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

CERRO TOLOLO INTER-AMERICAN OBSERVATORY

COMMUNITY SCIENCE AND DATA CENTER

GEMINI OBSERVATORY
Exploring the Universe, Sharing its Wonders

KITT PEAK NATIONAL OBSERVATORY

VERA C. RUBIN OBSERVATORY
operations

ANTARES

ASTRO DATALAB

- ANTARES Broker
- Time Allocation Committee
- Astro Data Lab Science Platform

Data Management & the Astro Data Archive

-

<u>In-Kind Contributions</u>

-5 open telescope

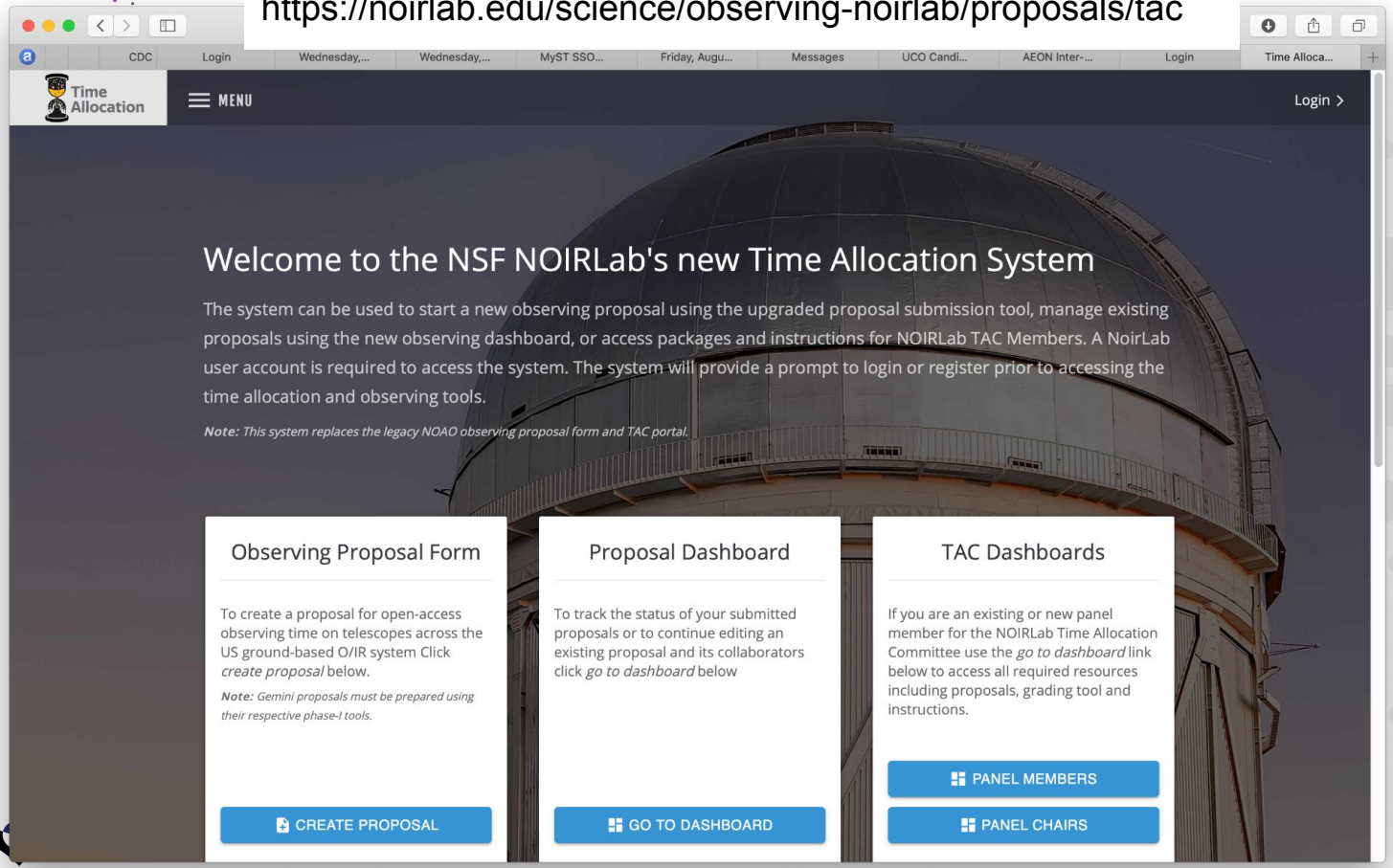
-15 follow-up observing time

-External data sets

AURA

NOIRLab Time Allocation System

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



TAC Operations:
Verne Smith (TAC Head)

