



**ISAAC NEWTON GROUP OF TELESCOPES**  
Roque de Los Muchachos Observatory, La Palma

**ANNOUNCEMENT OF OPPORTUNITY FOR OBSERVING TIME  
IN SEMESTER 2011B: AUGUST 1, 2011 – JANUARY 31, 2012**

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**1. Proposal Submission and Deadlines**

Telescope-time proposals should be submitted directly to the respective time allocation committees (TACs) of the three operating countries, the Netherlands, Spain and the United Kingdom. Proposals that qualify for OPTICON time must be submitted directly to OPTICON (see Section 11, below).

Details on how to submit proposals, including submission deadlines, are given on the web pages of each TAC:

**Netherlands:** [http://www.nwo.nl/nwohome.nsf/pages/NWOP\\_5VVJ3N\\_Eng](http://www.nwo.nl/nwohome.nsf/pages/NWOP_5VVJ3N_Eng)  
**Spain:** <http://www.iac.es/cat/pages/cat-nocturno/en/overview.php>  
**UK:** [http://www.ing.iac.es/Astronomy/observing/patt/PATT\\_Appl.html](http://www.ing.iac.es/Astronomy/observing/patt/PATT_Appl.html)  
**OPTICON:** <http://www.astro-opticon.org/fp7/tna/>

The national identity of a proposal for observing time is defined by the country hosting the institute in which the PI is employed or studying at the time of submission. PIs employed or studying in a Dutch, Spanish or British institute at the time of submission should submit their proposal(s) to the Dutch, Spanish or British TAC respectively. Proposals submitted to a national TAC by a PI based in one of the other operating countries may be assessed by that TAC, or at its discretion, may be passed on to the correct national TAC.

Each of the three national TACs welcomes proposals with PI or co-I(s) employed or studying in countries other than the operating countries. A proposal submitted to a national TAC by a PI employed or studying outside of the operating countries, i.e. an **international proposal**, may be assessed by the national TAC to which it was submitted, or at that TAC's discretion, may be passed to an international TAC comprising members of the three national TACs. Such international proposals must be written in English. However, international proposals that otherwise meet OPTICON's criteria of eligibility, but which are submitted to and awarded telescope time by the national TACs, **do not qualify** for OPTICON financial support.

## 2. Instrumentation in Semester 2011B

For an overview of the current instrumentation at ING, including links to the instrument home pages and contact email addresses of the instrument specialists, see:

<http://www.ing.iac.es/Astronomy/observing/instruments.html>

Please email the relevant instrument specialist directly if you have any technical or operational queries regarding your proposed instrumentation.

### William Herschel Telescope

WHT observing programmes shorter than **one** night are not accepted, unless explicitly agreed in advance by the Director or Head of Astronomy. Applicants are encouraged to submit proposals for large time allocations.

The following facility instruments and detector configurations are available:

Instrument	Detector	Comments
ISIS BLUE	EEV12	
ISIS RED	RED+	Low-fringing, high-QE, red-sensitive CCD
ISIS BLUE and RED	QUCAM2 and 3	L3-CCDs
LIRIS	1kx1k HgCdTe	
ACAM	AUXCAM	2kx4k E2V CCD, 8' unvignetted FoV for imaging
Prime Focus Camera	2xEEV Mosaic	
AUTOFIB2/WYFFOS	2xEEV Mosaic	
NAOMI/INGRID	1kx1k HgCdTe	With natural guide stars only
NAOMI/INGRID/OSCA	1kx1k HgCdTe	With natural guide stars only
NAOMI/OASIS	2kx4k MIT/LL	With natural guide stars only

### Isaac Newton Telescope

INT observing programmes shorter than **one** night are not accepted, unless explicitly agreed in advance by the Director or Head of Astronomy. ING can only support a small number of instrument changes on the INT, and consequently large proposals are strongly encouraged.

