

# Chilean Telescope Time Allocation Committee

## Semester 2022A Call for Proposals 1.0<sup>1</sup>

The Chilean Telescope Time Allocation Committee (CNTAC) invites the Chilean community to submit proposals for observations during the 2022A semester at the following facilities that have signed agreements with Universidad de Chile:

- **CTIO:**

BLANCO, SOAR, SMARTS (0.9m, 1.5m & 1m), PROMPT, SARA, LCOGTN (0.4m & 1m), KASI, and T80S.

- **LCO:**

Baade, Clay, and Swope

In addition, and following a petition of the ESO-Chile Committee, the CNTAC also invites the community to submit proposals for the following **ESO hosted Telescopes**:

- Euler, REM, TRAPPIST, Danish, MPG 2.2m, TAROT, SPECULOOS Southern Observatory (SSO) and ExTra.

The submission deadline for semester 2022A is:

**Friday October 15, 2021 at 12:00 p.m. (noon, Chilean continental time)**

We would like to remind the community that different facilities finish their respective telescope schedules at different times and only when these become available we are able to communicate the CNTAC outcomes since scheduling constraints can impact program feasibility. Also, please, be aware that observing semesters vary from observatory to observatory. For more information, please look at each facility web page or contact the scientists in charge.

## 1. Policies

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<sup>1</sup> Highlighted regions represent text that has been modified from the previous call for proposals.

The CNTAC has established specific rules regarding eligibility, duration of the projects, and telescope assignment.

### **1.1 Eligibility:**

Starting with the 2017B Call, the CNTAC has chosen to follow the eligibility rules approved by SOCHIAS during his 2017 meeting. According to these, eligible principal investigators (PIs) are the following individuals:

**Faculty:** Researcher hired by a Chilean Institution (CI) in a full-time, permanent position (equivalent to tenure-track) in any of the usual contract variations: *honorarios, contrata, planta*, etc.

**Graduate Student:** with a support letter from a faculty satisfying the point above and from the same institution.

**Postdocs:** Postdoctoral researcher with a fixed-term contract (including “contrato a honorarios”) in a CI, hired at least half-time and for a minimum of six months. They can apply from the moment they accept the position. After that, to be eligible for a given cycle, they must hold their postdoctoral position at least until the beginning of the cycle when their observations would be carried out.

**Visitor Professor:** Like postdocs plus the participation of a Co-I who satisfies the first point.

**Adjunct Researchers:** To be eligible as an Adjunct Faculty (or equivalent position) the researcher must have at least a half-time position (must spend half of her/his time at the CI). If the primary institution of the Adjunct is not a CI, and it grants access to telescope time in Chile, then the Adjunct cannot apply to those telescopes. Retired or Emeritus Professors qualify automatically in this category.

The original eligibility rules can be found at:

<http://sochias.cl/tiempo-de-observacion/acceso-a-tiempo-de-observacion>

SOCHIAS will maintain a “white-list” of eligible PIs. This white-list is created with the help of all department Chairs, so we encourage you to verify that you have been included. The current list can be found at: <http://sochias.cl/lista-blanca/>

**1.2. Extension of projects:** Proposals are reviewed by the CNTAC on a semester by semester basis (except, whenever appropriate, for the du Pont, Swope, ASAS-SN and Warsaw telescopes which are assigned on a yearly basis).

A proposal can request the following special status of long-term program and/or large program. If the proposed project fulfills the criteria for both, it must comply with the requirements for both status.

1.2a. Long-term programs. The CNTAC will give special attention to proposals specifying their long-term nature (more than one semester). The maximum duration of a long-term program is currently 4 semesters.

Requirements: (1) specify this status request in the application form. (2) include an additional page justifying the need for long-term status and total duration. (3) When filling out the online form, in the ‘requested time’ field, please enter the time requested EACH semester, and not the total time

requested. (4) In case long-term status is granted, a status report must be submitted each subsequent semester to inform the CNTAC of the progress being made.

Reports from long-term programs are due with the regular CNTAC deadline each semester, and must be submitted using the online form, as a regular proposal. The CNTAC reserves the right to terminate long-term status if progress is deemed insufficient or if the PI fails to send a report.

1.2b. Large programs. Proposals requesting 50% or more of the time allocated to the CNTAC in any semester on the Clay, Baade, Blanco, SOAR, and MPG2.2m and Euler telescopes, will be considered large-programs.

Requirements: (1) specify this status request on the application form. (2) submit a work plan (1-page limit) specifying the contributions of all Co-Is and a data management plan. (3) include in the proposal a commitment to make the data public after one year.

1.2c. Student Training Proposals. In addition to normal, large and long-term programs, CNTAC will also welcome proposals requesting time for student training purposes (Training programs). These proposals will be ranked below all feasible scientific proposals on the telescope. Training proposals should include the same components and respect page limits as normal programs (see section 2; a scientific justification, current project status, technical justification) and should include a half-page work plan. The latter should include at least the following items: number of students benefited, the layout of the assignment or exercise, the goals of the educational project, and previous experience of PI. Proposals granted time on this category are not entitled to any special consideration by the observatory regarding the number of visiting observers.

