

## Chilean Telescope Time Allocation Committee Semester 2019B Call for Proposals

The Chilean Telescope Time Allocation Committee (CNTAC) invites the Chilean community to submit proposals for observations during the 2019B semester at the following facilities that have signed agreements with Universidad de Chile:

- **CTIO:**

BLANCO, SOAR, SMARTS, PROMPT, SARA, LCOGTN, KASI, ASAS-SN and T80S.

- **LCO:**

Baade, Clay, Dupont, Swope, and CHAT.

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

- EULER, Danish, MPG 2.2m, REM, TAROT and TRAPPIST.

The submission deadline is:

**Monday April 15, 2019 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

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

### 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/>

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

The CNTAC can give special attention to proposals specifying their long-term nature (more than one semester). In the case of long-term programs it is required that the applicants indicate the long-term nature of the program and the total duration. A summary of the need for long-term status is also required (1-page limit). 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.** The CNTAC reserves the right to terminate long-term status if progress is deemed insufficient or if the PI fails to send a report.

In addition, special attention will be given to proposals requesting 50% or more of the available time in any semester on the following telescopes: Clay, Baade, Blanco, SOAR and MPG2.2m. These proposals will be considered large-programs. Approved programs will need to submit a work plan (1-page limit) specifying the contributions of all Co-Is and a data management plan and will commit to make their data public after one year (through ChiVO).

A proposal can be both long-term and large. If the proposed project fulfills the criteria for both it must include the additional page justifying the need for long term status and the page describing the Co-I's responsibility and data management plan, as well as the commitment to make the data public after one year.

**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.

**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.

**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.

## 2. Proposal submission

Submission is through a web form found at <http://www.cntac.cl>

**IMPORTANT:** Both PIs and Co-Is will need to be registered in the web system. PIs will need to wait for confirmation of eligibility before being able to submit proposals. You will receive an email with the confirmation. Please have in mind that the confirmation may take up to 48 hours to be sent.

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

As part of this new system, PIs will 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 including figures/tables and references).
- A description of the current status of the project including publications (1 page limit).
- Technical description (1 page limit).
- Justification of long-term status if applicable (1 page limit).
- Work plan for large programs, if applicable (1 page limit).

This CfP is been distributed together with a template latex file to write your proposal, which is also available at [http://www.das.uchile.cl/das\\_cntac.html](http://www.das.uchile.cl/das_cntac.html). Tempering with the template is not allowed. Use of the template is mandatory from 2019B, even though a transition period of two semesters will be allowed for those who do not comply with this rule.

**A complete proposal will consists 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, the CNTAC will not be under any obligation to read additional text.

**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.**

### **3. General Information**

The use of the 'minimum time' in all proposal 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.

Questions regarding the submission process should be sent to [cntac@das.uchile.cl](mailto:cntac@das.uchile.cl). Please include the keywords **"CNTAC 2019B"** 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. Instrumentation available in the semester 2019B

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

- CTIO (incl. SOAR): <http://www.ctio.noao.edu/telescopes/telescopes.html>
- CTIO/PROMPT: <https://skynet.unc.edu/sites/view?id=2>
- CTIO/SARA: Contact person: William Keel ([wkeel@bama.ua.edu](mailto:wkeel@bama.ua.edu))
- CTIO/Las Cumbres Observatory: <http://lco.global>
- ASAS-SN: Contact person: José Luis Prieto ([jose.prieto@mail.udp.cl](mailto:jose.prieto@mail.udp.cl))
- LCO : <http://www.lco.cl>
- CHAT: Contact person: Andrés Jordan ([ajordan@astro.puc.cl](mailto:ajordan@astro.puc.cl))
- Danish Contact person: Uffe GrMe Jorgensen ([uffegj@nbi.dk](mailto:uffegj@nbi.dk))
- EULER: Contact person: Maxime Marmier ([Maxime.Marmier@unige.ch](mailto:Maxime.Marmier@unige.ch))
- TAROT Contact person: Michel Boer ([Michel.Boer@unice.fr](mailto:Michel.Boer@unice.fr))
- REM: <http://www.rem.inaf.it>. Emilio Molinari ([emilio.molinari@inaf.it](mailto:emilio.molinari@inaf.it))
- MPG 2.2m: <http://www.eso.org/sci/facilities/lasilla/telescopes/2p2/index.html>

Specific guidelines for CNTAC proposals are described in what follows.