Alfredo Zenteno (Survey TAC Head/ Interim TAC Head)

Mia Hartman (TAC Manager)

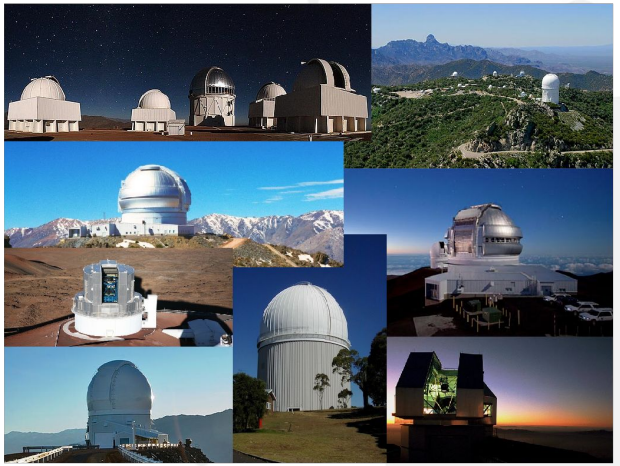
Chadd Myers (Lead Developer)

Tod Lauer (Interim Survey TAC Head)

TAC Modernization: Project Scientist Dara Norman

Project Manager: Nicole van der Bliek

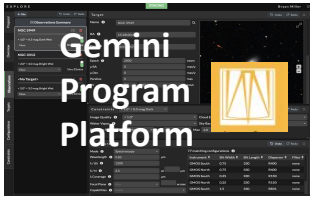
Current Time Allocation Committee Process



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
- **Astrophyscial Event Observatories Network (AEON)**
  - Science may require use of multiple telescopes,dynamic scheduling and/or queue (or queue-like observing

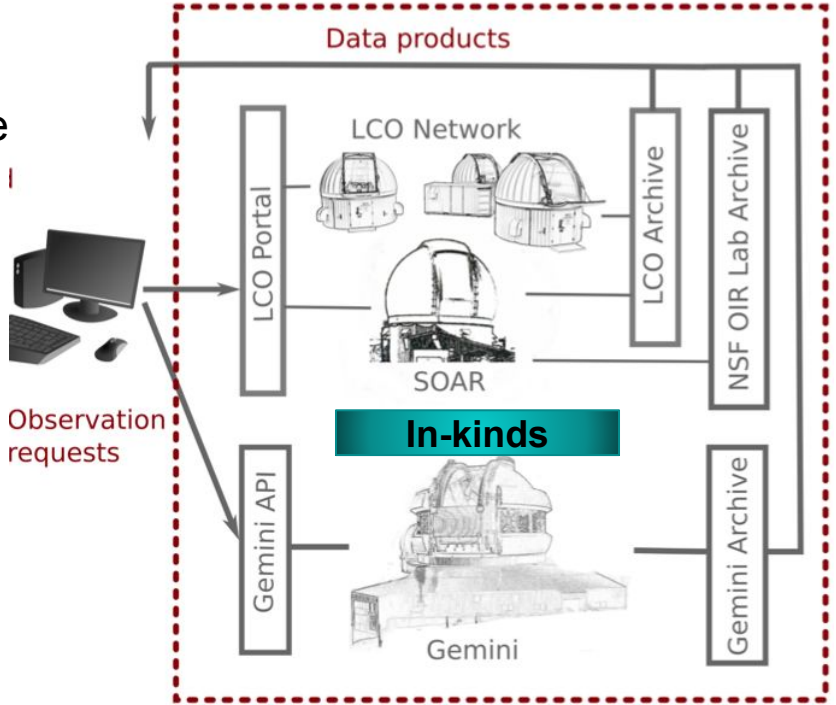
Astrophyscial Event Observatories Network

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.)



https://noirlab.edu/public/projects/aeon/
https://lco.global/aeon/

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 AEON

Standard Proposal - *Generated: 02/04/2022 11:05.07*

2022A-2897

NSF's NOIRLab TAC **Panel:**
Type: Standard **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

PREVIEW PREVIEW PREVIEW

Runs:

Enter the runs and schedule contraints 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

