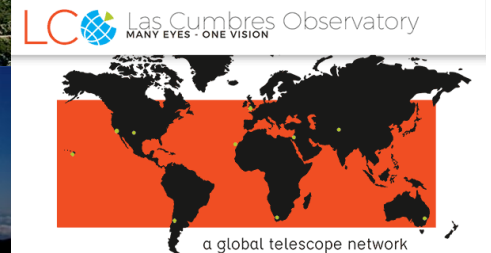
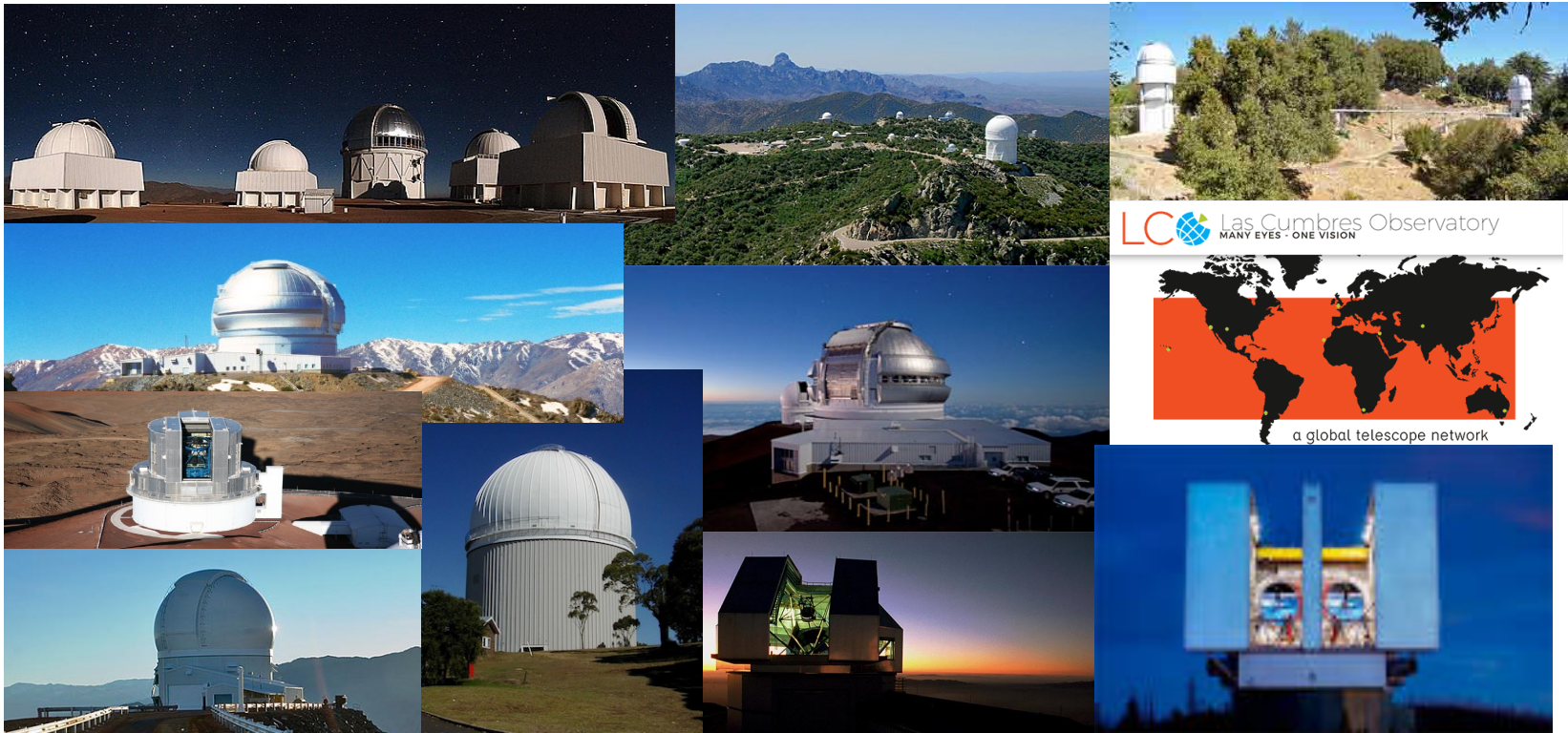
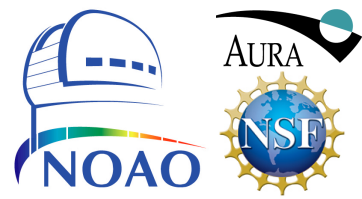




