



ANNOUNCEMENT OF OPPORTUNITY FOR OBSERVING TIME AT THE GRAN TELESCOPIO CANARIAS



SEMESTER 2012B: September 1st 2012 – February 28th 2013

Submission deadline: **3 April 2012**

GRANTECAN opens a call for observing proposals for Semester 2012B on the 10.4-m Gran Telescopio Canarias (GTC) for the GTC user community. This semester runs from September 1st 2012 until February 28th 2013. GTC time is open for queue-scheduled observing as well as classical visitor-mode observing.

All interested applicants must use the IAC's CAT on-line system for submitting their proposals. This can be found at <http://cat.iac.es/> where also instructions are provided. The deadline for submission is 3 April 2012 at 5pm local time in the Canary Islands. Proposals that are granted time by the respective time allocation committees will be asked to provide detailed observing information in the second phase of the submission process. For a more extensive description of how the observing process at GTC is organized please refer to <http://www.gtc.iac.es/en/pages/observing-with-gtc.php>

1. Available observing time

During semester 2012B scientific operation of the telescope will occupy the majority of the available observing time, but still a significant fraction (some 20%) is expected to be required for ongoing telescope and instrument commissioning work that will preferentially be carried out during bright time. The remaining 80% will be dedicated to programs that are granted time under this call, as well as guaranteed time for instrument builders, time for ESO-GTC programs, and for the CCI International Time. (The target lists for ESO-GTC proposals may be found at <http://www.eso.org/sci/observing/visas/gtc.html>).

We note that the RA band from 10 to 14 hours is occupied by a few large, high-priority programs that have been granted time on the telescope. Hence the competition for time in these RA bands, in particular during dark/grey time and good seeing, will be fierce.

GTC will accept target-of-opportunity override proposals.

2. Instrumentation

Details of the instruments can be found at <http://www.gtc.iac.es/en/pages/instrumentation.php>, including the observing programs for guaranteed time and their reserved targets.

Visiting instruments will not be supported during this semester.

OSIRIS:

The OSIRIS spectrograph and imager for the optical wavelength range will be available in the Nasmyth-B focal station. Observing modes that will be offered are:

- Broad-band imaging
- Tunable filter imaging using the "red" tunable filter
- Long-slit spectroscopy

Fast-photometry and charge-shuffling CCD readout modes, multi-object spectroscopy, and use of the blue-optimized tunable filter are not offered yet.

CanariCam:

This instrument, located in the Nasmyth-A focus, allows imaging and spectroscopy in the mid-IR wavelength range. This semester CanariCam may be requested for regular science programs. However, we note some important limitation in its use. The observing modes offered cover imaging and low-resolution spectroscopy in the 10 and 20 micron bands.

High-resolution spectroscopy, polarimetry and coronagraphy are not offered yet.

We note that due to the fact that the commissioning process is not yet fully completed and analysis of the data is still ongoing, full performance information is not yet available. However, the information available at <http://www.gtc.iac.es/en/pages/instrumentation/canaricam.php> should provide a good baseline for planning observations.

Furthermore, we note that due to functional limitations of the telescope, specifically the absence of correction for fast image motion, diffraction limited performance cannot yet be guaranteed. Therefore potential applicants should expect seeing-limited performance. See also Section 4 for further telescope information.

3. Reserved objects

The science teams of OSIRIS and CanariCam obtain guaranteed observing time. The objects and observing modes planned for their observations on GTC are reserved for the exclusive use by the instrument science teams. Target lists of reserved objects may be found on the instrument web pages at <http://www.gtc.iac.es/en/pages/instrumentation.php>, following the links for OSIRIS and CanariCam.

4. Telescope status

The GTC remains under development and various components and functions still need to be developed and improved. Of particular interest for potential applicants for observing time we mention:

- Non-siderial tracking has not yet been implemented. Hence targets with a large proper motion can normally not be observed.
- The facility for fast guiding, to correct for high-frequency movements of point sources due to atmospheric turbulence and possible vibrations of the telescope, is not yet operational. This particularly affects prospective CanariCam users.
- The chopping secondary unit that is essential when using CanariCam in order to correct for the radiative background is operational but requires further tuning of its performance. Slight trailing of point sources has been observed due to the chopping motion. Users should be aware that image quality may be affected somewhat by the chopping motions of the secondary mirror, although we anticipate that this limitation will disappear in the future.
- The main dome shutter is still limited in its operation, which implies that the telescope beam is vignettted for elevations in excess of 73 degrees.

5. Observing overheads

It is important to make realistic estimates of the observing overheads, both at the time of writing a proposal, as well as when completing the Phase-2 observing definition. As a guideline, for an OSIRIS observation in imaging mode a total overhead of 13 minutes per Observing Block should be accounted for, while for spectroscopy this total overhead increases to about 18 minutes, and for tunable filter imaging to some 23 minutes. In the case of CanariCam, in addition to the overheads

for target acquisition and instrument and telescope setup, which are 10 minutes in the case of imaging and 15 minutes in the case of spectroscopy, there are also overheads associated to the chopping and nodding technique. Such overheads are obtained by multiplying by a factor of 2.7 or 3.1 the on-source time, in the case of imaging and spectroscopy, respectively. Note that these numbers serve as a guide only and may vary according to the detailed definition of the OB.

In the case of the use of the OSIRIS tunable filter as well as CanariCam, for reasons of overall efficiency and since these calibrations are specific for each observing programme, we require that applicants define their night-time calibrations also as Observing Blocks. The time necessary for these calibrations will be charged to the observing program and should therefore be taken into account in the request for time.

See <http://www.gtc.iac.es/en/pages/observing-with-gtc.php> for further details.

6. Telescope Support Model

Observations can be either carried out in *queue-scheduled service mode* by trained observatory personnel as has been customary during the first two years of operation of the GTC, or the PIs may express their preference to execute the observations themselves on specific nights according to a set calendar (*classical visitor mode*). The PI must (i) clearly indicate her/his preference in the proposal form by selecting the appropriate option -“service” or “classical”- in the observing mode box of the proposal form, and (ii) in the case of classical observations define a valid backup program that can be carried out if the observing conditions for the principal program are not met.

In classical visitor mode the PI is expected to be present at the telescope during the observations, although the interaction with the telescope system will mostly be carried out by trained observatory personnel. If the PI cannot be present on the night scheduled for her/his observations she/he may request that a GRANTECAN astronomer carry out the observations.

Queue scheduling provides flexibility in optimizing the science return of the telescope, depending on the atmospheric and technical circumstances each night. Priority is given to the scientifically most highly ranked proposal that is suitable for the observing conditions. In general, proposals with relaxed observing constraints will have a better chance of being completed successfully.

In classically scheduled observations the risk of the weather conditions and technical failures rests with the PI, but it provides the advantage of the PI being able to adapt the observing plan in real time.

GRANTECAN will aim to follow the preference of the PI when drawing up the observing schedule, but no guarantee can be given that all preferences can and will be honored. In particular in case a proposal conflicts with high-priority ESO-GTC programs the proposal will most likely not be scheduled in classical visitor mode.

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