**1.3. “Fast track” CfP:** Occasionally, some telescopes have been undersubscribed. In the event that time cannot be fully allocated, and in order to optimize Chilean resources and avoid late-time requests, a second "fast track" call will be issued soon after the CNTAC process, including all telescopes with remaining time. Fast-track proposals will be handled directly by the CNTAC Chair.

**1.4. Acknowledgments:** The CNTAC asks its PIs to include the identification number of the program in any publication that makes use of data obtained through a CNTAC proposal.

**1.5. PI commitment:** Through her/his application the PI is fully committed to carry out such observations. The PI or one of the Co-investigators listed on the proposal is expected to be present at the telescopes on the assigned nights (unless service or remote mode was assigned). In the event that the PI cannot make use of such nights for the scientific program approved, she/he must immediately communicate the problem to the Chairman of the CNTAC who will reassign such time to another applicant based on the ranking previously established by the CNTAC.

**1.6. COVID-19 Considerations:** At the time of the release of this Call, some sites are still under minimal or restricted operations. Please consider that there is a possibility that observations will be carried out under remote or service mode even at facilities that only offered visitor mode before the shutdown.

## 2. Proposal submission

Submission is through a web form found at <http://www.cntac.cl>. **The system will be open to receive submissions starting on Tuesday September 21, 2021.**

**IMPORTANT:** Both PIs and Co-Is will need to be registered in the web system. In addition, PIs need a confirmation of eligibility before being able to create proposals. Review of eligibility according to rules specified in §1.1 is done manually and **might take up to 48 hours** for new enrollments. If your status has changed from previous semesters, you need to contact [cntac@das.uchile.cl](mailto:cntac@das.uchile.cl) at least one week prior to the deadline.

**\*\*PLEASE REGISTER NOW RATHER THAN WAITING TO THE LAST MINUTE\*\***

As part of the web system, PIs need to enter directly into the web form information such as Abstract, Co-Is, Telescope, Instrument, Time requested, Preferred Dates, Moon requirements, etc. In addition, the PI will be asked to upload a pdf file that includes:

- Scientific aim and rationale (3 page limit\*).
- A description of the current status of the project including publications, identification number(s) of previous allocated proposal(s) if any, and expected involvement of the chilean community (1 page limit\*).
- Technical description including explanation of 'minimum time' selected (1 page limit\*).
- Justification of long-term status if applicable (1 page limit\*).
- Work plan for large programs, if applicable (1 page limit\*).

**\*All the above page limits include figures, tables and references of each section.**

This CfP is being distributed together with a template latex file to write your proposal, which is also [available here](#). Use of this template is **MANDATORY**. Tampering with the template is not allowed and will result in the rejection of the proposal. Tampering includes, but is not limited to: changing font sizes, adjusting margins, etc. It is allowed to remove the comments that the template has, as they are only meant as placeholders.

**A complete proposal will consist of no more than five pages of text (including figures, tables and references) using the template described above** (seven pages for large programs that are also long-term). While the website will accept longer pdf files, proposals that do not adhere to the maximum length per section **will be rejected by the panel.**

Students must also upload a letter from his/her supervisor (holding the status of Chilean astronomer). Without this letter the system will not allow submission of the proposal. If the data requested is identified as critical for a graduate student's thesis at a Chilean institution, it is mandatory to briefly explain the relevance of the data within the thesis and include the expected date of thesis defense.

### 3. General Information

The use of the 'minimum time' in all proposals is **strongly** recommended. The 'minimum time' will be used by the CNTAC in several situations such as: when a proposal is close the cut line and the full requested time cannot be assigned, while a shortened version of the project could benefit from a fraction of the full request; the CNTAC might find a project too risky and decide that a shorter 'pilot program' would be better suited; etc. If the PI does not make use of the 'minimum time' it is then understood that this kind of adjustments are not to be applied by the CNTAC (the minimum time possibly assigned will be the total requested time).

Questions regarding the submission process should be sent to [cntac@das.uchile.cl](mailto:cntac@das.uchile.cl). Please include the keywords "**CNTAC 2022A**" in the subject of the message.

Rafael Brahm, Andrés Jordán and Nestor Espinoza developed at PUC a suite of pipelines for echelle spectrographs called CERES which are publicly available and documented in Brahm et al 2017, PASP, 129, 034002. CERES can reduce echelle spectra in a fully automated way for the following spectrographs offered regularly by the CNTAC: Euler1.2m/Coralie, DuPont2.5m/Echelle, MPG2.2m/FEROS, Magellan6.5m/MIKE, Magellan6.5m/PFS. CERES includes routines for the computation of precise radial velocities and bisector spans via the cross-correlation method, and an automated algorithm to obtain an estimate of the atmospheric parameters of the observed star.