# NOAO TAC

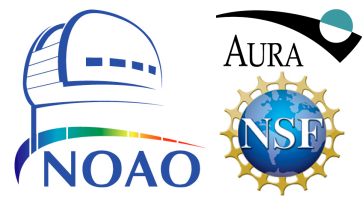
*Verne V. Smith*  
*TAC Process Chair*





# NOAO TAC Background

- TAC provides scientific rankings of proposals submitted for NOAO-managed telescope time
- In 2017 NOAO is providing community open access to:
  - Kitt Peak (4m, WIYN 3.5m, 0.9m)
  - Cerro Tololo (4m, SMARTS 1.3m+0.9m)
  - Cerro Pachon (SOAR 4.2m, Gemini 8m)
  - Mauna Kea (Gemini 8m, Subaru 8m)
  - Mt. Graham (LBT 2x8m)
  - Mt. Wilson (CHARA 6x1m)
  - Siding Springs (AAT 4m)
  - Las Cumbres Observatory (2m and 1m worldwide)



- NOAO TAC has 8 panels
  - 3 Extragalactic, 3 Galactic, 1 Solar System, 1 NN-EXPLORE WIYN
  - 5 panel members, 1 non-voting neutral Chair
- NOAO manages on behalf of Gemini a Large Program TAC
  - LPTAC has 6 US members, 2 Canadian, 1 Argentinian + Chair
  - US members serve double duty on NOAO Survey Science TAC
- Panel review assignments
  - Based on panel + individual expertise, science themes, sometimes telescope or instrument
  - Minimize conflicts of interest (challenging sometimes)
- NOAO TACS are comprised of 55 US astronomers
  - Strive to make TAC membership representative of user community
  - Meets every semester
  - Nominal service is 5 semesters

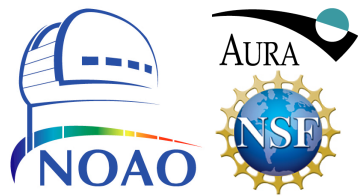


- Panels provide scientific ranking is primary criterion
  - Broader impact also considered
- Panel Chairs meet with NOAO staff to merge panel rankings
- Ranked lists go to each telescope for scheduling
  - A “compressed” timeline
- Gemini lists are merged with partners at ITAC
- The landscape evolves
  - Evolution of the 4-meters: Blanco (DECam + DES), Mayall (DESI)
  - Gemini Large and Long Programs enter mature phase
  - WIYN and NN-EXPLORE in era of NEID



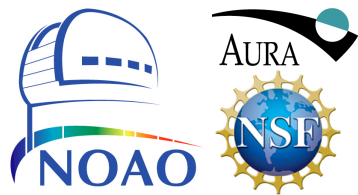
# New Facilities

- NSF/MSIP funding for open access to Las Cumbres Observatory (LCO)
  - 7 semesters beginning with 17A
  - ~220 hr/semester of 2-m and 1200 hrs/semester of 1-m time
  - A special call for first semester (TAC panel met on 10 March), but semesters will sync-up for 18A—those of you continuing on TAC will see these next time
- NSF/MSIP funding for increased open access to Center for High Angular Resolution Astronomy (CHARA)
  - ~50 nights/year (up from 5 nights/yr) through semester 2020B
- NSF/TSIP nights on Large Binocular Telescope (LBT)
  - 30 nights spread over 5 semesters
  - Service observing from Tucson, visiting observers encouraged, or remote connection



# TAC and Implicit Bias

- NOAO has studied implicit (unconscious) bias in the TAC process
- Looked at submission and acceptance rates of NOAO proposals by gender
- Female PIs, in most semesters, have marginally lower acceptance rates than male PIs
  - Small effect in a given semester, but over many semesters it adds up
- Discussion of implicit bias is now part of TAC orientation
  - Studies suggest that implicit bias influence can be mitigated by simply informing reviewers about its existence
  - Still early to see effects of TAC briefings



# 2017B NOAO Regular Proposals

Telescope	Requested Nights	Available Nights (new programs)	Oversubscription
Gemini-N 8m	142.4	52	2.7
Gemini-S 8m	79.5	59	1.3
Subaru 8m	9.1	3	3.0
LBT 2x8m	13	7	1.9
CTIO 4m	85.5	45	1.9
AAT 4m	8	5	1.6
SOAR 4.2m	86.3	39	2.2
KPNO 4m	39.1	40	1.0
WIYN 3.5m	103	66	1.6
LCO 2m	38.7	22	1.8
LCO 1m	249.5	122	2.0
CTIO 1.3m	3.5	13	0.3
CTIO 0.9m	42	21	2.0
KPNO 0.9m	34	30	1.1
CHARA	34.4	15	2.3

