Call for proposals for observations on the French telescopes at OHP and TBL: first semester 2025 (25A)

Deadline for proposal upload: Wednesday October 23rd, 2024, noon (Paris - CET time)

There is an ON-LINE procedure to prepare AND submit the proposals for OHP and TBL. See the description of this procedure below or directly at https://northstar.omp.eu/. The server will open on September 23trd, 2024.

News

- T193: commissioning of the SOPHIE RED camera postponed to 2025B.
- T193: The MISTRAL camera is currently under repair. The instrument is operating with a backup camera that provides performance very close to the original blue mode (<8000A). However, the red mode is not accessible. This situation will likely continue throughout the entire 24B semester, and the return of the original camera cannot currently be guaranteed for the 25A semester.
- There is no call for Large Programmes with SOPHIE (T193) and at the TBL this semester (2025A).
- Proposals for SOPHIE must indicate in the application whether all or part of the observations requested are time-critical.
- TBL: Neo-Narval proposals must indicate in the request whether the Fabry-Perot mode should be used in parallel with the acquisition of the object. It is not by default.
- The TBL is offering the Neo-Narval instrument. See latest news on the site: https://tbl.omp.eu/instruments/neo-narval/. Testing and setup of the SPIP instrument will reduce the available time by 30% compared to the nominal offer. The installation of the SPIP instrument at the summit will take place next spring, followed by testing. SPIP is expected to be available from 2025B onwards. Neo-Narval observations will be conducted with VISION.
- The application presentation document is limited to 3 pages, figures and references included (minimum font 11 for the body of the text).

General principles and proposal selection

Information on the telescopes and their instrumentation can be found on the respective observatory home pages:

- Observatoire de Haute-Provence
- Observatoire du Pic du Midi

Proposals from PIs working in a French institution are evaluated and selected by a French Time Allocation Committee (TAC), which covers different scientific topics

(corresponding to the "Programmes Nationaux" thematic structures).

- PNPS (Programme National de Physique Stellaire): Stars and stellar physics (from protostars to planetary nebulae) (coordinator Clément Baruteau)
- PCMI (Physico-chimie du Milieu Interstellaire): Physics and Chemistry of the Interstellar Medium (coordinator François Levrier)
- PNP (Programme National de Planétologie): Planetary science (coordinator Thierry Fouchet)
- PNCG (Programme National Cosmologie et Galaxies): Cosmology and galaxies (coordinator Samuel Boissier)
- PNHE (Programme National Hautes Énergies) : High energy astrophysics (coordinator Pierre-Olivier Petrucci)

Primary criteria to rate the proposals on the 2-m telescopes are: scientific value, urgency, previous experience from and results obtained by the team. Combining different proposals, proposing key-programs, and observations made in support of large-size ground-based telescopes or of space borne observations are greatly encouraged. Proposals requiring a large number of nights but fulfilling those conditions may be supported.

The proponent must check that the targets he/she requests are not already present in the OHP and TBL (http://polarbase.irap.omp.eu) databases.

A telescope fee for each night is requested. For the successful French teams, this fee, as well as lodging and meals (but not the travel expenses), are granted.

193-cm telescope at OHP

The mean number of hours of observations per night is 7 hours in winter and 5.5 hours in summer (including weather conditions). These numbers are to be used in the calculation of the number of requested nights.

SOPHIE Spectrograph

The SOPHIE spectrograph is available to the community since the end of October 2006. This instrument, covering the 3872-6943 Å spectral range with 39 orders, has two observing modes: high efficiency (HE, R~35000) and high spectral resolution (HR, R~75000).
For each mode two fibres of 100-micron diameter each (star and sky, or star and calibration) pipe the light from the Cassegrain adaptor to the spectrograph. Each fibre sees 3 arcsec of the sky. The switch between modes is obtained by moving the fibre head in the adaptor and takes about 3 minutes. In order to achieve a higher spectral resolution, the HR mode has optical scramblers and a 40-micron exit slit. The efficiency ratio between the two channels is about 2.5 (1 magnitude).

For the high-resolution HR mode, HR_fpsimult (Fabry-Pérot on fibre B) template is only

recommended for observing programs that need to achieve high accuracy radial velocities (< 5 m/s).

For observing programs not requiring radial velocities more accurate than 10 m/s, it is recommended to use templates HE_AB and HR_AB (sky on fibre B) rather than templates HE_A et HR_A so that sky spectra can be recorded, which, under the presence of moonlight, can contaminate the spectra and the radial velocity (and thus the cross-correlation profile) of stars fainter than visual magnitude 10-12. Channel B also allows a posteriori correction of the sky background of S1D spectra.