### 4. Facilities available in the semester 2022A

A description of the instrumentation available this semester can be found through the following web pages or contact person:

- CTIO/Las Cumbres Observatory: <http://lco.global>
- CTIO/T80S: Contact person: Claudia Oliveira ([claudia.oliveira@iag.usp.br](mailto:claudia.oliveira@iag.usp.br))
- LCO (Magellan telescopes): <http://www.lco.cl>
- EULER: Contact person: Maxime Marmier ([Maxime.Marmier@unige.ch](mailto:Maxime.Marmier@unige.ch))
- REM: <http://www.rem.inaf.it>. Emilio Molinari ([emilio.molinari@inaf.it](mailto:emilio.molinari@inaf.it))
- TRAPPIST: <https://www.trappist.uliege.be>
- Danish: Contact person: Uffe GrMe Jorgensen ([uffegj@nbi.dk](mailto:uffegj@nbi.dk))
- MPG 2.2m: <http://www.eso.org/sci/facilities/lasilla/telescopes/2p2/index.html>
- TAROT Contact person: Michel Boer ([Michel.Boer@unice.fr](mailto:Michel.Boer@unice.fr))

Specific guidelines for CNTAC proposals are described in what follows.

## 4.1 CTIO Facilities

### Blanco 4m

The 2022A cycle begins on February 1, 2022 and ends on July 31, 2022.

Nights/Hours allocated to CNTAC: 16 nights

Website: <https://noirlab.edu/science/programs/ctio/telescopes/victor-blanco-4m-telescope>

General information:

<https://noirlab.edu/science/programs/ctio/telescopes/victor-blanco-4m-telescope>

Instruments available:

Dark Energy Camera (DECam)

<https://noirlab.edu/science/programs/ctio/instruments/Dark-Energy-Camera>

Cerro Tololo Ohio-State Multi-Object Spectrograph (COSMOS)

<https://noirlab.edu/science/programs/ctio/instruments/COSMOS>

It is possible that observations will only be possible in remote observing mode during at least the first part of 2022A due to restrictions related to COVID19. Information on remote observing with DECam and COSMOS is available from

<https://noirlab.edu/science/observing-noirlab/observing-ctio/observing-blanco/cerro-tololo/Remote-Observing-Blanco>

### SOAR

The 2022A cycle begins on February 1, 2022 and ends on July 31, 2022.

Nights/Hours allocated to CNTAC:16 nights

Website: <https://noirlab.edu/science/programs/ctio/telescopes/soar-telescope>

SOAR supports allocations in half-nights, but these are subject to each partner finding within their own community a suitable program to share the nights. Hence, the CNTAC does not encourage this type of application.

Queue scheduling: For semester 2022A, SOAR will continue to offer queue time through the AEON network (<https://noirlab.edu/science/observing-noirlab/observing-ctio/observing-soar/aeon>) Because

we have a stable operation, we can now confidently support proposals that require the flexibility the AEON queue offers, in particular programs requiring small amounts of time spread over the semester, or where targets are not entirely predictable. AEON remains the recommended choice for programs with a large number of targets distributed over the sky, as well as those where monthly or bi-weekly cadences are required. We cannot commit to supporting higher cadences (e.g., weekly) unless demand increases sufficiently; exceptions may be possible where the higher cadence is only required for a portion of the semester. Note that we can and do support observations of solar system objects using non-sidereal tracking.

At present, we can only commit to supporting the Goodman spectrograph in 2022A, however we now support both red and blue cameras and can add configurations where demand warrants. Time is allocated based on TAC priority and the AEON queue is currently filled at 100%, so the expected fraction of clear time is the same as for classical observing. Investigators receiving time through all SOAR partners are eligible to participate; time continues to be allocated by the individual partners.

Please consult the AEON pages for further details and for contact information if you have questions the website doesn't address.

Targets of Opportunity: SOAR support target of opportunity programs; for specifics of the policy see <https://noirlab.edu/science/observing-noirlab/observing-ctio/observing-soar/proposing-soar/targets-of-opportunity-overview> . To make life easier for all involved, please include "ToO Proposal" in your proposal title.

**Instruments available:**

Goodman: Goodman Spectrograph

<https://noirlab.edu/science/programs/ctio/instruments/goodman-high-throughput-spectrograph>

SOI: SOAR Optical Imager

<https://noirlab.edu/science/programs/ctio/instruments/soi>

TripleSpec4.1 (ex-ARCOIRIS): Cross-dispersed, single-object, longslit, IR imaging spectrograph

<https://noirlab.edu/science/programs/ctio/instruments/triplespec41-nir-imaging-spectrograph>

Spartan: Spartan IR Imager

<https://noirlab.edu/science/programs/ctio/instruments/spartan-near-ir-camera>

SAM: SOAR Adaptive Module

<https://noirlab.edu/science/programs/ctio/instruments/sam>

HRCAM: High-Resolution Camera

<https://noirlab.edu/science/programs/ctio/instruments/visitor-instruments/HRCam>

SAMHR: SAM + HRCAM

<https://noirlab.edu/science/programs/ctio/instruments/sam>

<https://noirlab.edu/science/programs/ctio/instruments/visitor-instruments/HRCam>

SIFS: SOAR Integral Field Spectrograph

<https://noirlab.edu/science/programs/ctio/instruments/sifs>

## **SMARTS 0.9m & 1.5m**

Cycle 2022A begins on February 1, 2022 and ends on July 31, 2022.

