



NOIRLab; In-kind Contributions of  
Telescope Time and Application Process;  
Associated Data Products

Or

# **NOIRLab Resources for Rubin LSST Follow-up**

Dara Norman

NOIRLab

CSDC Deputy Director

(Community Science and Data Center)

**Session on  
Rubin In-kinds  
Thursday 08/11  
3:30 - 5:00pm  
Dove Mountain  
Ballroom**

# NOIRLab



- ANTARES Broker

- Time Allocation Committee

- Astro Data Lab Science Platform

Data Management & the Astro Data  
Archive



## In-Kind Contributions

- 5 open telescope
- 15 follow-up observing time
- External data sets





# NOIRLab Time Allocation System

<https://noirlab.edu/science/observing-noirlab/proposals/tac>



Time Allocation

MENU

Login >

## Welcome to the NSF NOIRLab's new Time Allocation System

The system can be used to start a new observing proposal using the upgraded proposal submission tool, manage existing proposals using the new observing dashboard, or access packages and instructions for NOIRLab TAC Members. A Noirlab user account is required to access the system. The system will provide a prompt to login or register prior to accessing the time allocation and observing tools.

*Note: This system replaces the legacy NOAO observing proposal form and TAC portal.*

### Observing Proposal Form

To create a proposal for open-access observing time on telescopes across the US ground-based O/IR system Click *create proposal* below.

*Note: Gemini proposals must be prepared using their respective phase-I tools.*

[CREATE PROPOSAL](#)

### Proposal Dashboard

To track the status of your submitted proposals or to continue editing an existing proposal and its collaborators click *go to dashboard* below

[GO TO DASHBOARD](#)

### TAC Dashboards

If you are an existing or new panel member for the NOIRLab Time Allocation Committee use the *go to dashboard* link below to access all required resources including proposals, grading tool and instructions.

[PANEL MEMBERS](#)

[PANEL CHAIRS](#)

**TAC Operations:**  
**Verne Smith** (TAC Head)

**Alfredo Zenteno**  
(Survey TAC Head/  
Interim TAC Head)

**Mia Hartman** (TAC Manager)

**Chadd Myers** (Lead Developer)

**Tod Lauer** (Interim Survey TAC Head)

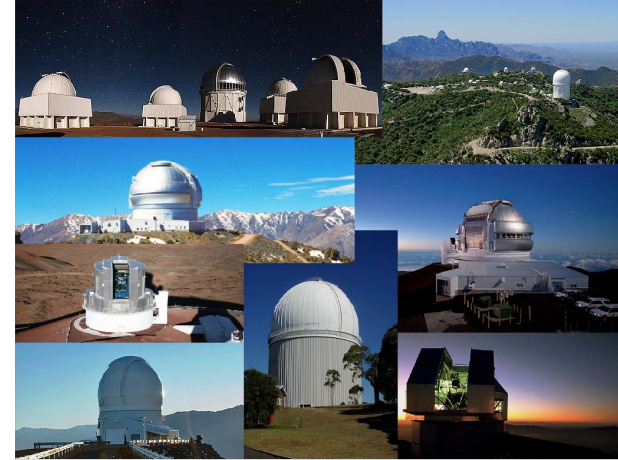
**TAC Modernization:**  
**Project Scientist**  
**Dara Norman**

**Project Manager:**  
**Nicole van der Blik**

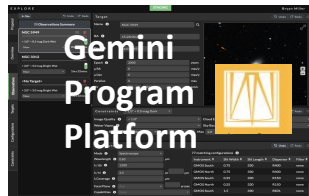
# Current Time Allocation Committee Process

## NOIRLab TAC

- Allocate time on >10 Telescopes both NOIRLab and privately operated
- Proposals for most telescopes are submitted through the TAS. (This will include proposals for In-kind time.)
- Gemini proposals are currently **submitted through the Gemini PIT** with plans to move to Gemini Proposal Platform (GPP) <https://www.gemini.edu/observing/phase-i/tac>
- **Future plans:** GPP+TAS to get the best features of each



Proposal tools to support users with telescope/instrument selection



**Time Allocation System**

User dashboard to track current and previous proposal submissions; collaboration support



# TAC Procedures and Policies

Proposals reviewed in 8 panels separated by scientific area.  
Generally, there are ~400 proposals per semester (~50% for Gemini time)

- **Dual Anonymous panel review (DARP)**

Anonymized proposals are reviewed by  
Anonymous Panel Members; Implemented as a  
2-stage review process



*proposer*



*reviewer*

- **Open Skies**

US allocated time on telescope facilities are  
equally open to everyone regardless of access to  
private facilities or affiliation; International  
applicants are asked to specify why they need  
access to US served facilities.