The Intermediate Dispersion Spectrograph, IDS, and the Wide Field Camera, WFC, are both offered in 2011B:

Instrument	Detector	Comments
IDS	EEV10	
IDS	RED+2	Low-fringing, high-QE, red-sensitive CCD (shared risks)
WFC	4xEEV	Mosaic may be binned, and CCD 4 windowed (Section 10)

## 3. Support Model

Evening and night-time duty engineer support on the WHT and INT has been withdrawn. However, the WHT telescope operator role has been extended to that of observing support assistant (OSA), with the responsibility of providing full-night, year-round operator and engineering support at the WHT, and limited support for the INT. INT observers should be aware that critical technical problems that occur on weekends or public holidays, and which cannot be solved by the OSA, will not be addressed until the next working day.

Astronomical support continues to be provided until approximately 11pm on the first night of all WHT and INT runs, by staff astronomers at the WHT and by student support astronomers at the INT.

Changes to the configuration of an instrument within an observing run will be accommodated provided they have been explicitly requested in the telescope proposal. Physical changes to instrument configurations, e.g. filter, dichroic and grating changes, must never be carried out by visiting observers, but will be made by ING staff. At the WHT, such changes can also be made during the night by the OSA, but due to its distinct support model, INT instrument configuration changes can only be made on normal work days, when appropriate day-time staff are available to effect the changes. Confirmation of requests for changes to instrument configuration during a run should be communicated to the rostered support astronomer well in advance of the run.

#### **4. Observer Experience**

Inexperienced observers should not come alone to carry out their observations with the WHT or INT, but must be accompanied by a suitably experienced observer.

The WHT in particular hosts a wide range of instrumentation which requires correspondingly diverse techniques for observing and calibration. Visiting observers therefore should also be experienced in the specific observing practices needed for their scheduled run.

Furthermore, it is essential that INT observers have considerable end-to-end observing experience with mid-size telescopes. At the INT visiting observers are responsible for all aspects of operating the telescope from opening the dome in the evening, to operating the telescope and instrumentation throughout the night, to parking the telescope and closing the dome at the end of the night or in the event of deteriorating weather conditions.

#### **5. ISIS**

ING has developed Low-Light-Level CCD systems (commonly known as an L3-CCDs or EM-CCDs) that are available for use on both arms of the work-horse dual-beam optical spectrograph, ISIS. These 1024 x 1024 cameras, QUCAM2 and QUCAM3, provide high-speed spectroscopic capability (to about 10Hz) with very little dead time and essentially zero read noise. This combination provides new and very efficient scientific opportunities for monitoring fast spectral changes in objects such as interacting binaries and in occultations, and for spectroscopy of faint sources. There are various peculiarities associated with the application of this type of detector, and optimising its use depends critically on the scientific goals; further information is available on the ISIS web pages:

<http://www.ing.iac.es/Astronomy/instruments/isis/>

ISIS was fitted recently with an E2V deep-depletion, high quantum-efficiency, exceptionally low-fringing CCD. This CCD, RED+, is now the default CCD on the red arm of ISIS. Details of its performance are available at:

[http://www.ing.iac.es/Astronomy/instruments/isis/isis\\_redplus.html](http://www.ing.iac.es/Astronomy/instruments/isis/isis_redplus.html)

#### **6. LIRIS**

The Long-slit Intermediate Resolution Infrared Spectrograph, LIRIS, built at the [IAC](#), has imaging, imaging polarimetry, long-slit and multi-object spectroscopy and spectropolarimetry modes in the near-infrared (0.9-2.4 microns), and is offered in all five modes in 2011B.