Nights/Hours offered in this call: 180 hours on 1.5m, 9 nights on 0.9m

Website: <http://www.astro.gsu.edu/~thenry/SMARTS/>

The Smarts 0.9m and 1.5m telescopes at CTIO are operated by the SMARTS Consortium, and time will be available to CNTAC users in 2022A via the usual proposal process.

### **0.9m --- CFCCD imaging camera**

The 0.9m + CFCCD is available in user mode only\*\*. For more information on the 0.9m telescope, please contact Dr. Todd Henry at [thenry@astro.gsu.edu](mailto:thenry@astro.gsu.edu).

\*\*Note that at the time of the release of this Call visitors are still not allowed back at the 0.9m and it is not certain when the situation will change.

### **1.5m --- CHIRON fiber-fed cross-dispersed echelle**

The 1.5m + CHIRON (fiber-fed cross-dispersed echelle) is available in service mode only with queue scheduling. Additional information about CHIRON can be found at <http://www.ctio.noirlab.edu/~atokovin/echelle> . For more information on the 1.5m, please contact Dr. Todd Henry at [thenry@astro.gsu.edu](mailto:thenry@astro.gsu.edu).

## **SMARTS 1.0m**

Cycle 2022A begins in January 2022 and ends in June 2022.

Nights/Hours allocated to CNTAC: 180 hours

Website: Under Development

Telescope: Closed tube Boller and Chivens 1.0m, f/10.5.

Camera: Apogee F42 with 13.5um square pixels with 2048x2048 array. Note that the Y4KCam has been removed and is no longer available.

Thermoelectric cooled to -30C.

Filter Wheel: FLI 12 position 50mm diameter

Filters: Open (None), SDSS ugriz, Johnson BVRIZ

Image Scale: 0.26"/pixel

Binning options: 1x1 through 6x6

Field of View: 9x9 arc-minutes.



**Notice:** A new larger format camera may be installed in 2021. Due to COVID, it is unclear when this may occur. This will affect the availability of filters. The SMARTS team will work with observers to collect their observations before a camera change. SMARTS 1.0m is a remotely queue operated 1.0m telescope at Cerro Tololo. The telescope is optimized for faint asteroid astrometry. Ideal for exposure times less than 120 seconds and excellent for co-added images due to the low overhead time. Bin 1x1 overhead with filter change is ~6 seconds. The telescope has a slow slew rate and is not optimized for rapid observations of multiple targets. Observations request should be at least 30 minutes in length and could be for an entire night.

**Observers:** Once time is allocated, you must contact facility director Tyler Linder (tlinder34@gmail.com) well in advance to arrange queue submission. Queue requests will be submitted to Tyler Linder via email.

## PROMPT

Cycle 2022A runs from February to July.

Nights/Hours allocated to CNTAC: 10% of Skynet's observing time

Website: <https://skynet.unc.edu/sites/view?id=2>

For information on the status and use of PROMPT, please visit the listed website. The contact person is Dan Reichart, [dan.reichart@gmail.com](mailto:dan.reichart@gmail.com)

## SARA

Cycle 2022A begins in January 2022 and ends in June 2022.

Nights/Hours allocated to CNTAC: 18 nights.

Nights/Hours offered in this call: 18 nights.

Website: <http://www.saraobservatory.org>

SARA-South is a remotely-operated 0.6m telescope sited at Cerro Tololo. The Andor camera (2048<sup>2</sup> pixels with 0.342"/pixel) is back in operation.

Filters are currently SDSS ugriz, Bessel UBVRI, "white-light", zero-redshift [O III] and H-alpha, and an old set of stepped H-alpha filters about 70 Å wide with 6600, 6675, 6825, 6900, 6975 Å center wavelengths (replacement of old, deteriorating filters from these is in progress). Operation uses the RAdmin remote-management software or VNC protocol (RAdmin for Windows; for Mac users, the VPN client built into the OS for recent versions (10.10) will work properly with the CTIO VPN without an additional client) via the NOAO VPN (which needs a Cisco client that can be downloaded from NOAO; access from within Chile might have a more direct path into the CTIO local network). Our remote operation rules require new observers to eavesdrop for parts of three nights to become familiar with the system. The telescope has its own weather station and all-sky camera. A single-fiber echelle spectrograph with R ~25,000 is on site, but the fiber-pickup head was found to

be broken during the last engineering visit, was returned to Arizona for repair and awaits a site visit to replace parts.

New observers: Once time is allocated, you must contact facility director Todd Hillwig ([todd.hillwig@valpo.edu](mailto:todd.hillwig@valpo.edu)) well in advance to arrange for training on the operating software.

More detail on the SARA facilities is available in the paper

<https://iopscience.iop.org/article/10.1088/1538-3873/129/971/015002>

## Las Cumbres Observatory

Cycle 2022A begins on February 1, 2022 and ends on July 31, 2022

Nights/Hours allocated to CNTAC: 300 hours on the 1m network and 200 hours on the 0.4m network.

