LBT Italian Coordination Facility

Call for Observing Programs at the Large Binocular Telescope

Italian time

Sep 2024 – July 2025

(LBTO Semesters: 2024B - 2025A)

Submission expires:

Friday May 3rd, 2024, 24:00 CEST

Send questions to the INAF LBT staff:

lbt-italia@inaf.it

1. ITALIAN OBSERVING STRATEGY and CONSTRAINTS

The Large Binocular Telescope (LBT) is a binocular facility composed of two 8.4m telescopes rigidly mounted, located atop Mount Graham, Arizona, USA at an elevation of 3221 m, as part of the Mount Graham International Observatory (MGIO).

LBT is an international joint project among Italy, Germany and the United States of America, of which Italy has 25% of the total observing time.

1.1 - Scheduling and strategy

Regular scientific operations at LBT started in 2010. All INAF observations with "Facility Instruments" (LBC, MODS, LUCI and PEPSI) are carried out in service mode by a team of skilled observers of the LBT Italian Coordination Facility with the aim of maximizing the scientific return of the INAF community. The scheduling of the observations is designed in order to follow as strictly as possible the scientific ranking established by the INAF Time Allocation Committee (TAC) and respecting the observational constraints requested by the applicants.

Confirming the policy introduced in the 2013-2014 call, the exact schedule of the Italian nights is not defined at the moment of issuing the call. LBTO will define the schedule after the selection of observing proposals by the various partners, in order to optimize as much as possible the execution of these programs. Users can apply for any target during the period, including time-constrained observations, such as planet transits or target of opportunity. The PIs of programs scheduled for execution in a definite run will be contacted by the italian Team to produce and submit the needed information (OB, finding charts etc). Detailed instructions for the OB preparation will be provided by the LBT staff.

Due to weather and instrumental conditions, our team is prepared to exploit programs with different seeing and instrumental requirements independently of their rank. For this reason we also suggest the community to **send us backup programs** (i.e. programs with larger seeing/background constraints) that are used as "fillers" in case of bad seeing conditions (>1.3 arcsec).

1.2 - Maximum exposure time

Because of the relatively small number of nights available to the Italian community (around 45 per year) and based on previous experience, **individual targets, or targets that have similar RA, cannot be observed for much more than around 20-30 hours of open shutter time for binocular observation (10-15 hours if one telescope is available), including overheads.**

Since the observing strategy is designed to maximize the chances to complete the observing programs, **larger programs will have a low success probability and may be skipped during the operations independently on their rank.**

For simplicity, **users must not take into account the effect of binocular observations during the proposal submission**. They are requested to use the available ETCs to estimate the proper open shutter time needed for **each instrumental configuration** of their project and put the resulting number in the PIT (see sect. 5.2) and the proposal form. The actual implementation of the program in binocular mode will be later agreed between the PIs of the accepted programs and the observers. As described in more detail in Sect. 2, different modes of binocular observation exist that may lead to significant saving of observing (telescope) time for a given project.

In case a specific binocular setup is needed on scientific grounds (e.g. when simultaneous observations at different wavelengths are needed) users must specify it in the proposal description.

Proposers are also envisaged to emphasize a minimum of targets/exp times that can lead to a significant scientific result to be published specially for large and multitarget programs.

Proposers are strongly advised to contact the LBT Italian staff (lbt-italia@inaf.it) at an early stage of the proposal preparation to check the feasibility of their programs.

1.3 - Time-constrained observations

Time-constrained observations (planet transits, objects of the solar systems that request non-sidereal tracking, and similar) can be requested through this call.

Users must be aware that time-constrained observations are quite "risky", since the relevant observing night may eventually not be available to Italian observers.

ToO observations (e.g. Gravitational Waves, Gamma Ray Bursts, SN and similar unpredictable events that need a prompt follow-up) may also be requested, but will be executed only in case of very high ranking from the TAC. ToO observations that require to be executed during different partners' times, i.e cross-partner, need to follow the **Time Domain Observation Policy** delivered in Feb 2019.