The process of slit-mask preparation, manufacture and integration takes a minimum of eleven weeks, and requires the LIRIS cryostat to be warm. PIs awarded time in multi-slit mode are strongly encouraged to initiate the design of their slit masks on publication of the telescope schedules. Details on the procedures for slit-mask preparation are available at:

[http://www.ing.iac.es/Astronomy/instruments/liris/public\\_liris\\_mos.pdf](http://www.ing.iac.es/Astronomy/instruments/liris/public_liris_mos.pdf)

For further information on LIRIS and its performance please refer to the ING and IAC LIRIS web pages:

<http://www.ing.iac.es/Astronomy/instruments/liris/> and <http://www.iac.es/proyect/LIRIS/>

## 7. ACAM

The recently-commissioned imager/spectrograph for the WHT Cassegrain cluster, ACAM, is offered in semester 2011B. ACAM has 2kx4k deep-depletion, low-fringing, high-QE CCD, and provides high-throughput imaging with a wide range of filters over a field of ~8 arc-minutes in diameter, and low-resolution spectroscopy with a VPH disperser. It is available permanently except when the prime focal station is deployed, and replaces the Auxilliary-Port Imager. Further information is available on the ACAM web pages:

<http://www.ing.iac.es/Astronomy/instruments/acam/>

Most of ING's optical filters can be mounted in ACAM, and a list of ACAM-compatible filters is available from the filter database, which is linked from:

<http://www.ing.iac.es/Astronomy/instruments/acam/imaging.html#filters>

A few of the older ING filters, when used in ACAM, degrade the on-sky image quality – refer to the above page for advice.

## 8. Adaptive Optics

The WHT's adaptive optics (AO) module, NAOMI, is offered with natural guide stars (NGS) only, and observations are carried out in **service mode** by ING staff. The laser guide-star system, GLAS is currently not offered. With NGS, the long-term stability of the deformable mirror has improved significantly since the installation of humidity control in the NAOMI Nasmyth enclosure GRACE. As a consequence, AO corrections are maintained consistently subject to atmospheric conditions, and operational overheads are significantly reduced.

Applicants for AO observations are encouraged to consult the NAOMI instrument home page for more information about individual instruments and about AO performance:

<http://www.ing.iac.es/Astronomy/instruments/naomi/>

## OASIS

The integral field spectrograph, OASIS, is mounted permanently with the AO system in the WHT's AO-dedicated Nasmyth enclosure GRACE. It can be used with or without full AO correction, and is currently offered with 3 spatial and 15 spectroscopic options, i.e. 45 possible configurations for spectroscopy. A dedicated data reduction package, XOasis, is available for the reduction of OASIS data.

For further information on OASIS, including guide star requirements and data reduction, please refer to the web page:

<http://www.ing.iac.es/Astronomy/instruments/oasis/>

## INGRID and OSCA

The infrared imager, INGRID, and the uncooled coronagraph, OSCA, are mounted permanently in GRACE. INGRID can be used with and without full AO correction. For further information on INGRID, including observing overheads and guide star requirements, please refer to the web page:

<http://www.ing.iac.es/Astronomy/instruments/ingrid/>

OSCA is mounted after NAOMI, and can be deployed rapidly in the INGRID beam. It can only be used in combination with INGRID for near infrared (*J, H, Ks* or narrow-band) imaging observations; it cannot be used with OASIS. For further information on OSCA please refer to the web page:

<http://www.ing.iac.es/Astronomy/instruments/osca/>

## AO Backup Proposals

In order to provide backup for periods of unsuitable atmospheric conditions for AO observations, we strongly encourage proposals for ISIS, LIRIS and ACAM, which can be carried out in any sky conditions (that is, unspecified seeing and sky brightness). Such proposals will be reviewed by the TACs in the usual way, and we envisage at least one such proposal per community will act as a backup to adaptive optics observations.

## 9. Visitor Instruments

Applicants wishing to submit proposals to use an established visitor instrument on the WHT must contact the relevant Instrument Contact in the first instance; the WHT established visitor instruments and their contacts are:

Instrument	Instrument Contact
INTEGRAL	Evencio Mediavilla, <a href="mailto:emg@ll.iac.es">emg@ll.iac.es</a>
PN.S	Nigel Douglas, <a href="mailto:ndouglas@astro.rug.nl">ndouglas@astro.rug.nl</a>
SAURON	SAURON Team, <a href="mailto:sauron_webmaster@strw.leidenuniv.nl">sauron_webmaster@strw.leidenuniv.nl</a>
ULTRACAM	Vik Dhillon, <a href="mailto:Vik.Dhillon@sheffield.ac.uk">Vik.Dhillon@sheffield.ac.uk</a> Tom Marsh, <a href="mailto:t.r.marsh@warwick.ac.uk">t.r.marsh@warwick.ac.uk</a>

ULTRACAM is offered on the WHT in 2011B, following three successful semesters on the NTT at ESO. Prospective applicants from all of ING's communities who are considering writing a proposal to use ULTRACAM should contact Vik Dhillon or Tom Marsh in the first instance, so that scheduling requirements can be co-ordinated.