Website: <https://lco.global/>

Las Cumbres Observatory (LCOGT) operates robotically. Requested observations are scheduled by a single scheduling program that dynamically optimizes queues for each telescope. To benefit time-domain science, specialized scheduling modes are supported, including the ability to request cadence-driven observation sequences, a "rapid-response" (RR) mode that triggers observations to begin a few minutes after a request is submitted, and a "time-critical" (TC) scheduling mode for observations that must be made at relatively tightly constrained times that rarely occur.

The special scheduling modes are described at <https://lco.global/documentation/special-scheduling-modes/>. We expect that nearly all observations will be made in standard queue-scheduled mode. Proposals that seek RR or TC observations must explicitly justify those requests.

LCOGT's 2019B semester will begin on July 1, 2020 (to account for the extension of the current semester due to the partial network shutdown). The Chilean share of time is 300 hours on the 1m telescopes and 200 hours on the 0.4m telescopes. Requested observations may be scheduled on any of the telescopes of a given aperture in the global network. Note that time on the 2m telescopes is not currently available via request through the CNTAC. We allocate observing time by instrument and telescope class. All of our 1m telescopes are equipped with (Sinistro) imagers, but three of them are also equipped with (NRES) spectrographs. Proposals should indicate how much time they need on each instrument. The 0.4m telescopes are only equipped with (SBIG) imagers. Information on LCOGT's instruments is available at <https://lco.global/observatory/instruments/>.

Please check the status of telescopes at the LCOGT website prior to submitting your proposal, as conditions might change.

## KASI

KMTNet/Chile (<http://kmtnet.kasi.re.kr/kmtnet-monitor/>) is a 1.6m telescope with an 18Kx18K CCD Mosaic camera with a 2x2 square degree field of view. The available filters are B, V, Rc, Ic. The camera overhead time between exposures is 60 seconds. A simple scripted observational mode is available now, so multi target observation with multi filters can be conducted. It also helps to minimize the overhead time by combining tasks such as moving the telescope while downloading images etc. The essential information for scripting observation is object name, RA, DEC, Filter name, exposure time. Therefore, at least the five columns should be included in the observation method.

At KASI we use the MSCRED package in IRAF to handle the MEF images. We can provide a X-talk correction code and a preprocessing script. The observed data can be stored on the disk at CTIO for a while, then Chilean researchers can download the images via the internet. Please Note that the time shown in the table is universal time.

Nights to be offered in this call are listed below:

```
=====
  DATE (UT)   Semester
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JAN 11 - JAN 14 2022  2021B
FEB 10 - FEB 19 2022  2022A
=====
```

**IMPORTANT: Dates are in UT time NOT CLT.**

## T80S

Cycle 2022A begins on February 1, 2022 and ends on July 31, 2022.

Nights/Hours allocated to CNTAC: 17 nights (of 8 hours each)

More information:

<https://academic.oup.com/mnras/article-abstract/489/1/241/5543943?redirectedFrom=fulltext>

or in preprint form: <https://arxiv.org/abs/1907.01567>

T80S is a queue-scheduled robotic 0.8m telescope at CTIO. The telescope was designed to do a Sloan-like imaging survey in 12 filters (u',g',r',i',z' + 7 narrow-band filters). Proposers are strongly encouraged to use the full 12-filter set for their observations, as this will make the scheduling easier. Different filters are not allowed. The imager has an E2V 9.2x9.2 pixel CCD, giving 0.55 arcsec/pixel over a 1.4x1.4 degree field.

We expect that 17 nights, of 8 hours each, will be available for the 2022A semester. If the telescope is closed for technical problems or engineering for any substantial amount of time in the semester, all users will have their times proportionally reduced.

Successful proposers will be given instructions on how to format their observing plans so that they can be incorporated into the queue. In the interest of maximising the scientific return of the T80S, we advise that proposers avoid targeting fields within the footprint of the S-PLUS survey ([see this file](#)). If you want to observe targets within this region, you should contact the PI of S-PLUS (Claudia Oliveira - [claudia.oliveira@iag.usp.br](mailto:claudia.oliveira@iag.usp.br)) in advance of writing your proposal. Only raw images will be delivered. Please note that if calibration images are needed, they should be included in the proposed time.

Please note that proposals for T80S MUST include the following:

- Basic information such as: filters to be used, exposure times for each filter, number of exposures for each filter and exposure time, the precise position of the central point that is expected to be observed.
- The maximum moon brightness acceptable for the observations (in percent where 100% is a full moon).
- The minimum distance to the moon in degrees (less than 40 degrees is not recommended).
- When covering an area using multiple concomitant tiles, if there's a priority for the tiles observation, it must be specified along with the positions

Recommendations:

- If more than one frame is planned to be taken with the same filter, we recommend doing dithering of at least 10 arcsec
- The total time to be used must take into account 40s readout+overheads between each exposure
- If the goal is to cover an area using several concomitant tiles, all the positions of all tiles must be provided (we recommend calculating at least 30 arcsec overlap between concomitant tiles)
- If the project requires the observation of spectrophotometric standards for calibration, they must be provided with the position, filters, exposure times per filter and how many airmass values are expected to be observed. We can provide our standard routine of observations of photometric standard stars if the responsible for the project finds it useful, but it takes 1h20min per night and this time must be accounted for (subtracted from the total time of observation). This also must be accounted for observations during the summer when the nights are shorter (with a minimum of 6.5 hours) and the time awarded (in nights of 8 hours) will need to be divided into a larger number of natural nights. This implies more time consumed (in hours) for photometric standards observations.
- Technical information needed to elaborate the proposal can be found in Mendes de Oliveira et al. (2019, <https://ui.adsabs.harvard.edu/abs/2019MNRAS.489..241M/abstract>) and in Almeida-Fernandes et al. (2021, <https://ui.adsabs.harvard.edu/abs/2021arXiv210400020A/abstract>).

## 4.2. Las Campanas Observatory (LCO) Facilities

### General guidelines

A description of the instrumentation available for use on the Magellan and du Pont telescopes can be found at <http://www.lco.cl> .

Please note that all observers at Las Campanas are expected to be experienced and self-sufficient. All observers should read the Magellan Telescopes Observer Guidelines found at <http://www.lco.cl/lco/observer-information/visiting-observer>.

Please also note that papers published with data from Las Campanas telescopes should contain an appropriate acknowledgement of the source of the data, either in a front page footnote or by using the `/facilities{}` feature in LaTeX.

### Magellan Telescopes

For the Magellan telescopes, this CfP will cover the first semester of 2022, which will run from January 26, 2022 through July 19, 2022.

To date, CNTAC has not yet received the Magellan block schedule. It will be published at <https://das.uchile.cl/cntac/> as soon as it becomes available. We recommend checking our website regularly after Friday, September 24, 2021.

Given the current scenario, we do not expect the Magellan block schedule to be available before the close of this Call for Proposals. PIs are encouraged to *\*CLEARLY\** include in the 'Technical description' section their preferred date of observation and their acceptable range to achieve the science goals. An updated version of this Call will be issued should the schedule become available.

Observers should consider that it is expected that observing during much of the initial period in the 2022A semester will be conducted via remote operations only. Also, availability of PI instruments is highly dependent on each PI or team traveling to the observatory, which is very uncertain. This call offers these instruments, but proposers should be aware that there is no guarantee that these instruments will be available, even if the observatory opens. Information included here is based on previous semesters, and the most updated information. Questions about each instrument should be addressed to the PI.

A description of the instrumentation available for use on the Baade and Clay telescopes can be found at <http://www.lco.cl> .

Note that there is an Exposure Time Calculator for the optical slit spectrographs on Magellan (LDSS, MIKE, IMACS, and MagE). The ETC can be found at [http://alyth.lco.cl/gblanc\\_www/lcoetc/lcoetc\\_sspect.html](http://alyth.lco.cl/gblanc_www/lcoetc/lcoetc_sspect.html) .

+ Baade: IMACS (including GISMO and MMTF modules), FIRE, FourStar and MagE.

+ Clay f/11: LDSS3 and MIKE.

+ Clay f/11 PFS: PFS is a high resolution echelle spectrograph optimized for precision radial velocity measurements. PFS is a **PI instrument** and will only be available via collaborative arrangement with the instrument team. If you are interested in applying for time on PFS in the 2022A semester contact Steve Sheckman (shec@obs.carnegiescience.edu) at least two weeks before submitting a proposal. Upgrades have been made to the PFS CCD camera and spectrograph optics. Please contact Steve for updates on the progress of the upgrade.

+ Clay f/11 M2FS: M2FS is a multifiber spectrograph with both high ( $20K < R < 34K$ ) and low ( $1.5K < R < 2.7K$ ) resolution modes. M2FS is a **PI instrument** and will only be available via collaborative arrangement with the instrument team. If you are interested in using M2FS, please contact Mario Mateo (mmateo@umich.edu) for further details **before submitting a proposal**.

+ Clay f/5 MegaCam: It is expected that there will be one f/5 run on Clay early in the 2022A semester. During the f/5 run none of the other Clay instruments will be available.

+ Clay AO: There will not be a MagAO run in the 2022A semester. It is expected that there will be one (short, probably nine nights) MagAO-X (**PI instrument**) run in the 2022A semester operated on a shared risk basis. Proposals are invited for shared-risk science verification observations in collaboration with the MagAO-X team during that run. Contact the MagAO-X PI, Jared Males (jrmale@email.arizona.edu), to discuss proposals and for additional information about expected capabilities and performance.

+ Clay PISCO: There will not be a PISCO observing run in the 2022A semester.

## Du Pont

Currently, future operations of the du Pont telescope are unclear, as they depend on the commissioning of the Sloan-V project instruments.

## Warsaw Telescope

The Warsaw telescope remains closed at the time of this writing. Extensive engineering is expected once the telescope is reopened, and therefore is not offered in this call. Updates will be communicated promptly.