1.4 - Discretionary Time

To allow for more flexibility in the use of LBT, the policy of INAF Discretionary Time was established in 2012. In addition to the present call, observations can be requested *at* **any time during the year** in the case of:

- Proposals requiring the immediate observation of a sudden and unexpected astronomical event;
- New, unforeseen proposals requesting urgent observations on a hot and highly competitive scientific topic;
- Proposals asking for follow-up observations of a program recently conducted from ground-based and/or space facilities, where a quick implementation should provide break-through results;
- Proposals of a somewhat risky nature requesting a small amount of observing time to test the feasibility of new observing capabilities.

Users interested in these INAF-DT projects **MUST** contact the LBT Team via e-mail.

Use our **DDT form** available in ms-doc and latex format here.

1.5 - Strategic Programs

"Strategic Programs" are meant to increase the impact of LBT in the astronomical community at large by leading to significant advances in key scientific topics, highlighting the capabilities of the LBT unique instruments.

The main differences with respect to Normal Programs are that:

- They can (but must not necessarily) extend up to two years;
- Their status of "Strategic Programs" must be explicitly confirmed by the TAC; resulting in a rank that is higher than any other program;
- As a result they have the highest priority during observations;
- They will be "carried over" to the next period in case of incomplete execution.

Because of the relatively small number of nights available to the Italian community, Strategic Programs should by no means be intended as "Large Programs". **They should typically not exceed the open shutter time mentioned in paragraph 1.2.** The ideal Strategic Program includes several different targets that can be conveniently followed over most of the year.

Proposers are strongly advised to contact the LBT Italian staff at an early stage of the proposal preparation to check the feasibility of their programs.

1.6 - Shark GTO Programs

After the approval of the scientific direction, we'll commit 60hrs in disruptive mode and 8 nights to the SHARK VIS-NIR Teams for AO observations. Being most of the targets of the GTO proposals in the Taurus region (RA=4-5h), regular programs with targets around these RAs requesting good seeing conditions will have a minimal chance to be observed.

2. OBSERVING MODES & TELESCOPE CONFIGURATION

Only the facility instruments can be operated in binocular mode since they are installed on both telescopes. Three binocular modes are available:

- The twin mode is when the two instruments have the same configuration so that the same observation is done simultaneously at the two mirrors, halving its execution time.
- The fraternal mode is when the two channels are configured differently (i.e. different filters or masks) so that two different observations are executed simultaneously.

In particular, concerning MOS programs, it is possible either to cast the same mask for the two instruments and use them at the same time obtaining the same on-target exposure halving the "time on sky", or casting two different masks for the same field doubling the number of objects observed.

- Mixed Mode (Heterogeneous Binocular) means that two different instruments are used at the two telescopes. At the moment, this mode is offered with LBC on one side and LUCI or MODS (imaging and spectroscopy) on the other. Similarly PEPSI with LUCI (long slit) or MODS, and LUCI with MODS. Observations with the Mixed mode are "shared risk" activities (see below).

As described in Sect. 1.2 users must not take into account the effect of binocular observations during the proposal submission. The description of all these modes reported here is for your knowledge only. Binocular observations will be properly set up by the Observers.

For the incoming observing season the available telescope configurations offered by LBTO are as follows (https://scienceops.lbto.org/proposal-submission/):

SEEING LIMITED

- **All facility instruments**: Twin or Fraternal Mode
- LBC+MODS, LBC+LUCI, LUCI+MODS, PEPSI+LUCI (LS), PEPSI+MODS: Mixed Mode*:

DIFFRACTION LIMITED

- LUCI1 + SOUL (imaging only)
- LUCI2 + SOUL (imaging only)*
- LBTI
- SHARK - VIS
- SHARK - NIR

* Shared-risk observations: LBTO and its partners jointly acknowledge that the instrument, capability, or facility may experience suboptimal efficiency or technical downtime during nighttime operations and that, at the discretion of LBTO staff and for the benefit of the greater community, the investigation of the origin of the problem(s) or the pursuit of recovery options may occur.

3. SEEING LIMITED INSTRUMENTATION OVERVIEW

Facility Instruments are those that are fully accepted by LBTO and can be operated by the Partners Observing Teams. An up to date instrument description and manuals are available at:

https://scienceops.lbto.org/

PI and Strategic Instruments can be operated by the Instrument Team only. Astronomers who would like to use the PI/Strategic instruments, LBTI, must contact the Principal Investigator of these instruments before submitting proposals. Observations will be carried out with assistance from the instrument team during scheduled PI instrument blocks.