## New Visitor Instruments on the WHT

PIs considering a proposal to the WHT to use a new visitor instrument (i.e. new to the WHT) should email the ING Director (Marc Balcells, [balcells@ing.iac.es](mailto:balcells@ing.iac.es)) well in advance of the proposal deadlines stating their intent, and should also submit a Technical Appraisal form. Further information on the protocol to be followed for submitting proposals to use new visitor instruments, and a link to the Technical Appraisal form, are available at:

<http://www.ing.iac.es/Astronomy/observing/NewVisitorInstruments.html>

## 10. IDS and WFC on the INT

### INT

IDS is offered with a choice of two detectors, EEV10 and RED+2, and the 235mm camera only, but with the full range of gratings. The RED+2 detector is an E2V deep-depletion, low-fringing, high-QE, red-sensitive CCD like RED+ on the red arm of ISIS, and will be commissioned shortly in semester 2011A. It is offered on a shared risks basis in 2011B and its characteristics are summarised at:

[http://www.ing.iac.es/engineering/detectors/g3\\_ultra\\_red%2B2.html](http://www.ing.iac.es/engineering/detectors/g3_ultra_red%2B2.html)

For detailed information on IDS and its performance, see:

<http://www.ing.iac.es/Astronomy/instruments/ids/>

## WFC

On-chip binning of the WFC mosaic, and windowing of CCD 4 (the default pointing aperture of the WFC) have been implemented recently. On-chip binning allows the effective pixel size to better match the image quality of the WFC in worse-than-median seeing conditions, and windowing will enable a more efficient duty cycle for photometric observations of point sources and small fields. These options are offered in semester 2011B, and are described in more detail at:

[http://www.ing.iac.es/astrometry/instruments/wfc/wfc\\_binning\\_notes.html](http://www.ing.iac.es/astrometry/instruments/wfc/wfc_binning_notes.html)

The WFC is offered in the default rotator position angle of 180-degrees only. However, when there is compelling scientific justification, other rotator angles (0-, 90- or 270-degrees) can be offered for the duration of the run only; changes to rotator angle during a run are not permitted. Such requests should be justified in the original telescope proposal.

Several new narrowband filters have recently been acquired for the WFC, including H-beta, HeI 5875Å and red-shifted H-alpha filters.

For further information on the WFC and its performance, please refer to the WFC home page:

<http://www.ing.iac.es/Astronomy/instruments/wfc/>

## 11. OPTICON Trans-national Access Programme

Access to the ING telescopes under the auspices of the EC-funded Research Infrastructure Programme OPTICON is available to eligible astronomers based in EU Member States and Associated States, and EC funding may be available to cover their travel, accommodation and subsistence costs. Applications from new users and young researchers, and astronomers based in countries without similar research facilities, are strongly encouraged.

OPTICON observing proposals are assessed by an OPTICON-specific TAC, the CTAC, and should be submitted directly to OPTICON using the NORTHSTAR web-based proposal preparation tool. Please refer to the OPTICON web pages for further details of proposal submission, including the deadline:

[http://www.astro-opticon.org/fp7/tna/opticon\\_call.html](http://www.astro-opticon.org/fp7/tna/opticon_call.html)

Note that proposals submitted directly to ING's national TACs that otherwise meet the OPTICON criteria of eligibility **do not qualify** for OPTICON financial support if awarded telescope time; only proposals submitted through the OPTICON TAC may qualify for financial support from OPTICON.

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