In addition there are:

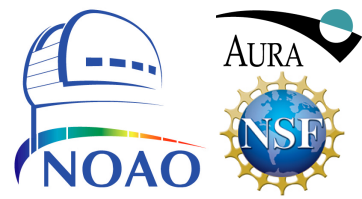
1) NOAO Surveys (up to 20%)

2) Gemini Large Programs (up to 20%)

3) Gemini Fast Turnaround (up to 10%)

4) Note evolution of 4-m's

- Blanco DES B-semesters
- Mayall MzLS A-semesters (DESI imaging survey)
- Last semester of Mayall, with DESI installation ~ 1 November 2017



# TAC Summary

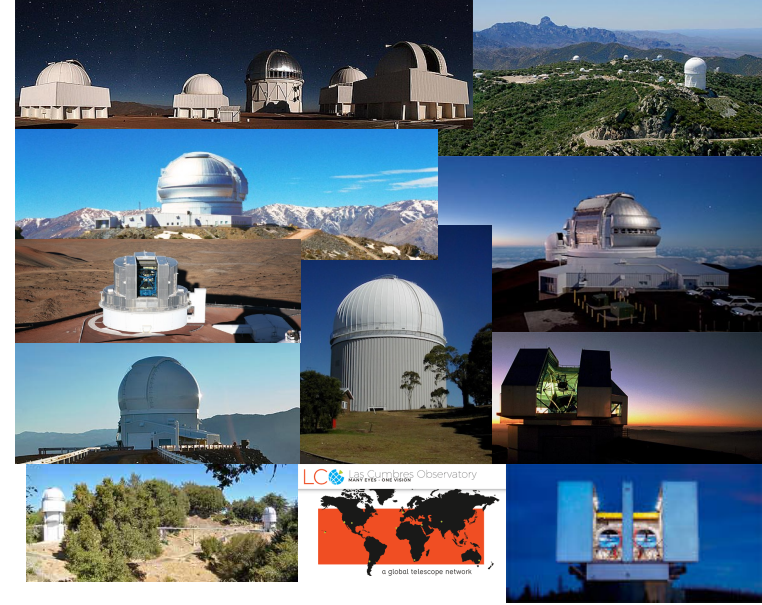
- Open access remains healthy
  - NOAO handles ~300 – 380 proposals per semester (large semester-to-semester variation)
- Future access remains scientifically exciting and nimble
  - Post-DES era on Blanco – DECam very popular
  - Robo-AO on 2.1m
  - Variety of ways to access Gemini
  - WIYN NN-EXPLORE with NEID
  - Las Cumbres Observatory (LCO)
- Challenges
  - Maintain increasingly broad TAC expertise
  - Changing landscape in era of large surveys
  - What will open-access look like in LSST era





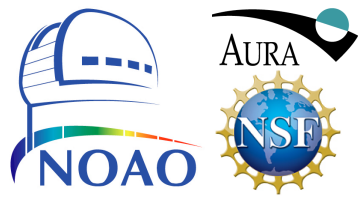
# Detail Slides

TAC Orientation presentation for 2017B



# NOAO TAC Orientation for 2017B

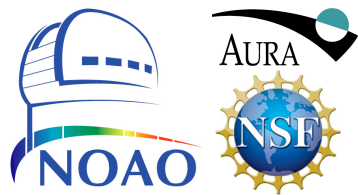
Verne V. Smith, Mia Hartman, Dave Bell



# NOAO Background

- *NOAO is a Federally Funded Research and Development Center (FFRDC): “to conduct research for the US Government”*
- *The Association of Universities for Research in Astronomy (AURA) operates NOAO under a cooperative agreement with the National Science Foundation (NSF)*
- *Part of the NOAO mission: ... “to promote excellence in astronomical research by providing access to information about the universe from state-of-the-art facilities, surveys, and archives.”*
- *In 2017B NOAO provides public access to:*
  - Kitt Peak (4m, WIYN 3.5m, 0.9m)
  - Cerro Tololo (4m, SMARTS 1.3m+0.9m)
  - Cerro Pachon (SOAR 4.2m, Gemini 8m)
  - Maunakea (Gemini 8m, Subaru)
  - Mt. Wilson (CHARA 6x1m)
  - Siding Springs (AAT 4m)
  - Mt. Graham (LBT)
  - LCO – around the world