3.1 - LBC

Type: wide-field imager - FOV: 25’x23’

Facility Instrument - Binocular

LBCB: (SX) 350-650nm, LBCR: (DX) 550-1000nm

LBC is a twin optical imager composed of two identical large field cameras, with a FoV of ~25'x23', mounted at the prime foci of the two telescopes. LBC is a fully binocular instrument that observes simultaneously the same field with the two cameras. The camera on the left side

(LBC-Blue) is optimized for the UV/blue wavelength range and offers imaging in the Bessel filters (U,B,V) and in the SDSS-like filters (Uspec,g,r). The camera on the right side (LBC-Red) is optimized for the red/near-IR range and offers imaging in the filters V,R,I (Bessel), r,i,z (SDSS), 1μm broad-band Y and the narrow band F972N20, centered at 972 nm.
Details on the instrument can be found at:

https://scienceops.lbto.org/lbc/

3.2 - LUCI

Type: Near IR multi-object, long-slit spectrograph and imager - FOV: 4'x4'

Facility Instrument - Binocular

LUCI1: (SX) 0.85-2.4μm; LUCI2: (DX) 1.00-2.4μm

LUCI (LBT NIR spectroscopic Utility with Camera and Integral-field unit, formerly known as LUCIFER) is a near-IR spectrograph and imager mounted at the Nasmyth focus. It offers imaging, long-slit and multi-object (MOS) spectroscopy in the wavelength range 1- 2.5μm over a field-of-view ~4' x 4'.

Details on the instrument can be found at:

https://scienceops.lbto.org/luci/

https://lbt.inaf.it/LUCI_UserMan.pdf

3.3 - MODS

Type: optical multi-object, long-slit spectrograph and imager - FOV: 6'x6'

Facility Instrument - Binocular

MODS1: (SX) 320-1100nm; MODS2: (DX) 320-1100nm

MODS (The Multi-Object Double Spectrographs) are the twin optical spectrographs and imagers mounted at Gregorian focal stations. Each MODS has two arms highly optimized for the Blue and Red portions of the spectrum. With a 6 arcminute square field of view, it is capable of long-slit and multi-slit spectroscopy as well as imaging in the ugriz bands from 0.33 to 1.1μm.
Details on the instrument can be found at:

https://scienceops.lbto.org/mods/

http://www.astronomy.ohio-state.edu/MODS/

3.4 - PEPSI

Type: Fiber Feed high-resolution spectrograph and polarimeter.

PI Instrument - Binocular

PEPSI: 383-907nm: Resolution: 50.000, 120.000 and 270.000

PEPSI is the bench-mounted, two-arm, fibre-fed and stabilized Potsdam Echelle Polarimetric and Spectroscopic Instrument for the LBT. Three spectral resolutions of either 50.000, 120.000 or 270.000 can cover the entire optical/red wavelength range from 383 to 907 nm in three

exposures.

Two 10.3k x 10.3k CCDs with 9μm pixels and peak quantum efficiencies of 94–96% record a total of 92 echelle orders. It bears a new variant of a wave-guide image slicer with 3, 5, and 7 slices and peak efficiencies between 92–96%. A total of six cross dispersers cover the six wavelength settings of the spectrograph, two of them always simultaneously. The peak efficiency of the system, including the telescope, is 15 % at 650 nm, and still 11% and 10% at 390nm and 900nm, respectively. In combination with the 110 square meters light-collecting capability of the LBT, the expected limiting magnitude of 20th mag in V in the low-resolution mode. A description of the instrument and more information can be found at:

https://pepsi.aip.de

https://pepsi.aip.de/wp-content/uploads/2019/12/1070212.pdf

4. ADAPTIVE OPTICS fed INSTRUMENT GUIDELINES

4.1 - LUCI+SOUL

LUCI **(1 & 2)** with SOUL AO correction will be offered in the full period of this call. This imaging mode uses the N30-camera of LUCI with a scale of **0.015 arcsec/pix and provides** a FOV of **30''x30'' in the zJHK bands**. Imaging mode only is available with two read-out modes: LIR (double-correlated sampling) and SUR (sample up the ramp). The list of available filters and other info about the N-30 camera are available in sect. 2 of