# Currently Available Modes

The NOIRLab (**TAC**) handles a number of proposal types and observing modes. These include:

- **Standard (every 6 months)**
  - *Target of Opportunity* - Exact target cannot be specified in advance, possible to interrupt other observations
  - *Long-Term* - Time allocated in up to 3 consecutive semesters
- **NOIRLab Survey & Gemini Large and Long Proposals (LLPs) (annual)**
  - Science programs that require several semesters to complete; completed dataset should have legacy value
- **Gemini Fast Turnaround (monthly)**
  - Observations requested on shorter timescale than a semester
- **Queue and Classical observing**
  - Support for queue or classical observing depending on the observatory
- **Astrophysical Event Observatories Network (AEON)**
  - Science may require use of multiple telescopes, dynamic scheduling and/or queue (or queue-like observing)





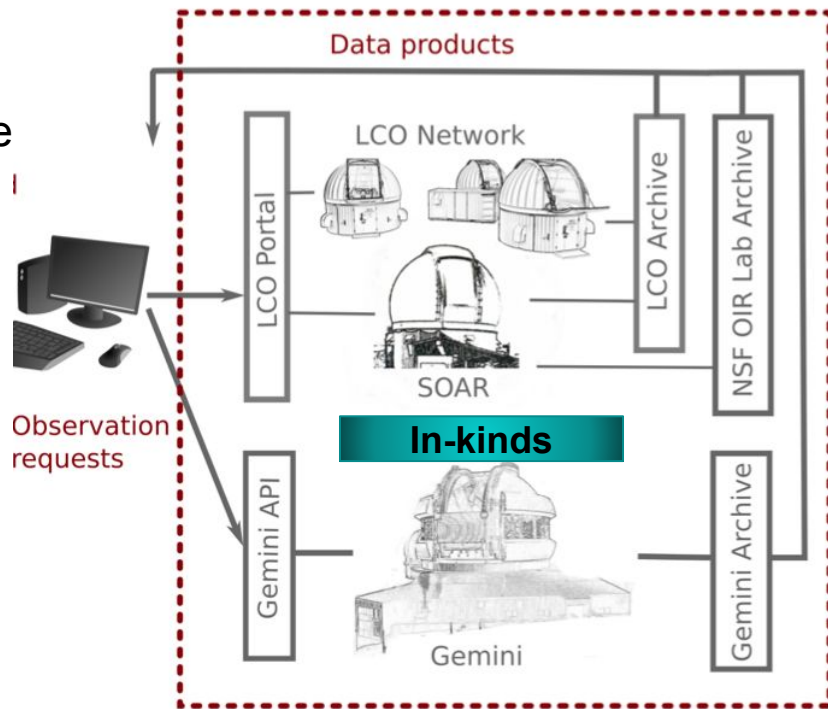
# Astrophysical Event Observatories Network

A collaboration between NOIRLab and Las Cumbres Observatory

To provide support for science that requires use of multiple telescopes, dynamic scheduling and/or queue (or queue-like observing)

## Collaboration is

1. Developing interfaces (APIs)
2. Using SOAR as pathfinder facility, running with LCOgt scheduler, queue on dedicated nights
3. Incorporate Gemini, implement APIs and an automated queue scheduler
4. Updating TAC processes to encourage use of the network (Target/Observation Managers-TOMs )
5. Encouraging data pipelining and archiving efforts
6. Getting ready to incorporate other facilities (Rubin in-kind contributions, CTIO Blanco 4m, etc.)



# NOIRLab TAC proposal form w/AEON

General information about your proposal including title, category and proprietary period.

Proposal Title  
**My First AEON proposal**

Enter the title of your proposal.

Science Category  
**Active Galaxies, Quasars, SMBH**

Select science category.

Proprietary Period (Months)  
**18 (Default)**

Choose proprietary period in months. Default is 18 months. ?

Resubmission ID:

Enter proposal number to identify this proposal as a resubmission ?

## Thesis Designation:

Travel and on-site expenses of graduate students at U.S. institutions observing as part of a Ph.D thesis program at Gemini Observatory, KPNO, CTIO, or at private observatories through community-access programs, will be paid by NOIRLab. To qualify, the proposal must be designated as a thesis at the time the proposal is submitted, and the proposal must be accompanied by a [Thesis Student Information Form](#).

## Thesis?

no ☐ yes ☐

Is this proposal part of a graduate student's thesis project? ?

## Multi Facility Companion (Gemini PIT)?

no ☐ yes ☒

Is this proposal part of a companion Multi Facility Gemini PIT proposal? ?