# 2017B Proposal Statistics

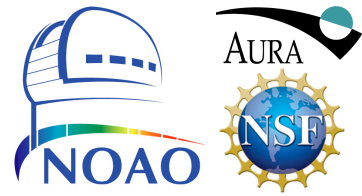
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In addition there are:

- 1) NOAO Surveys (up to 20%)
- 2) Gemini Large Programs (up to 20%)
- 3) Gemini Fast Turnaround (up to 10%)
- 4) Note evolution of 4-m's
  - Blanco DES B-semesters
  - Mayall MzLS A-semesters (DESI imaging survey)
- 5) Last semester for KPNO 4m will be 2017B: DESI installation begins

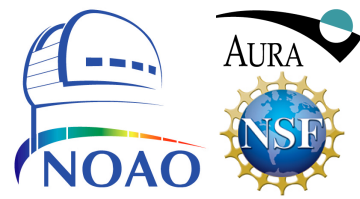


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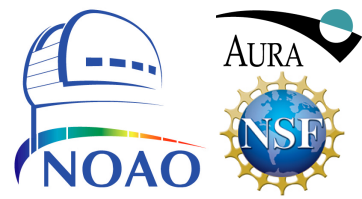


# Introduction to the TAC

- NOAO TAC has 8 panels
  - 3 Extragalactic, 3 Galactic, 1 Solar System, 1 NASA WIYN Exoplanet
  - 5 panel members + 1 non-voting, neutral Chair
- Panel review assignments
  - Based on panel + individual expertise, science themes, and telescope
  - Try to minimize conflicts of interest



1. Panels provide scientific ranking (based on grades within each panel – **please send in preliminary grades on time!**)
2. Panel Chairs convey ranking and recommendations to Merging TAC meeting this Friday
3. Merging TAC combines lists, & resolves any conflicts
4. NOAO Director reviews allocation, approves time allocation with an official “sign off”
  - the TAC is advisory to the Director
5. Ranked lists submitted to telescope schedulers
  - different for each telescope / observatory
6. When all telescopes are scheduled, letters go out to PI's



# Timeline for 2017B

- 1 – 4 May: Regular TAC Panel meetings
- 5 May: Merging TAC
- 9 May: Director review
- 12 May: Ranked Gemini list sent to Gemini
- Later in May: ranked lists to other observatories
- 1 June – Gemini ITAC
- 15 June\* – schedules ready, letters sent
- 1 August 2017: Semester 2017B begins!

\* Varies by observatory





# Implicit Bias

*The bias in judgment and/or behavior that results from subtle cognitive processes (e.g., implicit attitudes or stereotypes) that operate at a level below conscious awareness and without intentional control. The underlying implicit attitudes and stereotypes responsible for implicit bias are those beliefs or simple associations that a person makes between an object and its evaluation that are activated automatically by the actual or symbolic presence of the object.*

- NOAO (and AURA centers, in general) has made and is making progress in informing staff and astronomy community members on the affect that implicit bias can play in evaluating credentials or the work of astronomers (in hiring, promotion, recognition, etc.)
- As a human evaluation process, the TAC may be influenced by implicit bias
- NOAO has compiled proposal submission and acceptance rates by PI gender back to 2008A – and continues to date: [Dara Norman](#), [Mia Hartman](#), [Dave Bell](#)
- 18 semesters of results finds a small deficit in ratio of accepted/submitted proposals for female PIs relative to male PIs ( $\sim 0.5\sigma$ /semester), but significant in over several semesters: typical difference is 2-5%
- Consistent signal adds up to a significant aggregate result
- Removal of PI and co-I names from front page and full first names to initials
- Research shows simply talking about implicit bias also helps
- Feedback on the NOAO TAC process is welcome

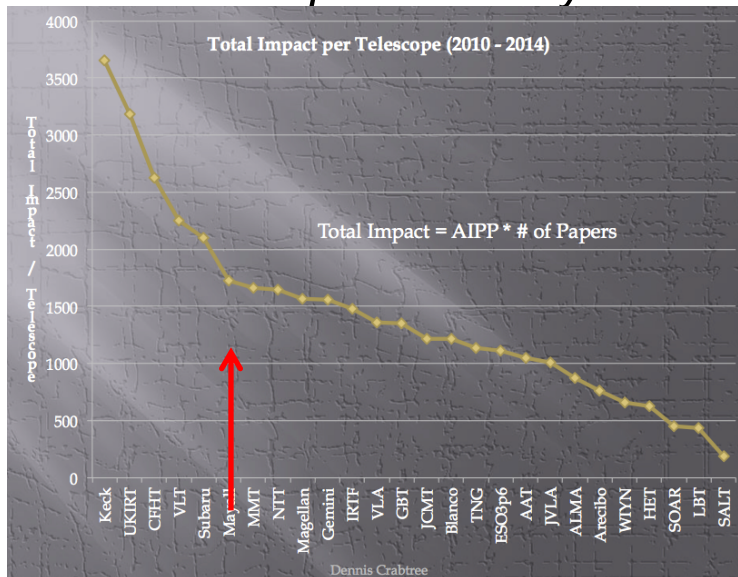


# KPNO News (2017B)

- Mayall 4m
  - Mosaic-3, KOSMOS
  - No more pre-committed *Survey* nights
  - No long-term status