The spectrograph uses an EEV 44-82 4102x2048 pixel CCD that has two reading modes (fast and slow). The read-out noise is 6.4 e- for the fast mode (read-out time = 19 s) and 2.1 e^- for the slow mode (read-out time = 197 s), which is suitable for the fainter objects. The slow mode is only useful for objects with expected S/B < 30. If the expected S/N ratio is greater than 30, the fast reading mode should be used.

The spectrograph, attached to the pillar of the telescope, is installed in a thermally stabilized chamber (better than 0.01°). The dispersing elements are contained in a vessel at constant pressure. The associated computer allows the preparation of observations, the integral control of the instrument and the complete reduction in real time of the data which are then archived on a RAID array

In June 2011, the installation of new fibres has considerably increased the stability in radial velocity in the HR and HE modes. The scientific validation achieved during semesters 2011B and 2012A indicates an accuracy of 2 m/s (Bouchy et al., A&A 549, A49, 2013), which allows us to undertake Doppler asterosismology programs and search for exoplanets of low masses. A new unit of calibration lamps for SOPHIE has been installed at the beginning of semester 2014A and a new software NSTS for preparing the observations. Since the optimization of the thermal regulation of the spectrograph, the intrinsic drifts of the instrument are now less than 1 m/s per hour. The accuracy on the long term is about 2 m/s and 4 m/s respectively for the HR and HE modes. In addition, a stabilized Fabry-Pérot etalon is now installed in the calibration unit, which allows an optimal measurement of the drifts, simultaneously with the HR_fpsimult. From now on, the ThAr lamps must only be used during the day for calibration sequences; the intrinsic stability of the spectrograph does not require calibration at night. However, if a calibration is required during the night, switch on the ThAr2 lamp, execute the sequence FP2 - ThAr2 - FP2, then switch off the ThAr2 lamp. It is now recommended to use _fpsimult instead of _thosimult. A documentation is available online and in the control room of the telescope.

For more information see:

- SOPHIE spectrograph: http://www.obs-hp.fr/guide/sophie/sophie-eng.html
- SOPHIE spectrograph data products : http://www.obs-hp.fr/guide/sophie/data_products.html

- Access to the public data of the SOPHIE spectrograph: http://atlas.obs-hp.fr/

Large Programs

There is no call for Large Programmes this semester (2025A)

Service mode observing (SOPHIE)

Service observing mode is offered on the spectrograph SOPHIE. However, the time devoted to this mode is limited and cannot exceed 5% of the total available time. Moreover, if the exposure time exceeds one hour per night, an appropriate justification must be given.

As the service mode observations are conducted by the observers during their missions at T193, program applicants with service mode observations may be called upon to conduct observations with the SOPHIE spectrograph on behalf of the programs that have provided the service mode observations.

In the proposal, the user should estimate the total equivalent number of nights needed for the program: **the total exposure time of the program should include 5 minutes of dead time per exposure if the CCD is read out in fast mode and 8 minutes with slow read-out** (including pointing of the telescope, time to prepare the spectrograph and read-out of the CCD), except if the requested exposures are consecutive. It should be noted that most of the observations use fast CCD read-out mode. The change from fast to slow read-out of the CCD (and vice-versa) requires taking an offset at each change in the mode of the next exposure, for example an offset in slow mode if the next exposure is read in slow mode.

The requested S/N ratio is the optimal value that is desired. The exposure time per object corresponds to the maximum that will be achieved. If this S/N ratio measured by the light meter is obtained in a shorter time, the exposure will be automatically stopped. A graph allows the proposer to estimate the expected S/N @550nm as a function of the magnitude of the star (for an exposure of 5mn and 1h) in the two available modes HE and HR:
http://www.obs-hp.fr/guide/sophie/etc_sophie.gif.

In addition, if service mode observations are requested, in order to facilitate their planning, it is necessary to fill in the table “observations de service” available at http://www.obs-hp.fr/guide/sophie/obs_service.xls and to send it to ohp.demandes@osupytheas.fr at the time of the submission of the proposal.

Once an observing program is accepted, it is mandatory to send the observing catalogues before the start of the semester to herve.lecoroller@lam.fr.

MISTRAL imaging spectrograph

The MISTRAL imaging spectrograph is offered to the community, both in visitor mode and in ToO (Target of Opportunity) mode for rapid transients. The allocated time cannot exceed 15%, including 2.5% in ToO mode, of the total T193 time offered this semester.