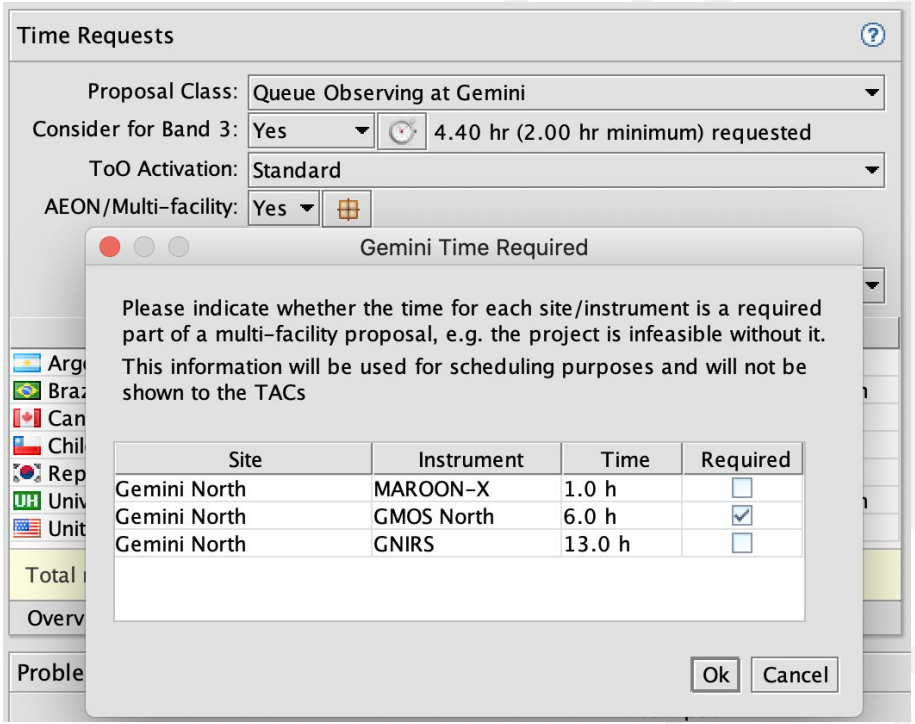
Number of Nights
3.00
Enter nights

Moon:
darkest (<=3 dfnm)
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.



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

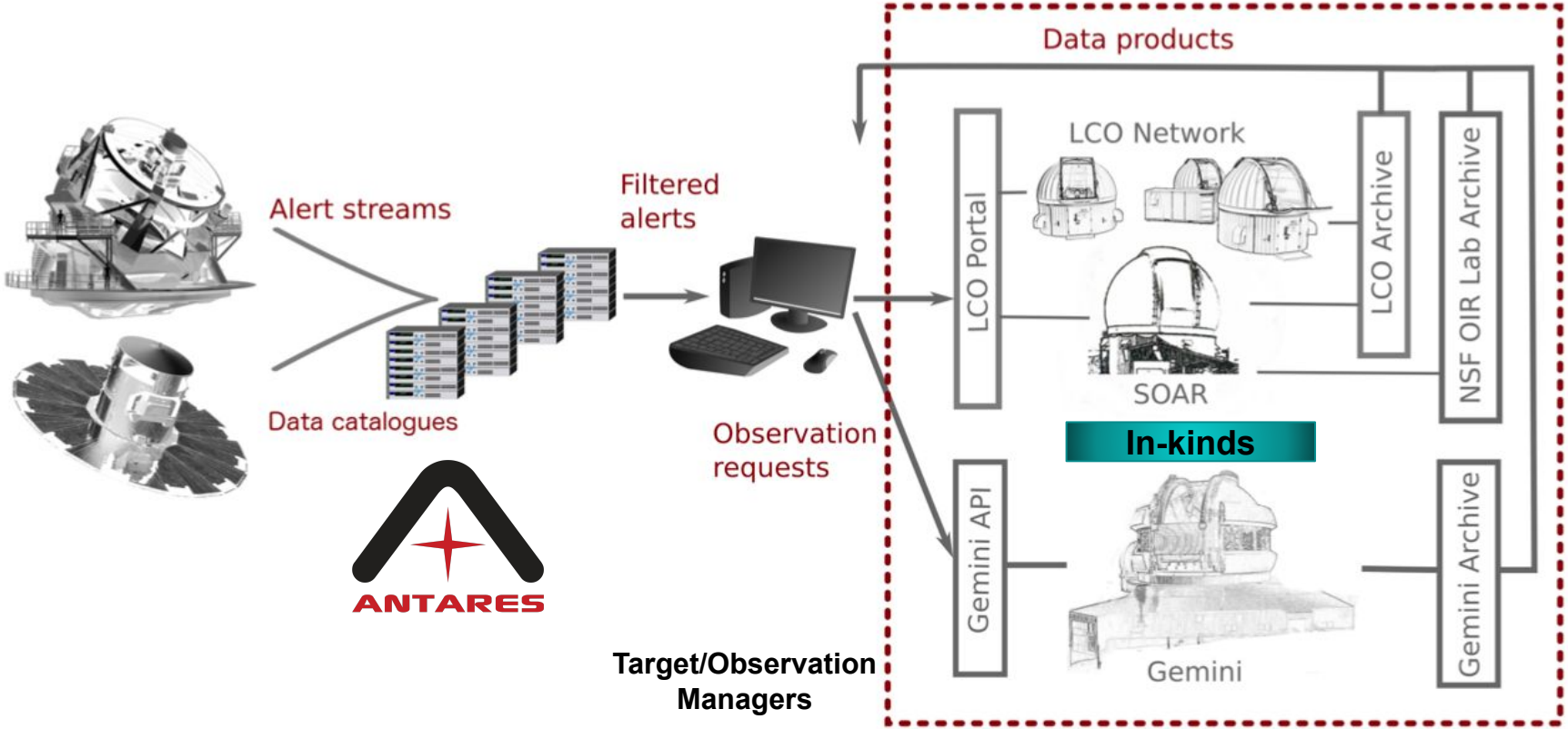
End the madness: ‘AGN’ IS the plural of AGN