- Mayall 4m (continued)
  - *17B is last amount of time before shutdown for DESI installation (1 November)*
    - *TAC members, thank you for your service! You have helped us maintain the Mayall's high scientific productivity.*



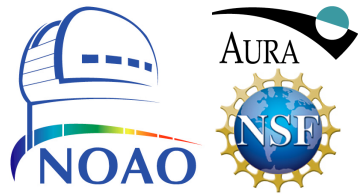


# KPNO News (2017B)

- WIYN 3.5m
  - NASA GO program gets priority
    - Tech reviews provided for all GO proposals
  - All instruments offered but note:
    - NESSI is the new DSSI (IT will support queue)
    - GradPak and HexPak need PI approval (Bershady)
    - Neither HYDRA + NESSI nor HYDRA + WHIRC can be scheduled in same block
  - Non-GO proposals should be ranked (may be scheduled to fill gaps)
    - No long-term status on non-GO proposals
  - Up to 20 nights available on WIYN 0.9m w/HDI



- Instruments available
  - DECam:
  - COSMOS: available in all modes (imaging, long & multi-slit)
  - ARCoIRIS (aka TS4):
    - X-dispersed format, 0.8 to 2.47 microns @  $R \sim 3500$
    - 1.1 x 28 arcsec slit
- Pre-committed time
  - Dark Energy Survey: 103 nights
  - Minor adjustments to accommodate time-critical observations are possible



- Instruments available:
  - Goodman: in all modes (imaging, long & multi-slit) with red (new) and blue cameras; expanded grating compliment
  - SAM:
    - Standard ground-layer AO mode with SAMI
    - HRcam for speckle
  - SOI
  - Spartan
- Remote observing is possible for returning observers; new observers must be on site. No service observing
- New: 1/2 nights will not be split between SOAR partners
  - Scheduler must find an NOAO proposal to use other half of night

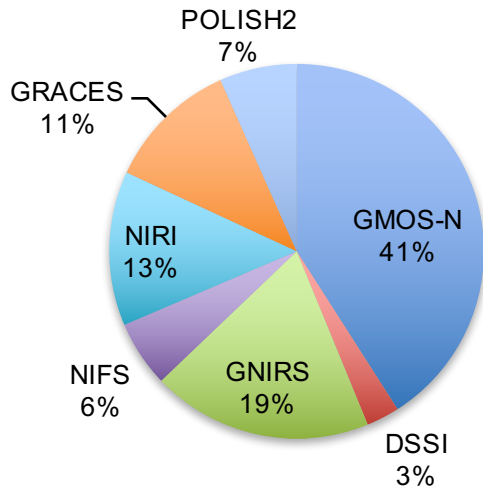


- 1.3-m ANDICAM:
  - Service queue; optical-only requests may go to 0.9-m
- 0.9-m CCD direct:
  - Classical mode only
- 1.5-m closed
  - Future availability depends on funding
- Proposals for multiple telescopes:
  - Please indicate if proposal should be scheduled, e.g. on SMARTS, even if time on other telescopes will not be awarded