LUCI user manual

(https://lbt.inaf.it/LUCI_UserMan.pdf)

SOUL is a Natural Guide Star (NGS) AO system with single conjugation (upgrade of FLAO). The NGS can be the science target itself (even if not properly a star) or a nearby different object. The performances of the system are mainly dependent on the brightness of the NGS, its distance from the target and the seeing conditions. With “bright” NGSs the system is able to provide diffraction limited images in all bands and high contrasts in the diffraction pattern of the NGS. The current characterization of on-sky AO performances for SOUL-LUCI1 is detailed in:

SOUL-T06_SOUL-LUCI_performance

(http://soul.arcetri.inaf.it/wp-content/uploads/2020/09/SOUL-T06_SOUL-LUCI1_performance_V1.0_20200918.pdf)

In order to estimate the expected AO performance on a object we provide a dedicated web tool:

SOUL SR Calculator

(http://adopt.arcetri.inaf.it/strehl.html)

Finally, we report the link to the LUCI ETC that is provided with a diffraction limited option, requiring the input of the expected SR value on the object:

LUCI Exposure Time Calculator

(http://luci-etc.lbto.org/calculator.py)

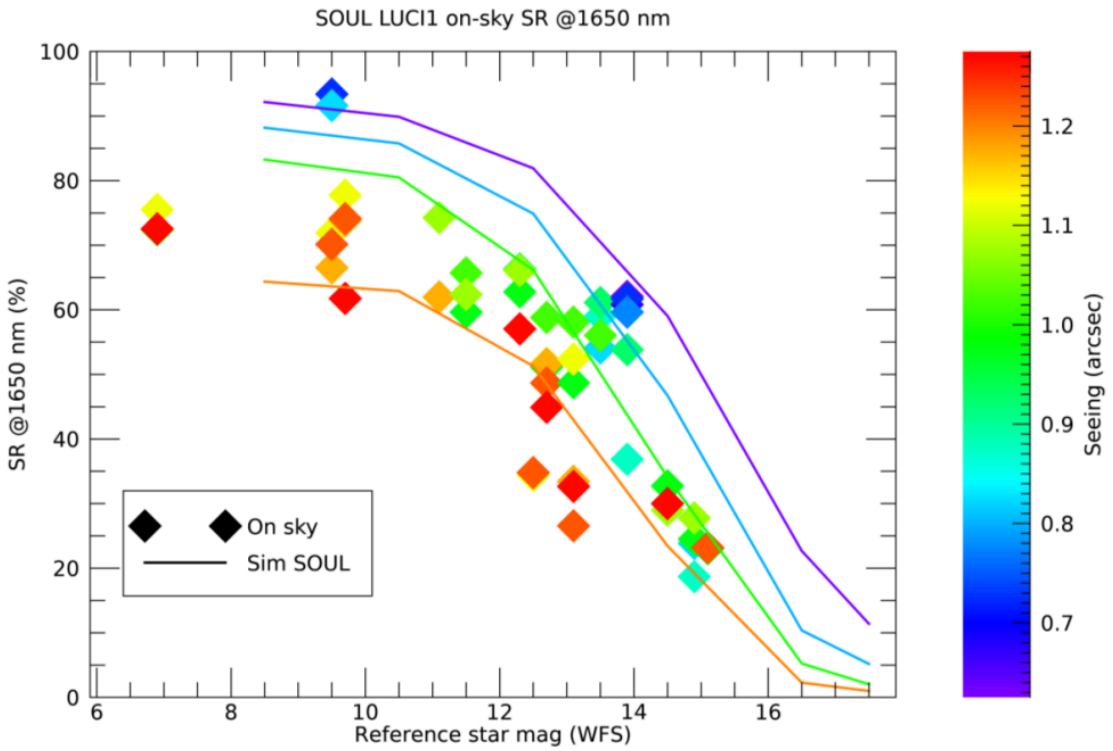

Fig. 1 - SOUL-LUCI1 performance measured on sky during the commissioning, extracted from SOUL-T06_SOUL-LUCI1_performance. Each point represents the average of a set of SR measurements done on the PSF acquired with the LUCI1-N30 camera. The solid line represents the performance expected via simulation. The conversion from catalog mags to WFS mag is available in the SR-calculator tool and detailed in the document.