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

AGNi

Like SNe or PNe

Backup (Maybe keep maybe modify)



Surveys
LSST
ZTF
Gaia
ASAS-SN
++more

Brokers & Catalog Servers
ANTARES, Lasair
ALeRCE, Simbad
Vizier, MAST, CADC,
++ more

TOM Systems

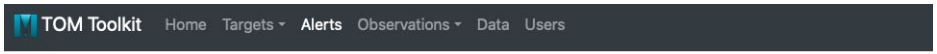
Astronomer-led projects

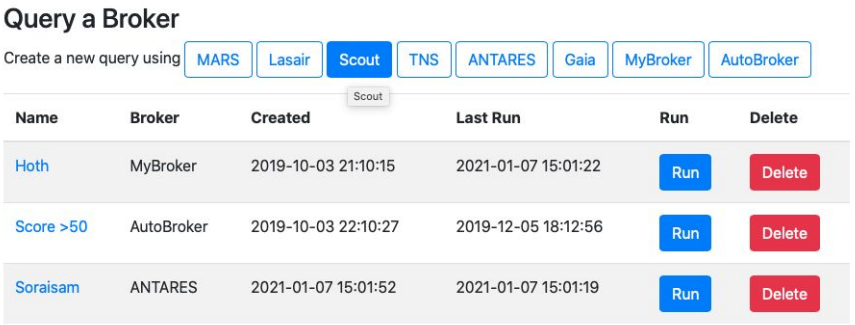
AEON
Astronomical Event Observatory Network

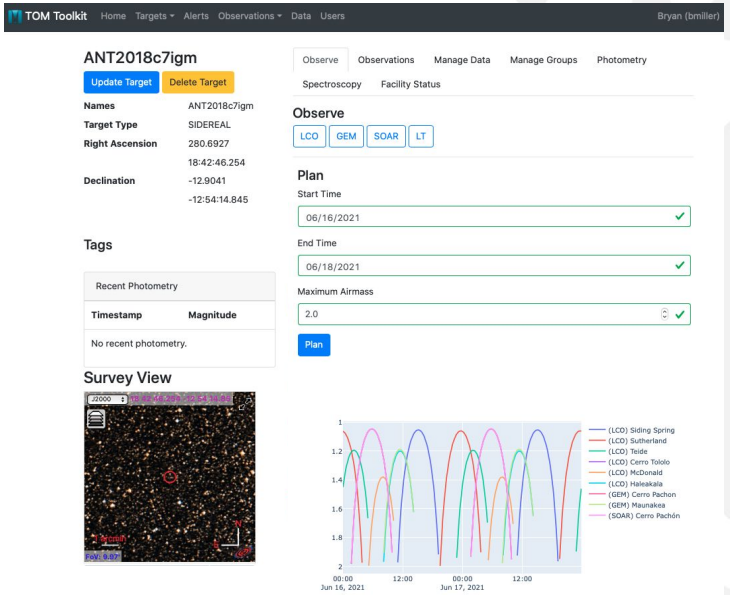
Extendable network of programmatically-accessible telescope facilities

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

TOM TOOLKIT Las Cumbres Observatory LCO







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)