MISTRAL observations in ToO mode triggered by an alert can be authorized during SOPHIE nights, respecting the following rules:

- Prior approval of OHP management.
- One ToO every 3 nights at maximum.
- 2 hours / night maximum including overheads (pointing / changing instrument SOPHIE => MISTRAL => SOPHIE).
- Observation within 30 minutes of the alert (the current SOPHIE integration can be stopped if necessary)

MISTRAL is a low-resolution single-slit spectro-imager installed via a focal reducer, at the angled return of the Cassegrain focus on the 1.93-m telescope. A retractable mirror allows very simple and fast switching between SOPHIE and MISTRAL instruments, without mechanical operation.

MISTRAL is equipped with a 2K × 2K deep depletion ANDOR CCD camera (iKon-L DZ936N BEX2DD CCD-22031) cooled by a 5-stage Peltier. The operating temperature can reach -95 °C to -100 °C. Dark current is less than 3 electrons / hour / pixel at -95 °C.

Two dispersers cover the spectral range 4200A - 9950A at R ~ 700 resolution. Four motorized modules allow the slit, the grisms, the filters and the calibration mirror to be moved or removed. The FLI filter wheel includes 12 slots for 50-mm filters (available filters: SDSS g ', r', i ', z' + Y, galactic H, OIIIa & b, Hα, SII).

The calibration unit is integrated into the mechanical structure of the instrument. The spectral calibration lamps (Hg Ar Xe) and PLU (tungsten) are injected by four optical fibers via the removable calibration mirror.

The slit can be oriented via the telescope's field rotator. Software procedures are now available to facilitate the centering of objects on the slit.

The main features are available at http://www.obs-hp.fr/guide/mistral/sub1.html.

More information is available on the MISTRAL web page:
http://www.obs-hp.fr/guide/mistral/MISTRAL_spectrograph_camera.shtml

It is strongly recommended to consult the CookBook available on this page before any request. In case of doubt, it is also possible to contact the support astronomer: christophe.adami@lam.fr.

Access to MISTRAL public data: https://cesamsi.lam.fr/instance/mistral/

Visitor instruments

In case of using a visitor instrument, it is compulsory to contact the OHP director to check the feasibility.

Data rights

The proprietary period is **one year**. Once the proprietary period expires, the data enter the public domain and are available to anyone.

Telescope Bernard Lyot at Pic du Midi (OMP)

The spectro-polarimeter Neo-Narval is offered by default for semester 2025A. Observations will be conducted in multi-mission service mode, except on specific argued request. The spectrograph will be mounted in VISION mode.

For 2025A, there is no more ORP time available. The relevant teams should contact the TBL management at directiontbl@obs-mip.fr.

Neo-Narval is a spectro-polarimeter stabilized in pressure and temperature, the long-term objective being a velocimetric stability of $\Delta v \sim 3$ m/s. Neo-Narval is installed since September 2019 and the integration of the Fabry-Pérot occured in October 2020. However, at present, the Fabry-Perot channel is not used for missions (it might pollute weak polarimetric signals), the reduction software module taking into account this channel being still uner development. However, if the PI wishes to use this 3rd channel, **this must be specified in the proposal.**
Transmission and polarimetric separation capability are equivalent to those of Narval in spectropolarimetry, however with a photon deficit (~20%) in the blue (<450nm). Weak polarization signals also sometimes show strong N-signal values. The latest information on Neo-Narval is available at: https://tbl.omp.eu/instruments/neo-narval/. Neo-Narval has been developed, integrated and tested for TBL within the OMP (TBL, IRAP and UAR OMP collaboration).

Service observing

Only service mode is proposed, the different observing blocks beeing queued.

There is no call for Large Programmes at TBL for 2025A.

Submission procedure

A given proposal should refer to a main thematic field (covered by a so-called *programme national*), although some proposals may concern several fields.

All proposers must submit their proposals using the software https://northstar.omp.eu/ developed by the SEDOO OMP. Proposers must register and connect to the site through ORCID (automatic procedure) in order to submit their proposals.

The presentation document, attached to the proposal, is limited to 3 pages, figures and references included (minimum font 11 for the body of the text).

Please send your TECHNICAL (only) questions to Francois André. Other questions should be directed towards either the contact person for each telescope (OHP or TBL) or towards the INSU representative Philippe Stee

Deadline for proposal submission: Wednesday October 23rd, 2024 at noon (Paris time).

Philippe Stee INSU-AA representative