In summary, the suggested steps to assess the feasibility on a particular observation are:

1. Identify the AO reference (Natural Guide Star);
2. Go to the SR calculator, fill the parameters and obtain estimated SR value;
3. Pickup the obtained SR value and use into the LUCI ETC to estimate the SNR vs time on your target;
4. Compare the expected performance with respect to those needed for your scientific goal;
5. Observers are welcome to contact the SOUL PI in case of doubts or for a preliminary evaluation of a target (enrico.pinna@inaf.it).

We remind here that, for the proposal evaluation, it is mandatory to report the estimation of the minimal AO performance required to achieve the proposed scientific goal. This estimation must be reported in the proposal form in terms of SR or PSF FWHM or flux contrast.

More details about diffraction limited observation with LUCI1+SOUL and info are available here https://scienceops.lbto.org/luci/preparing-to-observe/adaptive-optics-ao-with-luci/phase-i-planning-for-full-ao/

4.2 - LBTI

LBTI (Large Binocular Telescope Interferometer) is a uniquely powerful common-mount, dual-aperture system that fully exploits the AO capabilities of LBT. LBTI can be used both as an imager and as an interferometer. The LBT Interferometer combines the light from the two 8.4 m apertures of the LBT, to synthesize a 23 m telescope. The system is optimized for observations in the thermal infrared. Visible light is used to feed the SOUL adaptive optics systems. After the beam combiner, infrared light is sent to one of two scientific cameras:

- **LMIRCam**: high resolution imaging camera, coronagraph and IFU; optimized from **3-5μm** and available in H an K too. Offered as a single dish or Fizeau interferometer.
- **NOMIC**: high resolution camera in the **8-13μm** band. Offered as imager, Fizeau and nulling interferometer.

The full description of the cameras and respective observing modes is available at

LBTI web page

LBTI focal stations are **fed by SOUL systems** and, as for LUCI1, an estimation of AO performance on specific targets is provided by the web tool:

SOUL SR Calculator

LBTI is a PI instrument and all proposals must be send at least **1 week before the deadline** to:

lbtipi@lbto.org

in order to check for resource availability of the LBTI team and support the proposal redaction. All details about the access to LBTI for users can be found at

LBTI User Policy

4.3 - SHARK-VIS

SHARK-VIS is the new visible-band high-contrast imager of the LBT, fed by the SOUL AO system, and offers both narrow-band and wide-band capabilities. It is equipped with a high-cadence low-noise sCMOS camera with a pixel scale of 6.5 mas/pix, which is adequate to Nyquist sample the diffraction limited PSF of the LBT telescope up to 450nm. The instrument adopts a fast-imaging approach, using short DITs to limit the PSF smearing due to atmospheric AO residuals and telescope jitter, thus being optimized for extremely high-angular-resolution and high-contrast imaging in a field of a few arcseconds.

Currently, SHARK-VIS is still in its commissioning phase, hence **for the 2024 call the instrument is offered on a best-effort basis and only with the observing modes that are already fully commissioned**. Details about the instrument, the available observing modes and filters can be found here:

SHARK-VIS - LBT Call 2024

SHARK-VIS is a PI instrument built at INAF-Osservatorio Astronomico di Roma. Interested **proponents must contact the instrument team in advance to use SHARK-VIS for their program, at least 2 weeks before the deadline**, so as to allow the instrument team to verify the feasibility of the proposed observations, to estimate the expected performance, and

to check for possible target conflicts with ongoing programs of the SHARK-VIS scientific team.