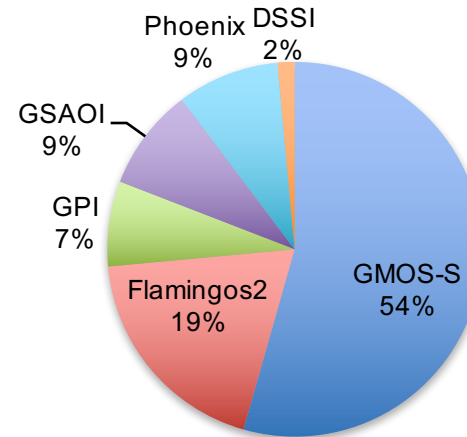


## Instrument requests by number of proposals

### Gemini North (excluding Subaru)



### Gemini South



Gemini North- Subaru exchange

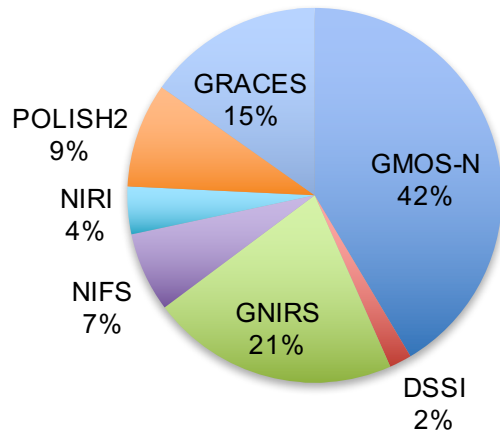
Target of 5 nights exchange (across partnership). Typically, only whole nights are exchanged.

Instruments requests: HSC (4), IRCS(1), SCEXAO(1) totaling 9 nights.

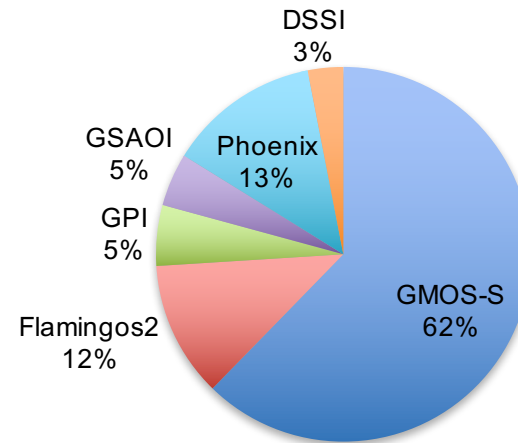


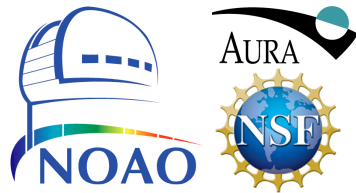
## Instrument demand by time requested

### Gemini North (excluding Subaru)



### Gemini South





US NGO



- Visitor's instrument programs have been reviewed by the proposing instrument teams.
- Gemini instrument experts will be available for the duration of the TAC. If you have technical questions related to Gemini please contact me (through Mia, or the panel assistants).
- For your panel's highest ranked Gemini proposals, discuss rollover recommendation



# Review Criteria - I

<http://www.nsf.gov/pubs/1999/iin125/iin125.html>

- **Scientific merit**
  - Specific scientific goals + larger relevance
  - May include indirect scientific benefit
- **Experimental design**
  - Feasibility ([see online technical reviews; ask for clarification if needed](#))—
  - > Plus **Technical Description**
- **Broader impact**
  - Relevance to use of other capabilities, instrumentation, partnerships
  - Probability / impact of final publication, benefits to society
  - Relevance to education, public outreach, participation of underrepresented groups: gender/ethnicity/other underserved minorities/institutions/geography, etc.
- **History**
  - Prior allocations (i.e., is time necessary for completion? [Check past TAC comments online](#))



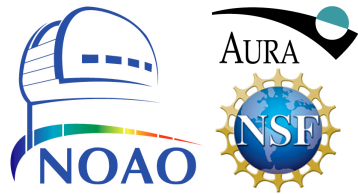
# Review Criteria - II

- NOAO has an open skies policy – anyone can apply.
- For US proposers, other access is NOT a criterion.
- For foreign proposers, we request a justification for why the project cannot be done with facilities to which they have access; however,
  - Scientific merit + Broader impact
- Finally: try not to micromanage proposal requests.



# TAC Panel Procedures - I

- Chair has latitude in organizing discussion
- Panel voting - open (no secret ballots, please)
  - Panelists can provide changes (“up a point”, etc.)
  - Start each grade-change round with primary reviewer
- Typically two passes by panels
  - Please try to finish 1<sup>st</sup> pass today, 2<sup>nd</sup> pass tomorrow before lunch
  - All discussions must have Chair present
  - Please consider technical reviews when reviewing ranked list on 2<sup>nd</sup> day
    - (ask for assistance if questions arise)
- Final written comments due before 5pm tomorrow
- Provide any feedback on process to Chair
- Please finish by 5:00 PM on each day
- Pre-meeting for Chairs tomorrow @ 8:30AM in Main Conference Room



# TAC Panel Procedures - II

- Long term status
  - Approve only if additional observations needed to answer question
- Proprietary period
  - Extend only if scientifically warranted
- PhD Thesis projects
  - No official weighting but...
  - If a commitment has already been made, please consider carefully
  - May wish to consider broader impacts
- Final Ranked List
  - Include all proposals
  - Remove any grade degeneracies (manually, e.g. 0.01)
  - Use zero nights *only* for proposals that should not be scheduled
  - Long term / Proprietary period extensions: provide explicit recommendation
  - Chairs: record issues for Merging TAC
- Feedback
  - Chairs to compile panel comments on process for feedback to NOAO



