in the current call for proposals.

Target Information

Time-specific (including periodic monitoring and follow-up) programs may be accepted on a best-efforts basis. Proposers should specify these time constraints in the PIT. Note that the instrument scheduling may impose additional restrictions on this class of programs.

All observations require the use of one wavefront sensor (WFS) star for fast guiding, primary mirror active optics control and/or as an adaptive optics wavefront reference source. The specific requirements for each instrument are given in the relevant science instrument web pages. As the technical feasibility of proposals relies in part on the availability of WFS stars, all proposals with well-defined targets must include suitable WFS stars. Proposals to observe non-sidereal objects should indicate the likely availability of WFS stars in the technical justification but are not required to supply specific stars. Target of Opportunity programs do not need to define WFS stars. Non-sidereal tracking is available for all instruments. Non-sidereal tracking with GMOS is fully supported with the peripheral wavefront sensors and partially supported with the OIWFS.

Duplicate Observations

Proposers should check their observations against the Gemini Science Archive to ensure that similar or identical observations have not already been executed. The Phase I Tool includes a function to facilitate this. Any duplicate or seemingly duplicate observations should be well-justified in the proposal. The NTACs will consider duplication of existing observations as part of the proposal evaluation. The ITAC evaluates and resolves any duplication of targets (or potential duplication in the case of ToO observations) between proposals from different partner countries.