 **NOIRLab**   
Standard Proposal - Generated: 02/04/2022 11:05:07

## NSF's NOIRLab TAC

Type: Standard

## Panel:

Category: Active Galaxies, Quasars, SMBH

## My First AEON proposal

**Abstract of Scientific Justification** (*will be made publicly available for accepted proposals*):

Modern astronomical surveys can now deliver tens of thousands of new discoveries every night, with alerts generated within minutes. Yet many will require additional observations in order to understand the physical phenomena and maximize the scientific return. Observatories providing this critical follow-up must become capable of responding on similar timescales and with a flexibility governed by the demands of the science.

### Summary of observing runs requested for this project

Run	Semester	Telescope	Instrument	Obs. Mode	Nights	Moon	Optimal Mo.	Accept. Mo.	AEON
1	2022A	SOAR	Goodman	AEON	3.00	darkest	-	-	✓
2	2022A	LCO-1m	NRES	TOO	3.00	darkest	-	-	✓
3	2022A	CT-4m	DECam	C	3.00	darkest	-	-	
4									
5									
6									

Observe Modes - AEON: AEON (Queue); TOO: Target Of Opportunity; C: Classical; \* TAC adjusted nights

Proprietary Period: 18 months







## Scheduling constraints and non-usable dates:

None

## Runs:

**2022A-2897**

Enter the runs and schedule constraints for your proposal. Available configurations and semesters are shown based on the proposal type you selected.

-  Run 1 - SOAR: Goodman - ObsMode: AEON - 3.00 Nights in 2022A (darkest) 
-  Run 2 - LCO-1m: NRES - ObsMode: TOO - 3.00 Nights in 2022A (darkest) 
-  Run 3 - CT-4m: DECam - ObsMode: C - 3.00 Nights in 2022A (darkest) 

## Telescope Configuration + Night Details:

Telescope Configuration  
**CT-4m: DECam**

Select the telescope configuration for this run (Telescope: Instrument).

Observe Mode  
**Classical**

Select the observe modes from the available modes.

Run Semester  
**2022A**

Available semesters

Number of Nights  
**3.00**

Moon:  
**darkest (<=3 dfnm)**

Enter nights ?

Moon (Days from new moon) ?

## Required Component?

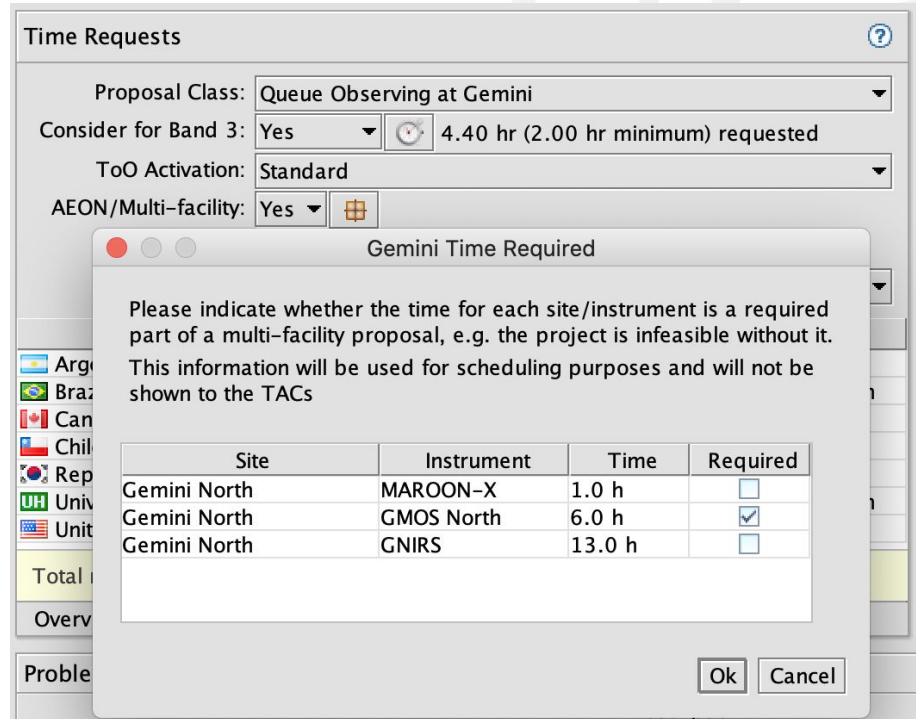
no ☐ yes ☒

Please indicate whether this run is a required part of a multi-facility (e.g. multiple runs or with a companion Gemini proposal) proposal, e.g. the project is infeasible without it. This information will be used for scheduling purposes and will not be shown to the TACs. If in doubt, leave this set to "no"



# AEON/Multi-facility option in Gemini PIT

- Set AEON/Multi-facility to yes if applying to more than one facility for the same project.
- If yes, then one can specify if any of the instruments are “required”. (for scheduling only, not shown to the TACs)
- Describe and justify the roles of the other facilities in the Experimental Design and Use of Other Facilities section.