To submit a proposal for SHARK-VIS please contact the PI and instrument scientist:

PI: Fernando Pedichini (fernando.pedichini@inaf.it)

IS: Simone Antoniucci (simone.antoniucci@inaf.it)

4.4 - SHARK-NIR

SHARK-NIR is the new near-infrared-band (between 0.95 and 1.7 μm) high-contrast imager of the LBT fed by SOUL AO system. It proposes three different observing modes: coronagraphic imaging, classical imaging and medium resolution spectroscopy. The coronagraphic mode allows to observe with different types of coronagraph: one Gaussian Lyot coronagraph, one four-quadrant-phase-mask (FQPM) coronagraph, one symmetric shaped pupil (SP) coronagraph and two different asymmetric SP coronagraphs. The first two coronagraphs allow observation of a large field-of-view (FOV) with a radius of 9” while the SP coronagraphs have a limited FOV allowing a deeper contrast in the region between 0.1” and 0.3”. The Gaussian Lyot coronagraph has been commissioned in the past months and it is currently in use for scientific observations while **the other coronagraphs are still in their commissioning phase and are offered on a best-effort basis.** Each observing mode allows the use of both wide-band (Y, J and H) and narrow-band (FeII, HeI, Paβ, contJ, contH, NB_H2 and NB_H3) scientific filters. Furthermore, both coronagraphic and classical imaging modes allow observation in dual band imaging with the light from the telescope splitted in two near wavelength images. The possible combinations of filters for the dual-band imaging are: H2-H3, ContJ-Paβ and ContH-FeII. Finally, the long slit spectroscopy (LSS) mode allows to obtain spectra with a resolution of R=100 or R=700 in the same spectral region of the imaging mode. This observing mode has been designed to obtain the spectra of bright companions (contrast of the order of 10^{-4}-10^{-5}) at a separation of less than 1” from the host star, and it has been thoroughly tested on stellar companions while testing on lower mass companions is ongoing. Additional details on the instrument can be found in the following document:

SHARK-NIR Instrument Description

SHARK-NIR is a PI instrument built at INAF-Osservatorio di Padova with the collaboration of MPIA and Steward Observatory. **Interested proponents must contact the PI and science team of SHARK-NIR at least 2 weeks before the proposal deadline**, in order to allow the evaluation of the technical feasibility of the proposed observations and to check for possible conflicts with ongoing programs.

To submit the proposal please contact the following people:

PI: Jacopo Farinato (jacopo.farinato@inaf.it)

IS: Valentina D’Orazi (vdorazi@roma2.infn.it)

5. PROPOSAL SUBMISSION

5.1 - Who can apply

The PI of a proposal must be a researcher associated with an Italian astronomical institute or university. Researchers that belong to institutions that are not LBT partners are allowed in the CoI list up to 50% of the total number of applicants. Proposals that do not fulfill this requirement will not be evaluated by the TAC.

Collaborative programs aiming at using also observing time from other LBT partners are encouraged, and should be described in the proposal. However, each application must be independently submitted to the various TACs, and will be independently evaluated. Since there is no connection among the various TAC, each application should be self-consistent, i.e. not relying on observations carried on by other partners to be scientifically productive. Coordinated observations with other partners may either be used to enlarge the programs and/or to increase their observing efficiency and likelihood of completion.

5.2 - The Phase I Submission Tool (PIT)

The Phase I Tool (PIT) developed by LBTO for proposal submission and handling is used. The user front end is a java GUI, customized for the INAF partnership, that can be downloaded from here. In collaboration with LBTO, we offer all the support needed to prepare and submit proposals with this system, that consists of preparing the proposal with our form (available in ms-doc and latex format here), and then submit the pdf and all relevant information through the PIT GUI. Inserting information in the PIT is a mandatory step to screen proposals and cannot be skipped. The request for a strategic proposal is not present in the PIT GUI and must be addressed in our form only as in the previous calls.

NOTE: The new version of the PIT does not allow multiple instrument configuration anymore. Please pay attention if you want to import the instrument configurations from an old proposal.

ANONYMOUS SUBMISSION: Following a trend already adopted by other telescopes, we have decided that the proposal evaluation process will be anonymous to guarantee the effective anonymity of the PI and/or team. This entails a series of measures in the writing of the proposal that you'll send through the PIT. Please, follow the "Guidelines for LBT-ITA proposers" before preparing your proposal.

5.3 - Observing Runs

Each proposal is split into one or more "runs". In practice, a run is the smallest part of an observing program that delivers self-contained results and is equal to a single instrument configuration and has to be labeled in different ways in the PIT. Each run may be evaluated independently and given different priorities by the TAC.