# Conflicts of Interest

- Guiding principle: *Are you uncomfortable reviewing this proposal? (Or would others think you should be?)*
- NOAO strives to avoid conflicts of interest.
- Do not review proposals on which you are a co-I or PI (!)
- Do not review proposals on which your close colleague/collaborator/student/advisor is a PI/co-I *if you think you will be biased* (+ or -)
- Be open (if there is something you feel could potentially be an issue, share it with the panel chair)
- If you have insights on a proposal on which you are conflicted and are not grading, be open and provide them fairly (if you can).
- If Chair is conflicted we will find a temporary Chair to lead discussion for that proposal



# Writing Comments - I

- Guiding principle: **Ask yourself if you would be OK receiving these comments!**
- Be brief, clear, and polite
- Be accurate – ‘don’t make stuff up’
  - if the proposal is good but fails because of oversubscription, or if there was a better proposal, say so (without mentioning *which* proposal was better!)
- Be fair - Judge the proposal on its merits
- Be constructive, if possible - how could the proposal have been better?
- Write in complete sentences
- Please, no slang, jargon or interjections
- Try not to pose unanswerable / rhetorical questions

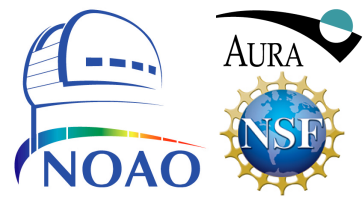




# Writing Comments - II

- Lead reviewers compile final comments
  - Please use web-based form on TAC Web Page
  - Summarize written comments and panel discussions, and check “completed” box
- Panel Chairs:
  - Please review final comments, along with your panel!
  - Do not adjourn panel until you have checked all comments

*Please remember that you are representing NOAA to our community when writing these comments.*



# Confidentiality

- *All proposals, TAC reviews, TAC discussion, and comments are strictly confidential*
  - Please do not discuss proposals outside the TAC rooms, with colleagues of other panels, or anyone else



Thank you for your service!

We look forward to your feedback.



# Notice from October 2016 Currents

## **NSF/MSIP Funds Open Access to Las Cumbres Observatory Global Telescope Network**

*Todd Boroson, Director of Las Cumbres Observatory*

Starting in 2017, US community open-access time will be available on the [LCO global telescope network](#) through an NOAO time allocation process. Specific goals for the use of this open-access time are (a) to effectively follow up on current time domain surveys, especially those with public distribution of data and alerts, and (b) to help the community prepare for time domain research in the LSST era by developing relevant programs, methods, and technologies.





# NOAO CHARA Webpage

## Community Access to the CHARA Interferometer on Mt. Wilson

### Announcement of Opportunity

NOAO and Georgia State University are announcing an opportunity for observations with the [Center for High Angular Resolution Astronomy \(CHARA\) Array](#) at [Mt. Wilson Observatory](#). Fifteen nights will be available during the 2017B observing semester (August - December; CHARA will be closed for the month of January 2018).



Requests should be submitted using the standard [NOAO proposal form](#) by selecting "CHARA" in the telescope list. Time should be requested in half-night increments, with a minimum allocation of 0.5 nights (about 5 hours). Observations will be carried out by CHARA staff, however, we encourage new observers to participate in making observations at Mt. Wilson observatory, and some travel support from GSU will be available on request for those who are awarded time.

### What is the purpose of this call for proposals?

GSU/CHARA was awarded funding from the NSF Mid-Scale Innovations Program to provide community access to the CHARA observing program and data archive. This is intended to be an introductory opportunity, and previous experience with interferometry is not required. The number of available nights will probably increase to 25 per semester through semester 2021B.

### CHARA capabilities and proposal preparation

The best way to study the capability of the instruments is to look over some of the science papers from the array. A bibliography of CHARA Array science is available: <http://www.chara.gsu.edu/astronomers/publications/>

The following table gives a high level view of the performance for the system and the most mature beam combiners. Please note that CHARA does not have offset tracking capability, and the science target must satisfy acquisition, tilt tracking, and beam combiner magnitude limits.

MIRC will be available on a shared-risk basis in 2017B as a new camera is installed.