**Time Requests**

Proposal Class: Queue Observing at Gemini

Consider for Band 3: Yes 4.40 hr (2.00 hr minimum) requested

ToO Activation: Standard

AEON/Multi-facility: Yes

**Gemini Time Required**

Please indicate whether the time for each site/instrument is a required part of a multi-facility proposal, e.g. the project is infeasible without it. This information will be used for scheduling purposes and will not be shown to the TACs

Site	Instrument	Time	Required
Gemini North	MAROOX-X	1.0 h	<input type="checkbox"/>
Gemini North	GMOS North	6.0 h	<input checked="" type="checkbox"/>
Gemini North	GNIRS	13.0 h	<input type="checkbox"/>

Ok Cancel



# In-kind: Contributed Telescope Time

- Currently, a majority of the in-kind contributions for telescope time have indicated that they intend to support access to their facilities as part of the Astrophysical Event Observatories Network (AEON).
- With time to be allocated through the NOIRLab TAC process
- Generally in-kind facilities will be responsible for serving their data.
- Other details (including any archiving) are TBD.

**PCW session on Rubin In-kinds**

**Thursday 08/11**

**3:30 - 5:00pm**

**Dove Mountain Ballroom**



# END

**End the madness: 'AGN' IS the plural of AGN**

**IF there is a need to distinguish a plural, it should be:**

**AGNi**

**Like SNe or PNe**





Backup (Maybe keep maybe modify)





Alert streams

Data catalogues



Filtered  
alerts



Observation  
requests

Target/Observation  
Managers

### Surveys

LSST  
ZTF  
Gaia  
ASAS-SN  
++more

### Brokers & Catalog Servers

ANTARES, Lasair  
ALeRCE, Simbad  
VizieR, MAST, CADC,  
++ more

### TOM Systems

Astronomer-led  
projects

Data products

LCO Portal

LCO Network



LCO Archive

NSF OIR Lab Archive

SOAR

In-kinds

Gemini API



Gemini

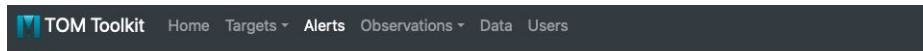
Gemini Archive



Extendable network of  
programmatically-accessible  
telescope facilities



Target/Observation Managers (TOMs) match targets with telescopes, coordinate observations, and manage data.



### Query a Broker

Create a new query using MARS Lasair Scout TNS ANTARES Gaia MyBroker AutoBroker

Name	Broker	Created	Last Run	Run	Delete
Hoth	MyBroker	2019-10-03 21:10:15	2021-01-07 15:01:22	<span>Run</span>	<span>Delete</span>
Score >50	AutoBroker	2019-10-03 22:10:27	2019-12-05 18:12:56	<span>Run</span>	<span>Delete</span>
Soraisam	ANTARES	2021-01-07 15:01:52	2021-01-07 15:01:19	<span>Run</span>	<span>Delete</span>

**ANT2018c7igm**

Update Target Delete Target

Names: ANT2018c7igm  
 Target Type: SIDEREAL  
 Right Ascension: 18:42:46.254  
 Declination: -12.9041  
 -12:54:14.845

Tags

Recent Photometry

Timestamp: Magnitude

No recent photometry.

Plan

**Observe**

LCO GEM SOAR LT

**Plan**

Start Time: 06/16/2021 ✓  
 End Time: 06/18/2021 ✓  
 Maximum Airmass: 2.0 ✓

Plan

**Survey View**

Survey plot showing multiple colored arcs representing different telescopes: LCO Siding Spring, LCO Sutherland, LCO Tull, LCO Cerro Tololo, LCO McDonald, LCO Haleakala, GEM Cerro Pachon, GEM Maunakea, SOAR Cerro Pachon.

In use by SNe, exoplanet, NEO, AGN, and microlensing teams.

Useful for non-TDA projects, e.g. lots of targets, large teams

LCOgt has developed a toolkit: <https://tom-toolkit.readthedocs.io/en/stable/>



# Dual Anonymous 2-stage review process

- **Why:** Improve our practices for subjective evaluation in order to mitigate unconscious bias
- **How:** Move to a Dual Anonymous 2-stage review process
  - Anonymized proposal submission
  - Review of proposals in the first stage is blind wrt observing team and other status signaling information.
  - Second stage allows for (limited) ranking changes for proposals that meet some rank threshold
  - Ranking changes (up and down) based on specific, previously blinded information (e.g. thesis project, PI from small institution with limited resources, insufficient previous productivity )

1  
5