5.4 - Target selection

Applicants are strongly advised to take into account the requirements for the preparation of OBs and/or masks in assessing the observational feasibility of their proposal before submission. For example, for MOS spectroscopic observations, if your targets are quite faint, please, check whether you can place extra slits on targets bright enough to be visible in a single exposure. This provides additional checks on the quality of the mask alignment and definitely helps the reduction process, significantly increasing the quality of the reduced data.

Applicants are invited to provide a clear strategy for data publication in case of complex programs, especially those that imply multiple targets.

5.5 - Exposure time calculation

For all instruments, applicants must compute and specify in the proposal only the net exposure time (open shutter time) requested (including special calibrations, see Sect. 6.6), with no correction for overheads.

Exposure times can be evaluated using the following tools:

- LBC: https://lbt.inaf.it/ETC.php
- LUCI: http://luci-etc.lbto.org/calculator.py
- MODS: MODS Exposure Time Calculator
- PEPSI: https://pepsi.aip.de/?page_id=1410
- LBTI: see section 4.2

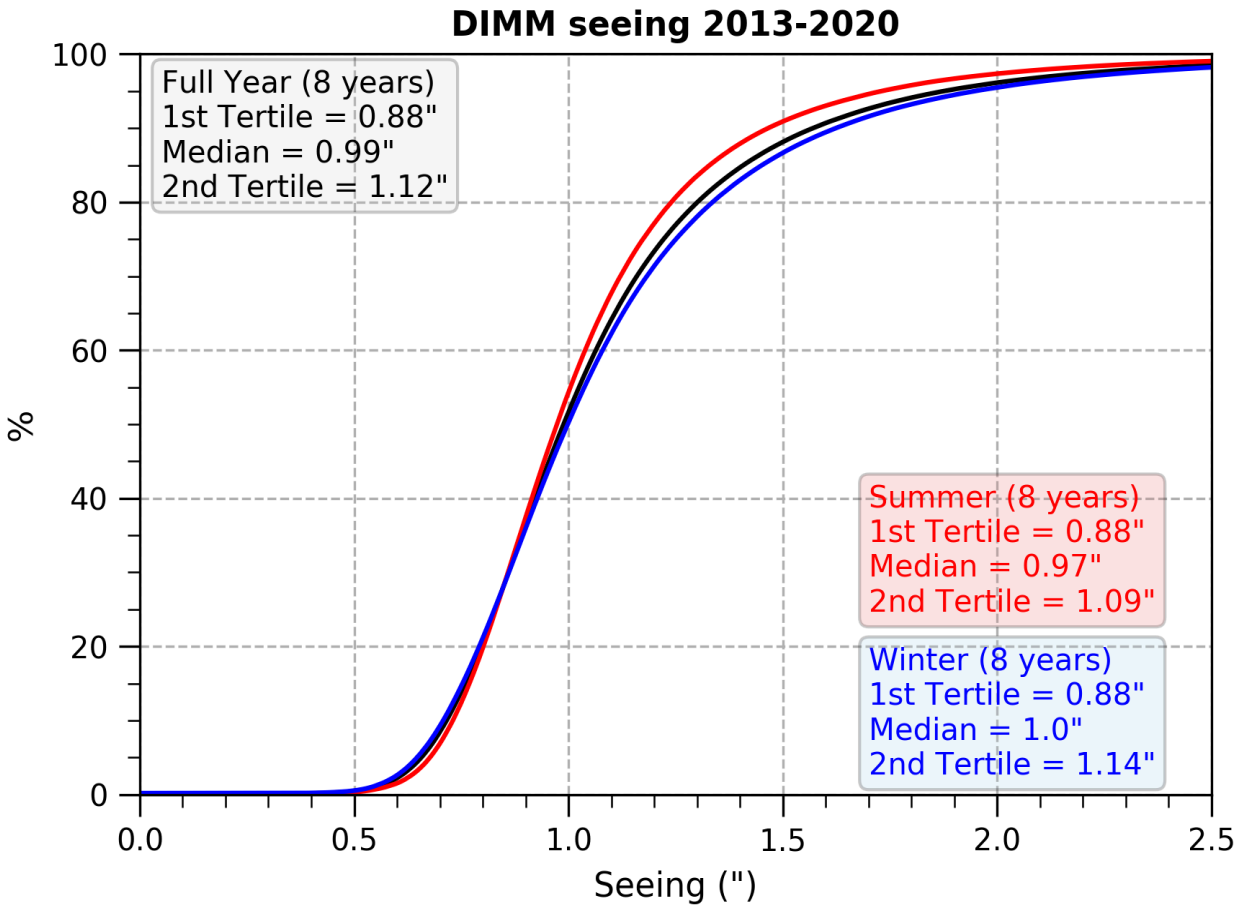

Fig. 2 - LBTO Seeing statistics provided by ALTA center.