#### 4.1 CTIO Facilities

The observing period covered by CTIO runs from **1 August 2019 - 31 January 2020**.

##### BLANCO

For 2019B 16 nights are being made available to the CNTAC corresponding to Chile's regular 2019B allocation, plus up to an additional 6 nights to compensate Chile for time that could not be allocated in 2018B. At the sole discretion of the CNTAC some or all of these additional nights will be scheduled during 2019B if demand is sufficient to use all this time. For more information, visit <http://www.ctio.noao.edu/noao/content/Victor-Blanco-4-m-Telescope>

Instruments available:

DECam <http://www.ctio.noao.edu/noao/content/dark-energy-camera-decam>

COSMOS <http://www.ctio.noao.edu/noao/content/COSMOS>

## SOAR

14-15 nights will be available for allocation by the CNTAC. All instruments that were available in the previous semester are currently available. The SOAR website is located at: <http://www.ctio.noao.edu/soar/>

Prospective users are reminded that:

- SOAR **does** support **target of opportunity proposals**. To make life easier for all involved, include **"ToO Proposal"** in your proposal title. The policy has been revised (again) for 2019B, to allow more interrupts to be allocated, and to separate support allocations for gravitational-wave-event follow-up. On a trial basis, SOAR will be scheduling a few nights in 2019B to provide compensation to observers who lose time to ToO observations. Compensation to individual observers (as opposed to NOAO or other partners in general) is not guaranteed, however. See <http://www.ctio.noao.edu/soar/content/proposing-soar> for the overall SOAR ToO policy.
- 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 opportunity:** We hope to schedule a modest fraction of SOAR nights in queue mode in 2019B. Programs that would be included in this program must meet the following conditions:
  - Programs must be feasible in SOAR's current remote/classical mode
  - Proposers require observations at a cadence of 2-4 weeks, set by the scheduled queue nights
  - Proposers can use the Goodman spectrograph with the red camera and 400 l/mm grating
  - Proposers have prior experience with the telescope and instrument
  - For further details, including how to express interest in participation, please see the SOAR web pages, which include appropriate contact information.

Instruments available:

Goodman <http://www.ctio.noao.edu/soar/content/goodman-high-throughput-spectrograph>

SOAR Optical Imager (SOI) <http://www.ctio.noao.edu/soar/content/soar-optical-imager-soi>

Spartan IR Imager <http://www.ctio.noao.edu/soar/content/spartan-near-ir-camera>

SAM <http://www.ctio.noao.edu/soar/content/soar-adaptive-optics-module-sam>

TSpec The TripleSpec instrument (ex-ARCOIRIS, re-baptized TripleSpec 4.1) is being commissioned in March, with possible science verification in April and June. People interested in proposing can do so using performance information from the Blanco telescope (<http://www.ctio.noao.edu/noao/content/Arcoiris>). Any time granted in 2019B will be shared-risk. See the SOAR web pages for further details.

## **SMARTS**

Time on the 0.9m, 1.3m, and 1.5m telescopes at CTIO are operated by the SMARTS Consortium, and will be available to CNTAC users in 2019A via the usual proposal process. Instruments and additional information are as follows:

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

<http://www.astro.yale.edu/smarts/0.9m.html>

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

The 0.9m + CFCCD is available in user mode only. In 2019B, 12 nights are available. For more information on the 0.9m, please contact Dr. Todd Henry at [thenry@astro.gsu.edu](mailto:thenry@astro.gsu.edu).

### **1.3m --- Closed during 2019B**

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

http: // [www.astro.yale.edu/smarts/1.5m.html](http://www.astro.yale.edu/smarts/1.5m.html)

The 1.5m + CHIRON (fiber-fed cross-dispersed echelle) is available in service mode only with queue scheduling. In 2019B, 90 hours are available. Additional information about CHIRON can be found at <http://www.ctio.noao.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)

## **PROMPT**

Please see details at: <https://skynet.unc.edu/sites/view?id=2>

The contact person is Dan Reichart, [dan.reichart@gmail.com](mailto:dan.reichart@gmail.com)

## **SARA**

SARA-South is a remotely-operated 0.6m telescope sited at Cerro Tololo. Its imager uses a temporary FLI 2048<sup>2</sup> CCD with 0.608" pixels; a new Andor camera was installed in 2018 but found to have a defect that has required its return to Northern Ireland. We anticipate its return to Chile later in 2019. (The Andor camera has 2048<sup>2</sup> pixels with 0.342"/pixel scale).

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  $R \sim 25,000$  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>

The SARA 2019B schedule will run from July through December.

## Las Cumbres Observatory

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 June 1, 2019. 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. Time on the 2m telescopes, instrumented with optical imagers and low-dispersion spectrographs, is available through trades with LCOGT. Proposals may request time on those telescopes if required. 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/>.

## 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 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 researcher can download the images via internet. Please Note that the time shown in the table is universal time.

The telescope time for 2019B is fixed to the following block:

```
=====
DATE (UT)      Moon phase  hours  Note
=====
OCT 22 - OCT 31 2019 (Last Quarter) 80.36 2019B
NOV 28 - DEC 07 2019 (New Moon)    68.90 2019B
JAN 05 - JAN 14 2020 (First Quarter) 68.74 2019B
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FEB 10 - FEB 19 2020 (Full Moon)   79.84 2020A
=====
```

Please note that the time is universal time not Chilean time.

## T80S

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, listed below). Proposers are strongly encouraged to use the full 12-filter set for their observations, as this will make the scheduling easier. 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 2019B 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 file on CNTAC webpage). 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. Due to limited resources, we cannot guarantee to pipeline-reduce any of the Chilean Time data at this time, but we will deliver the raw images and appropriate calibration frames. Please note that if calibration images are needed, they should be included in the proposed time.

## **ASAS-SN**

Contacts: José L. Prieto: [jose.prietok@mail.udp.cl](mailto:jose.prietok@mail.udp.cl) & Kris Stanek: [stanek.32@osu.edu](mailto:stanek.32@osu.edu)

We are pleased to announce the availability of data from the ASAS-SN Project for members of the Chilean community in fulfillment of the agreement to provide 10% access to the system.

The All-Sky Automated Survey for SuperNovae (ASAS-SN) is an all-sky, V/g-band only variability survey that uses 4x14-cm telescopes in LCOGTN nodes in Haleakala (Hawaii), CTIO, McDonald Observatory, and SAAO. The survey depth in single exposures is  $17 > V/g \text{ (mag)} > 10$  and the cadence is  $\sim 1$  night. The images obtained by the survey have a pixel scale of 7.5"/pixel and the FWHM of the PSF is  $\sim 15''$ . The real-time transient survey has been working since May 2013 from Haleakala and since May 2014 from CTIO.

For more details of the survey, see

<http://www.astronomy.ohio-state.edu/~assassin/index.shtml>

Sky coverage maps with the number of times that each field has been observed since the survey started and in the last year are available at:

[http://www.astro.udp.cl/~jlprieto/ASASSN\\_fields.html](http://www.astro.udp.cl/~jlprieto/ASASSN_fields.html)

In this call, successful Chilean proposals will have access to reduced (up to flat-fielding and astrometric calibration) V/g-band images of up to 5% of the fields observed in 2018 from ASAS-SN sites or access to V/g-band light curves, including all the historical data, of up to 1000 sources all-sky per proposal. The light curves are obtained using an aperture photometry pipeline. We expect that up to four proposals will be selected for this 2019 call (depending on

the data volumes requested). We anticipate continued annual calls as long as ASAS-SN is operating on Cerro Tololo.

Publications resulting from ASAS-SN images provided under this process should include an acknowledgement as indicated by the ASAS-SN team. Given that the light curves are higher-level data products, publications resulting from successful proposals that use light curves must include a small core ASAS-SN team (builders) as co-authors.

Proposals requesting more than 5% of the fields or >1000 sources can be considered but they would require a collaborative agreement with the ASAS-SN team. In the case of accepted proposals that requested more than 5% of the fields or more than 1000 sources, a number of ASAS-SN team (builders) should be included as co-authors as agreed upon with the ASAS-SN team."

Proposals should include

- 1) the scientific objectives of the proposed project; importantly, these may be aligned with the core objectives of ASAS-SN, or alternatively they may extend the objectives, within the current targets and data products of the project. We strongly suggest that interested scientists contact the Prof. Jose L. Prieto (UDP), [jose.prietok@mail.udp.cl](mailto:jose.prietok@mail.udp.cl), with any questions about the science objectives of ASAS-SN and the data products of the project.

- 2) a description of the data products desired, either g/V-band images or g/V-band light curves, and the selection criteria for those data products. Specifically: which g/V-band images, amounting to  $\leq 5\%$  of fields observed, or which g/V-band light curves, amounting to  $\leq 1000$  sources.

Please note that the reduced data and light curves will be the as-produced data product. Please see Kochanek et al. (2017, <http://adsabs.harvard.edu/abs/2017PASP..129j4502K>) for some details on the light curves. In some cases the automated reductions do not produce optimal results (for example, the [astrometry.net](http://astrometry.net) astronomic solution fails). Given the volume of data continuously coming in, the team cannot resolve problems with individual data products.

Evaluation of proposals will be carried out annually by the regular CNTAC, with previous consultation to the ASAS-SN team regarding technical feasibility. For additional questions about this opportunity, please contact Prof. Jose L. Prieto (UDP) at [jose.prietok@mail.udp.cl](mailto:jose.prietok@mail.udp.cl).

## 4.2. 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>.

### Magellan Telescopes

For the Magellan telescopes, this CfP will cover the second semester of 2019, which will run from July 9 through January 16, 2020.

**Magellan Draft Block Schedule (subject to possible changes and adjustments):**

**Baade: 11, 30, 31 Jul; 14, 15 Aug; 21, 22, 23 Sep; 17, 18 Oct; 5, 6, 25 Nov; 9, 16, 17, 28, 29 Dec  
Clay: 22, 23 Jul; 5, 6, 26, 27 Aug; 15, 16, 17 Sep; 21, 22 Oct; 11 Nov; 22, 23 Dec; 14, 15, 16 Jan**

An Exposure Time Calculator for the optical slit spectrographs on Magellan (LDSS, MIKE, IMACS, MagE). The ETC is 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: The new CCD for LDSS3 has been commissioned and has become the default detector for LDSS3. The new CCD has an extended red response, the performance is described in the paper to be found at [http://snap.lbl.gov/ccdweb/estrada\\_et\\_al\\_proc\\_spie\\_7735\\_77351R\\_2010.pdf](http://snap.lbl.gov/ccdweb/estrada_et_al_proc_spie_7735_77351R_2010.pdf)
- + Clay f/11: 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 2019B semester contact Steve Sackett ([shc@obs.carnegiescience.edu](mailto:shc@obs.carnegiescience.edu)) 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 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](mailto:mmateo@umich.edu)) for further details before submitting proposal.

+ Clay f/5: It is expected that there will be one f/5 MegaCam run on Clay in 2019B. During the f/5 run none of the other Clay instruments will be available.

+ Clay AO: It is expected that there will be one (short, probably seven night) MagAO run in the 2019B semester together with a commissioning run for MagAO-X. The timing of these runs will be decided at the Magellan SAC meeting on March 22-23, but the MagAO run is expected to be in the November bright time.

+ Clay PISCO: PISCO is a simultaneous griz-band imager, covering a 7.3 by 5.4 arcmin field with 0.11 arcsec/pixel sampling. PISCO is a PI instrument, those interested in using it should contact Tony Stark (aas@cfa.harvard.edu) before submitting a proposal.

## **Du Pont**

This CfP will cover the 2020 observing year for external programs using only the APOGEE spectrograph on the du Pont telescope. This period will run from January 17, 2020 through September 8, 2020, at which time the APOGEE-S program is expected to end.

+ APOGEE: A limited number of nights are planned to be available for external programs beyond the APOGEE survey. A draft summary of the procedures and technical aspects involved in conducting external APOGEE-2S observing programs is now available on the APOGEE-2 wiki: <https://trac.sdss.org/wiki/APOGEE2/ExternalObservations>. New users can register at this site (see upper right corner of window). Because of the lead time in preparing the plug plates used in the observations, this proposal round will also cover external program observations for the complete 2020 observing year, running from January 17, 2020 through September 8, 2020, at which time the APOGEE survey is expected to end.