## 4.3. ESO Hosted telescopes

### EULER

Cycle 2022A begins on April 1, 2022 and ends on September 30, 2022

Nights/Hours allocated to CNTAC: 18 nights

Website: <https://plone.unige.ch/EULER>

The instruments on EULER are still the same: the **CORALIE** high resolution spectrograph in the visible (R=50,000) and a **CCD camera**. To comply with the operational and safety requirements\* of the EULER operation (the telescope and instrumentation is operated by the observer himself, without telescope operator, and the documentation is mostly in French), a minimum number of training nights are required for new observers (2-3). Even trained observers are required to arrive on the mountain at least 1 night before the start of her/his observing run.

**\*Please note that under the current scenario, these requirements are constantly being revised to ensure the safety of all observers and staff on site.**

### REM

Cycle 2022A begins on April 1, 2022, and ends on September 30, 2022.

Nights/Hours allocated to CNTAC: 112 hours

Website: <http://www.rem.inaf.it>

REM is a 60 cm robotic telescope that can observe simultaneously with a visible and an infrared camera. The observation will be carried out in unmanned, service mode.

Time for REM should be expressed in terms of hours. Also, different hours must be given for the two instruments (REMIR and ROS2, which can be used simultaneously, and this is in fact encouraged to not waste time) and the greater of the two counts as the requested time. The good news is infrared camera REMIR is again operational.

Information on the filter pass-bands and the limiting magnitude for both instruments can be found at the REM website under ->Instruments ->REMIR ->ROS2. The ROS2 visible camera is equipped with set of filters Sloan/SDSS g', r', i', z' and is capable of obtaining the 4 images in the 4 different filters at the same time, using dichroic.

### TRAPPIST

Cycle 2022A begins on April 1 and ends on September 30.

Nights/Hours allocated to CNTAC: Three full nights per month

Website: <https://www.trappist.uliege.be>

TRAPPIST-South is a 60 cm telescope installed in la Silla by Liège University and operated remotely from Belgium. It is exclusively devoted to photometry of exoplanets, comets and other solar system minor bodies. TRAPPIST-South is equipped with a 2Kx2K CCD camera with pixels of 0.65" and two filter wheels. One is loaded with B,V,R,exoBB,z,I+z filters and a clear slot and the other one with special NASA narrow band cometary filters (Jehin et al., The ESO Messenger, 145, 2, 2011). Three full nights per month are offered and will be allocated depending on the TRAPPIST observing schedule. They are by default allocated on day 1, 11 and 21 of each month. If the CNTAC approves a time-critical proposal that needs observation during specific nights, the TRAPPIST team will do its best to accommodate it. Note that due to the time critical and ToO nature of many TRAPPIST programs (that cannot be known 6 months in advance) the allocated nights might be shifted by one or more nights (the PI will be informed and compensated). Targets brighter than V mag 10 are not allowed as they saturate the detector and minimum exposure time is 10 seconds to avoid shutters problems. To avoid mechanical failure the filter wheel cannot be moved at a frequency higher than 1x per 4 minutes for long photometric series. The PI will be requested to prepare a sequence of observations for each target by filling in a template that the TRAPPIST team will provide, check and execute. Please account for 5 minutes of overheads for each target preset and 10s for readout time in binning 1x1. Data will be made available on a ftp server for download the next day.

**Note that fractional nights are not offered by TRAPPIST, only full night requests can be allocated.**

## Danish Telescope

Cycle 2022A begins on January 1 and ends on June 30, 2022

Nights/Hours allocated to CNTAC: 14 nights

Observing time with the Danish 1.54m telescope is offered in 2022A in **visitor mode only**. Proposal PIs must be aware that there is no technical assistance and no staff to introduce the telescope for new observers during the specified Chilean time slots. Observations in visitor mode can therefore be run only by observers having previous experience with using the telescope. The observer(s) must be approved by the telescope team before going up the mountain. For this purpose please contact Petr Pravec ([petr.pravec@asu.cas.cz](mailto:petr.pravec@asu.cas.cz)) and Uffe Jorgensen ([uffegj@nbi.dk](mailto:uffegj@nbi.dk)) well in advance.

The following time slots are currently offered:

2022 February 16/17 to February 20/21 (5 nights)

2022 March 14/15 to March 22/23 (9 nights)

The only instrument available at the Danish telescope during 2022A is a direct imaging 2k x 2k CCD camera with its main sensitivity in the red end of the spectrum and a 13.7' FOV with a pixel size of 0.39", equipped with Johnson-Cousins UBVRI, Stromgren uvby, and g2 filters. H-alpha, OII and OIII filters will be probably available too, but it is not guaranteed.



## Max-Planck-Gesellschaft (MPG) 2.2m telescope

Cycle 2022A begins April 1, 2022 and ends on September 30, 2022

Nights/Hours allocated to CNTAC: 17 nights

Website: <https://www.eso.org/sci/facilities/lasilla/telescopes/national/2p2.html>

The MPG 2.2m telescope hosts the following instruments:

-WFI: Wide Field Imager, a focal reducer-type camera at the Cassegrain focus and with a field of view of 34'x33'

-FEROS: A state-of-the-art bench-mounted, high-resolution, environmentally controlled, astronomical echelle spectrograph.