From the cumulative distribution of the seeing measured by the ALTA Team (http://alta.arcetri.inaf.it/index.php) you can see from Fig. 2 that 50% of the available nights have seeing 1" or less. Therefore, pay attention to the fact that the better is the seeing requested as a constraint, the fewer are the expected nights matching that requirement.

5.6 - Calibrations

All applicants must describe their calibration needs and strategy in Sect. 6 of the proposal forms.

A basic set of calibration observations will be provided by the service observers and the relevant observing time must not be inserted in the proposal.

This basic set of calibrations include bias/dark, flats and photometric standards for imaging, and darks, flat-fields and arcs for spectroscopic modes. They are typically taken at the

beginning and at the end of night, or in daytime. Due to feasibility limitations, the availability of calibrations in the same night of the observations is not guaranteed.

Any other needed calibration, requiring observations during night-time (including in particular (spectro)-photometric standards taken between consecutive observations, IR telluric standard etc) must be described in Sect. 5 of the form and accounted for in the requested time.

Photometric standards need 15 min. each to be executed, while spectroscopic standards (either telluric of spectrophotometric) require 30 min. each.

Pre-imaging is not required for MOS observations with LUCI and MODS. Masks can be prepared using the dedicated tool (LMS/MMS) using a pre-existing image (in any wavelength) with accurate WCS astrometry. Given the low distortion in LUCI and MODS, the resulting masks are accurate for all slit widths equal or larger than 1".

5.7 - Proposal Evaluation

The INAF-TAC will rank the proposal primarily on the basis of their scientific relevance, taking also into account other factors: the scheduling constraints, the likelihood of completion and the previous record in the use of LBT data.

The refereeing process is made of two distinct phases. First, proposals are distributed to a number of external referees that evaluate the proposals assigning a grade and expressing strengths and weaknesses of each proposal. On average each proposal is reviewed by 3-5 referees, and each referee evaluates 3-5 proposals. In this phase each proposal is anonymous. Grades are then combined and a first ranking is produced.

In order to perform the first refereeing stage, coherently with the procedure adopted for the other italian telescopes, PIs (by default) and two to five CoIs for each proposal can be asked to referee other LBT proposals. PI are requested to indicate the names of CoIs acting as part of the external panel as referees. Please, ensure to receive CoIs's consent before indicating them as potential external referees.

In the second stage, the TAC receives the grades from the external referee and re-assess the final ranking. In this phase the proposals are not anonymous and the previous use of LBT observations is taken into account by the TAC in preparing the final ranking.

6. DATA FLOW

All the scientific data from LBC, LUCI and MODS will be stored at the IA2 Italian archive (http://archive.lbto.org/) in raw form and are accessible to the P.I. within a few days from the observations. The new LBT web interface access method is changed. Please visit the help page here for further details.

Imaging data from LBC, LUCI and MODS will be reduced at the LBC Survey Center (LSC) at OA Roma. All reduced data will be available to the P.I. at https://lsc.oa-roma.inaf.it/.

From the cycle 2021B, the LBT spectroscopic reduction center at IASF-Milano has released its own LUCI&MODS spectroscopic reduction pipeline (SIPGI). It will be available at http://pandora.lambrate.inaf.it/LBT/. A help desk at the LBT spectroscopic reduction center at IASF-Milano will be available to fully support PI during her/his own reductions with the pipeline.

For general information, contact the LBT Italian Coordination Facility staff: lbt-italia@inaf.it.

For any information dealing with the observations: lbt-italia-obs@inaf.it.

For imaging data reduction: lbt-italia-img@inaf.it.

For spectroscopic data reduction: lbt-italia-spec@inaf.it.