

# Call for proposals for the Liverpool Telescope

## Semester 2010A

The Liverpool Telescope is a 2.0 metre fully robotic telescope sited at Observatorio del Roque de Los Muchachos, La Palma, Canary Islands. The Liverpool Telescope Time Allocation Committee is now accepting proposals for PATT time for observations in Semester 2010A (1<sup>st</sup> February 2010 to 30<sup>th</sup> September 2010).

Full details of the telescope, **instrumentation and proposal submission** are given at:

<http://telescope.livjm.ac.uk/>

### Time available and deadline

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*The deadline for submission is 30<sup>th</sup> September 2009.*

The total available time for PATT users in 2010A excluding pre-allocated time is at least **198.5 hours**.

### Instrument availability

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The instruments available are the RATCam, SupIRCAM, RISE, RINGO and FRODOSpec.

- **RATCam** is an optical CCD camera with a  $4.6 \times 4.6$  arcmin field of view. The available filters are Sloan  $u'$ ,  $g'$ ,  $r'$ ,  $i'$ ,  $z'$ , Bessell B and V, and Ha. Observations can also be obtained without filters.
- **SupIRCAM** is an infrared camera operating at J or H band with a  $1.7 \times 1.7$  arcmin field of view.
- **RISE** is fast-readout camera developed in collaboration QUB. It has a fixed "V+R" filter (similar to that used in RINGO) and reimaging optics giving a  $7 \times 7$  arcmin field of view. An e2V frame transfer detector is used to obtain a cycle time of less than 1 second. It is currently an **expert user** instrument. Potential users should contact the LT Support Astronomer, Chris Moss ([ltsupport\\_astronomer@astro.livjm.ac.uk](mailto:ltsupport_astronomer@astro.livjm.ac.uk)) directly to discuss the capability of the instrument and feasibility of the observing programme **well before** submitting an observing proposal.
- **FRODOSpec** is the new multi-purpose **integral-field input spectrograph**. See the telescope website (below) for updated performance information, but the specification allows observations at 380 to 1000 nm in either low (~2400) or high (~5400) resolution mode. The IFU provides an  $11 \times 11$  lenslet array over a 0.93 arcsec field of view. It is currently an **expert user** instrument. Potential users should contact the LT Support Astronomer, Chris Moss ([ltsupport\\_astronomer@astro.livjm.ac.uk](mailto:ltsupport_astronomer@astro.livjm.ac.uk)) directly to discuss the capability of the instrument and feasibility of the observing programme **well before** submitting an observing proposal.

The **RINGO** polarimeter is not being offered for 10A. Even for instruments that are not designated expert user, potential users are welcome to contact the **LT Support Astronomer**, Chris Moss ([ltsupport\\_astronomer@astro.livjm.ac.uk](mailto:ltsupport_astronomer@astro.livjm.ac.uk)) directly to discuss the capability of the instrument and feasibility of the observing programme **well before** submitting an observing proposal.

Beginning in semester 2010A the telescope will routinely observe standard stars with **RATCAM only**. These standards will be taken in B,V,r,i and z (i.e. g,U and H alpha standards will NOT be taken). NO standards will be taken for remaining instruments (RISE, SuperIRCam, RINGO, FRODOSpec). Observers who wish to obtain standards, apart from those which are routinely observed, will need to include observations of these standards in their own programmes.

Information on all these instruments is available at:

<http://telescope.livjm.ac.uk/Info/TelInst/Inst/>

## Proposal process

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Applications are submitted in two phases:

### Phase 1 – the science definition phase

Phase 1 proposals are sent to the Telescope Allocation Committee (TAC) outlining the science case for observation and, in particular, why they are **suitable for a robotic telescope**.

- See [telescope.livjm.ac.uk/Info/PropInst/](http://telescope.livjm.ac.uk/Info/PropInst/) for instructions on how to **prepare and submit** your Phase 1 proposal.
- Please note the requirement to specify a **Minimum Usable Fraction** (MUF – see below).
- Please note the new guidance on **Maximum Group Length** available at <http://telescope.livjm.ac.uk/Info/PropInst/phase1.php#Instruments>

### Phase 2 – the observation specification phase

The principal investigators of proposals that were successful in Phase 1 will be sent instructions by the LT technical team on how to complete Phase 2 of the submission process.

### Rank Definition

Successful proposals are entered into the observing queue with one of three rankings:

- A. High priority programmes. The TAC would like to see **100% completion** of the observations.
- B. Medium priority programmes. The TAC would like to see **at least the MUF** of observations obtained, provided this does not impact of the completion of priority A programmes.
- C. Low priority programmes. These programmes are used to over-subscribe the observing queue so that the telescope is not idle. There is no guarantee that any observations will be obtained. If observations are started for a programme then the scheduling software should **aim to obtain at least the MUF** of the observations, but not at the expense of 100% completion of priority A or B programmes. There will be approximately an additional 82 hours available for Band C programmes in semester 2010A, spread across all observing conditions.

The **MUF** (Minimum Usable Fraction) was introduced by the PATT TAC to help the LT technical team schedule observations effectively, e.g., to decide whether to finish the observations for one programme or to start a new programme that may not be completed. Please specify the MUF for your programme in the technical case of the Phase 1 proposal. For example, the MUF can be used to specify that “any observations would be usable” (MUF=1%), or “a complete or nearly complete sample is essential to achieve the science goals” (MUF=90%). The TAC may revise the MUF of successful proposals if they feel this is appropriate.

### Telescope performance

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The current **rms pointing** of the LT is 6 arcsec. The current **tracking performance** provides seeing-limited images (FWHM < 0.8 arcsec) for exposures up to **1 minute** without the auto-guider (**open loop**) and up to **30 minutes** with the auto-guider (**closed loop**). Individual exposures with the auto-guider are limited to 30 minutes.

### Observing conditions

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We welcome applications for all available observing modes, conditions and RA ranges, particularly those that take advantage of the **robotic** nature of the LT. The PATT time available is spread equally between all observing conditions. Good/Dark time tends to be the most over-subscribed. There is much less competition for observations that can be done in bright and/or spectroscopic conditions.

Dr Stewart Eyres, Chair, PATT Liverpool Telescope Allocation Committee.