-GROND: An imaging instrument especially built to investigate Gamma-Ray Burst Afterglows and other transients simultaneously in seven filter bands. Several dichroic beam splitters feed light into three NIR channels and four visual channels, each equipped with its own detector. There is no service observing. Proposal PIs must be aware that there is only rudimentary support at the telescope.

## TAROT

Cycle 2022A begins on April 1 and ends on September 30.

Nights/Hours allocated to CNTAC: approximately 60 hours.

Website: <http://www.tarotnet.org>.

TAROT (Rapid Action Telescope for Transient Objects) is a set of three, very fast moving (1 second), optical robotic telescopes able to observe from the beginning a Gamma Ray Burst (GRB). One is located in Chile (TCH), another in France (TCA) and another (TRE) in La Reunion Island (France Overseas). Satellites detecting GRBs send timely signals to the TAROT network, which in turn is able to give a sub-arc second position to the community. The data from the TAROT telescopes are useful to study the evolution of GRBs, the physics of the fireball and of the surrounding material. The TAROTs are also used for the multimessenger follow-up of the Advanced Virgo and LIGO gravitational observatories, as well as the ANTARES high energy neutrino deep-sea facility. The TAROT network also observes other sources like SNs, RR Lyrae, occultation of solar system bodies, and more generally is adapted to the study of variable/rapid phenomena.

There is the possibility of asking for time on the 3 TAROTs through the CADOR server. Chilean users can use 5% of the total system, an amount larger than 10% on a single system. There is no need to balance the observations between telescopes, the total quota can be spent on TCH only (in that case with a limit of 10%), but if the user wishes, then they can use any of the 3 telescopes.

The scheduling system of TAROT scan requests are in the form of several "scenes", each requiring a set of actual telescope configurations (exposure time, filter, coordinates, eventually time constraints). An interface on CADOR allows the user to build the requests. The TAROT web pages are at <http://www.tarotnet.org>.

When a program is approved by the Chilean TAC, a user/password will be sent to the PI, to access the VPN and wiki pages of TAROT. Note that we are planning several changes in the TAROT system. Please note that the data taken in Chile cannot be downloaded directly from the telescope, but it needs to be transported to a server in France first. This may result in a significant delay if travel restrictions increase.

## **SPECULOOS Southern Observatory (SSO)**

The 2022A cycle begins on April 1, 2022 and ends on August 31, 2022 .

Nights/Hours allocated to CNTAC: 66 nights per cycle, only one telescope is available each of these nights.

Website: [speculoos.earth](http://speculoos.earth)

Contact person: Michael Gillon ([michael.gillon@uliege.be](mailto:michael.gillon@uliege.be))

The SPECULOOS Southern Observatory (SSO) is composed of four identical 1m robotic telescopes located at ESO Paranal Observatory. It is operated by a consortium composed of the Universities of Liege (PI), Cambridge, and Birmingham. This facility is essentially devoted and optimized to conduct exoplanet transit search and observations, and in particular to carry out the project SPECULOOS (Search for habitable Planets EClipping ULtra-cOOl Stars) (Delrez et al. 2018 <http://arxiv.org/pdf/1806.11205>).

For more information on SSO and its availability to the Chilean astronomers, please download [this document](#). A list of restricted targets for SPECULOOS observations is available upon request to [cntac@das.uchile.cl](mailto:cntac@das.uchile.cl).

SSO Chilean nights schedule\*

Dates will be published as they become available.

Please note that observations are conducted in a different telescope for each block of 2-3 nights.

## **ExTrA: Exoplanets in Transit and their Atmospheres**

Cycle begins on April 1, 2022, and ends on October 31, 2022

Website: <https://arxiv.org/abs/1508.06601>

Contact person: Xavier Bonfils ([xavier.bonfils@univ-grenoble-alpes.fr](mailto:xavier.bonfils@univ-grenoble-alpes.fr))

Nights/Hours available through the CNTAC: 3 nights each month (18 nights / semester)

## Spectro-photometry of stars with J mag = 5-13

ExTrA is an experiment articulated around three 60-cm telescopes installed in La Silla. It explores a novel method to perform differential photometry by adding spectroscopic resolution to classical aperture photometry. To do so, each telescope is equipped with a fiber positioner that can route the light of selected stars to a spectrograph. Each telescope can observe 5 stars in a circular field of view of 1-degree diameter, plus the sky background next to each star. The spectrograph is thus fed by 30 fibers (15 stars + 15 skies). It works in the near-infrared ( $\sim 0.95\text{-}1.55\ \mu\text{m}$ ) with a dispersive power of either  $R\sim 20$  or  $R\sim 200$ . ExTrA has been designed to detect and characterize transiting extra-solar planets with a special focus on M- and L-dwarf systems (that particular science case should be considered protected).

Currently, ExTrA is running in a semi-commissioning mode, so as to explore and solve the remaining issues of our new method, but also targeting scientifically valuable targets at the same time. **We are ready to offer ExTrA to the Chilean community on a risk-shared basis.** ExTrA remains highly complex though and observations cannot be prepared without our assistance. We can perform service observations on fixed dates each month (1st, 15th, and 30th of each month).