## **CHAT**

The Chilean-Hungarian Automated Telescope is a 70cm diameter telescope installed in Las Campanas by a team led by Andrés Jordan (PI; PUC) and Gaspar Bakos (co-PI; Princeton). CHAT is a fully automated facility requiring no human intervention and is designed to deliver high quality relative photometric time series of fixed objects (no support for solar system object tracking). It is equipped with a back-illuminated 2kx2k CCD camera (0.6 arcsec per pixel; FOV of approx 20 x 20 arcmin<sup>2</sup>) and a filter wheel containing the Sloan griz filters. A total of 16n are available for the CNTAC in 2019B and time can be requested in one or half-night units. If the CNTAC and the CHAT board approve a proposal that needs observation during specific nights, the CHAT team will do its best to accommodate it. Note that due to the time critical and ToO nature of the targets belonging to the programs CHAT was designed for, the allocated nights may have to be re-scheduled (PI will be informed). To observe, the PI must specify the target coordinates, the filter, a fixed cadence, a defocus level and the desired timing and total duration

of the observations. No other mode of observations will be supported. CHAT is mounted on a modified equatorial mount and the CCD orientation is fixed with N-S along columns and E-W along rows. When observations are successful, observers will receive reduced fits files. Typical performance of differential photometry so far is an RMS precision of  $\sim 1$  mmag at  $\sim 120$  sec cadence for a  $V \sim 12.5$  mag star. Some more information about CHAT can be found at <http://chat.hatsurveys.org>. The CHAT board is composed of Andrés Jordan, Gaspar Bakos and David Osip; questions can be directed to Andrés Jordán ([ajordan@astro.puc.cl](mailto:ajordan@astro.puc.cl)). The CHAT hardware was funded by FONDEQUIP project EQM130030 of CONICYT.

### 4.3. ESO National telescopes

#### 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. The time allocation for 2019B will be 13 nights.

#### REM

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. Allocation for the 2019B semester is 112 hours.

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.

Applicants can have a look at the REM web site ([www.rem.inaf.it](http://www.rem.inaf.it)) and follow the ->Instruments ->REMIR ->ROS2 links to find information on the filter pass-bands and the limiting magnitude for both instruments.

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

TRAPPIST-South is a 60 cm telescope installed in la Silla by Liège University and Geneva Observatory and operated remotely from Belgium. It is exclusively devoted to photometry of exoplanets, comets and other solar system minor bodies. TRAPPIST 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. 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). Targets brighter than V mag 9 are not allowed as they saturate the detector and minimum exposure time is 10 seconds until a better shutter is installed. With a defocus (of +300 steps or a 5" psf) the mag limits are (exptime of 5 s): B (9.5mag), V (9.5mag), R (10 mag), ExoBB (11), z (8.5), I+Z (10), Clear (11.5). To avoid mechanical failure the filter wheel cannot be moved at a frequency higher than 1x per 4 minutes for long series. The PI will prepare a sequence of observations by filling in a template that the TRAPPIST team will provide and execute.

More information can be found at: <http://www.trappist.ulg.ac.be/>

## Danish telescope

Observing time with the Danish 1.54m telescope is offered in 2019B 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) will need to be approved by the telescope team before going up the mountain. For this purpose please contact Petr Pravec and Uffe Jorgensen well in advance. It might in some cases be possible to arrange for Chilean observers to attend an on-site Danish observer in September, in order to gain or refresh experience with operating the telescope. Chilean observers interested in this possibility will have to contact Uffe Jorgensen to arrange their possible training stay at the telescope.

As for offered time slots, during our Czech observing season it is the following slots:

**2019 September 19/19 to September 26/27 (9 nights)**

2019 November 11/12 to November 12/13 (2 nights)

2019 December 9/10 to December 15/16 (7 nights)

The only instrument available at the Danish telescope during 2019B 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, Gunn z, g2, Hbeta filters. H-alpha filter may be available too, but it is not guaranteed.

### **Max-Planck-Gesellschaft 2.2m telescope**

The MPI 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**

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 observes also 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.taronet.org>.

When a program is approved by the Chilean TAC, a user/password will be sent to the PI, to access to the VPN and wiki pages of TAROT. Note that we are planning several changes in the TAROT system.

#### **4.4 Radio Telescopes and MiniTAO**

##### **NANTEN2**

There will be no operations of NANTEN2 during 2019B

##### **ASTE**

There will be no operations of ASTE during 2019B

##### **MiniTAO**

MiniTAO will not be operational during the 2019B term