Mode	Telescopes	Band	Typical limit Mag=	Best performance Mag=	At Spectral Resolution R=
Acquisition	6	V-R	10.0	12.0	Broad band
Tilt tracking	6	V-R	10.0	12.0	Broad band
CLASSIC	2	H or K band	7.0	8.5	Broad band
CLIMB	3	H or K band	6.0	7.0	Broad band
JouFLU	2	K	4.5	5	Broad band
MIRC	6	H	4	6	42
PAVO	2	630-900 nm	7.0	8.0	30
VEGA (hi-res)	2 or 3	2 bands of 7nm (separation 30nm) in 520-850nm	4.0	5.0	30000
VEGA (med-res)	2 or 3	2 bands of 35nm (separation 160nm) in 520-850nm	6.5	7.5	6000

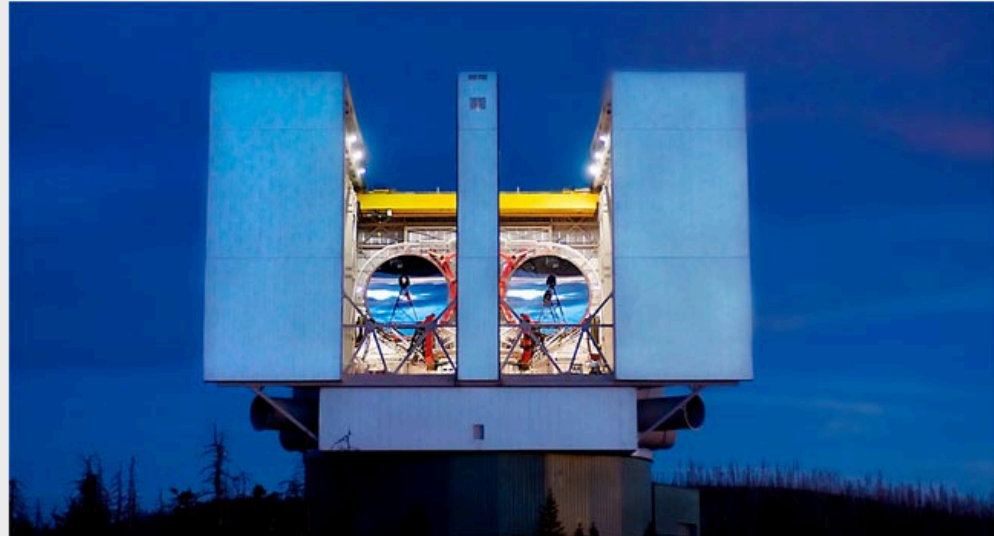
[Home](#) » [Facilities](#) » [Other Operating Facilities](#) » [LBT](#)

- [LBT Website](#)
- [LBT Science Operations](#)
- [Instruments](#)
- [Proposing through NOAO](#)
- [NOAO LBT PIT Guidelines](#)
- [LBT Telescope Schedules](#)

### Time Available

As a result of a TSIP award, the NOAO community will have access to LBT for five semesters starting in 2017B, during which seven nights of service observing time will be allocated.

## Large Binocular Telescope



The Large Binocular Telescope (LBT) is located on 10,700-foot Mount Graham in the Pinaleno Mountains of southeastern Arizona and is a part of the Mount Graham International Observatory. The LBT is one of the world's highest resolution and most technologically advanced optical telescopes.

The Large Binocular Telescope (LBT) is a collaboration between the Italian astronomical community (represented by the Istituto Nazionale di Astrofisica (INAF)), The University of Arizona, Arizona State University, Northern Arizona University, the LBT Beteiligungsgesellschaft in Germany (Max-Planck-Institut for Astronomie in Heidelberg, Landessternwarte in Heidelberg, Astrophysikalisches Institut in Potsdam, Max-Planck-Institut for Extraterrestrische Physik in Munich, and Max-Planck-Institut for Radioastronomie in Bonn), The Ohio State University, Research Corporation in Tucson, and the University of Notre Dame.

The goal of the LBT project is to construct a binocular telescope consisting of two 8.4-meter mirrors on a common mount. This telescope will be equivalent in light-gathering power to a single 11.8 meter instrument. Because of its binocular arrangement, the telescope will have a resolving power (ultimate image sharpness) corresponding to a 22.8-meter telescope. The feasibility study for the project was completed in early 1989. In 1992, the original partners (Arizona, Italy and Research Corporation) decided to proceed to the construction phase even though the funds available were sufficient only to complete a "reduced first light" telescope with only one primary mirror in place. With the addition of LBTB and Ohio State University to the consortium in 1997, the project began to construct the full binocular telescope. The telescope was completed in Italy and shipped to Arizona in the summer of 2002.

Observatory postal address: