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## Currents

### In this Issue...

**Satellite Constellations Workshop:** NSF's NOIRLab and AAS will host a virtual workshop **29 June - 2 July 2020** on the impacts of large satellite constellations on astronomy. The workshop's goal is to develop effective solutions to mitigate the identified impacts and to publish the solutions in a white paper that will be widely distributed. The first two days of the workshop are open to astronomers, satellite operators, dark-sky advocates, policy makers, and other stakeholders. **Register by 24 June 2020** to participate. [Read more...](#)

**AAS Meeting Presentations:** If you missed the following NOIRLab events at the June AAS meeting, they are available online for asynchronous viewing:

- **Director Pat McCarthy's** webinar on "NSF's NOIRLab: Impact of the COVID-19 Crisis and Science Restart Plans" [[Abstract](#)] [[Video](#)]
- Booth demos and discussion on:
  - Astro Data Archive** [[Demo Video](#)]
  - ANTARES** time domain broker [[Intro video](#)] [[Demo video](#)]
  - Data Lab** science platform [[Intro video](#)]
  - Evolution of Time Allocation Committee** [[Discussion video](#)]
- **Dara Norman's** plenary on "The Inclusion Revolution" [[Abstract](#)] [[Video](#)]
- **WIYN Observatory** special session on **exoplanet research capabilities** available through the NASA-NSF Exoplanet Observational Research (NN-EXPLORE) program [[Abstract](#)] [[Video](#)]

**Status of Observing Time Lost to COVID-19:** This article describes the status of NOIRLab-awarded observing programs that have lost observing time at Gemini Observatory, CTIO, KPNO, AAT, and CHARA as a result of observatory closures due to the ongoing pandemic. [Read more...](#)

**NOIRLab COVID-19 Update:** Gemini North resumed observations on 19 May 2020, and operations at the Gemini North Base facility continue with minimal daytime and nighttime staffing. Director's Discretionary Time and Fast Turnaround proposals are solicited for Gemini North; the next deadline is **30 June 2020**. NOIRLab sites in Chile and Arizona remain closed, and site-specific plans are being developed to restart mountain and base operations at these locations. Further updates will be available at:

<https://nationalastro.org/news/coronavirus-covid-19-measures-at-oir-lab>

### In this Issue

[SatCon 1](#)

[Summer AAS](#)

[COVID & Observing](#)

[Contact Us](#)

**NOIRLab Newsletter Launched:** A new newsletter series, *The NOIRLab Mirror*, highlights the science, technology, and program developments of all five Programs: Community Science and Data Center (CSDC), Cerro Tololo Inter-American Observatory (CTIO), Gemini Observatory, Kitt Peak National Observatory (KPNO), and Vera C. Rubin Observatory Operations. The inaugural issue also features the perspectives of five distinguished scientists on the appropriate roles of a national observatory. [Read more in the inaugural issue...](#)

#### **From the Gemini e-Newscast:**

- MAROON-X, the new fiber-fed high precision radial velocity spectrograph at Gemini North, was ready to go when Gemini North resumed operations on the night of 19 May 2020. It is expected to be available to the community in the 2020B semester.
- With more staff allowed on the summit, instrument changes have resumed at Gemini North.
- After a three-month hiatus, Fast Turnaround proposals are again solicited at Gemini North. The next deadline is **30 June 2020**.

[Read more in the Gemini e-Newscast...](#)

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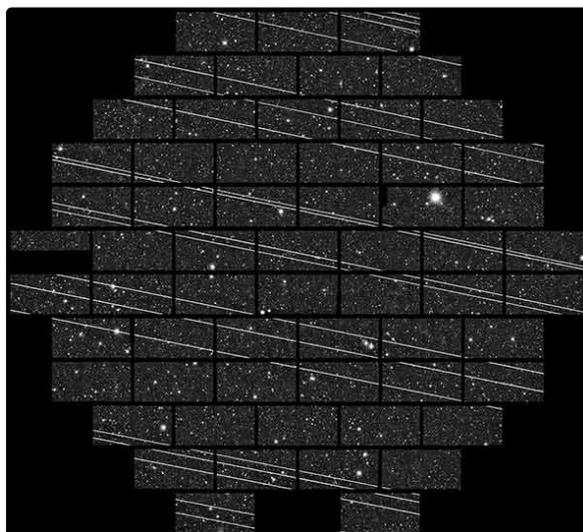
## **Impact of Satellite Constellations on Astronomy: Virtual Workshop**

*Constance Walker (NOIRLab)*

NSF's NOIRLab and the AAS, with support from NSF, are hosting the Satellite Constellations 1 (SATCON1) workshop virtually on **29 June - 2 July 2020**. The first two days are open to people interested in mitigating the impact of satellite constellations on astronomy.

This workshop will gather together astronomers, satellite operators, dark-sky advocates, policy-makers, and other stakeholders and interested parties to discuss, understand, and quantify the impacts of large satellite constellations on astronomy and the human experience of the night sky. The goal is to work collectively towards effective solutions to mitigate those impacts and to publish them in a white paper that will be widely distributed. As launches and deployments of these satellite constellations have already begun, and new launches are planned for every few weeks, time is of the essence.

In the weeks before the workshop, four working groups are drafting a report summarizing the current state of knowledge in four areas (1) synthesizing results from ground-based observations of satellites and identifying future observing program needs; (2) examining the current status of simulations for assessment of impact and need for further refinement; (3) exploring mitigation through lab



[Starlink satellites](#) imaged on 18 Nov 2019 from the Victor M. Blanco 4m Telescope at CTIO. Image Credit: NOIRLab/CTIO/AURA/DELVE

measurement of satellite surface reflection and detector performance as well as operational strategies; and (4) developing a set of metrics for protection of optical/IR observations based on the results of the other working groups.

The working groups will share their findings with registered attendees and other stakeholders in a document a few days before the workshop, and the findings will be presented and discussed during the first two days of the workshop. Through the outcome of the discussions, revisions will be made and a white paper will result with recommendations that include quantitative metrics and an understanding on the impact on the science as well as our cultural heritage. This white paper will then be widely disseminated.

#### **Conference dates:**

- Days 1 and 2 (Monday 29 June and Tuesday 30 June) are open to astronomers, satellite operators, dark-sky advocates, policy-makers, and other stakeholders. The first two days will be devoted to sharing results from the four working groups and discussion.
- On Days 3 and 4, Wednesday 1 July and Thursday 2 July, the working groups (and highly interested attendees) will merge the information from the discussions and the pre-workshop document into a final white paper.

We will meet for four hours each day, in two 2-hour blocks:

- 7:30am–9:30am US Pacific Time (10:30am–12:30pm US Eastern Time)
- 10am–noon US Pacific Time (1:00pm–3:00 pm US Eastern Time/Chilean Time)

Attend the first two days by registering at <https://aas.org/satellite-constellations-1-workshop>. Please register in advance so you can be admitted to the Zoom session by the moderator. There is no registration fee. Although the formal registration deadline was 22 June 2020, **late registrations will be accepted until 24 June 2020**.



## **Summer AAS Meeting Events**

The following NOIRLab events at the 236<sup>th</sup> AAS meeting are available online for asynchronous viewing.

### **Webinar: NSF's NOIRLab—Impact of the COVID-19 Crisis and Science Restart Plans**

*Pat McCarthy, NOIRLab Director*

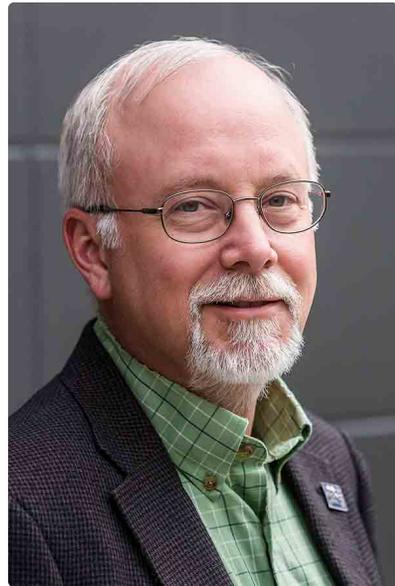
[View Presentation](#)

**Abstract:** Launched in October 2019, NSF's NOIRLab brings together all NSF-funded OIR nighttime astronomical research facilities within a single organization. NOIRLab is enabling the next decade of astronomical discoveries through world-class, cutting-edge facilities and science. Through its five Programs—[Cerro Tololo Inter-American Observatory](#) (CTIO), the [Community Science and Data Center](#) (CSDC), [Gemini](#)

[Observatory](#), [Kitt Peak National Observatory](#) (KPNO) and [Vera C. Rubin Observatory](#) operations—NOIRLab serves as a focal point for community development of innovative scientific programs, the exchange of ideas, and other creative development. Closed to science operations since mid-March, a staged restart plan is unfolding now with facilities reopening on timescales appropriate for the conditions at each observatory site. Come learn how NOIRLab can enhance your science and our developing plans for getting you back on sky!

#### At the NOIRLab Booth:

- **Astro Data Archive** [[Demo Video](#)]
- **ANTARES** time domain broker [[Intro video](#)] [[Demo video](#)]
- **Data Lab** science platform [[Intro video](#)]
- **Evolution of Time Allocation Committee** [[Discussion video](#)]



Patrick McCarthy

#### Plenary Presentation: The Inclusion Revolution

*Dara Norman, NOIRLab*

[View Presentation](#)

**Abstract:** The field of Astronomy has seen major changes in the last couple of decades. There have been discoveries that have evolved our understanding of the Universe. The development of new methods and gathering of datasets have expanded topical areas of the field in profound ways. We have even seen the community begin to recognize and understand that the health and well-being of the workforce cannot be ignored if we intend to continue with scientific breakthroughs. In this talk I will highlight some growing trends toward more diversity and inclusion in the field, the importance of access to decision making and research opportunities to advancing these trends, as well as some of the structural changes needed to usher in an Astronomical inclusion revolution.



Dara Norman

#### Special Session: The NASA-NSF Exoplanet Observational Research (NN-EXPLORE) Program at the WIYN Observatory

[View Session](#)

The NASA-NSF partnership for Exoplanet Observational Research (NN-EXPLORE), which seeks to advance the understanding of exoplanets and exoplanetary systems, supports community use of the open-access share of the WIYN 3.5-m telescope. To highlight the instrumentation and capabilities available to the community in support of the NN-EXPLORE program, the WIYN Observatory will hold a Special Session at the Summer AAS Meeting.



The session will include descriptions of science results and capabilities of WIYN's new precision radial-velocity spectrometer NEID (NN-explore Exoplanet Investigations with Doppler spectroscopy). First offered in the 2020A semester, NEID is designed for high-precision radial velocity measurements of exoplanet host stars, with a goal of achieving 27 cm/s precision per measurement. The instrument provides open-access to measurements that enable the study of Earth- and super-Earth-mass planets orbiting bright host stars over a wide range of spectral types.

The special session will also feature the science results and capabilities of other WIYN instruments that can be used for exoplanet research. These include the NASA Exoplanet Star (and) Speckle Imager (NESSI), the multi-object fiber-fed spectrograph Hydra, the WIYN High Resolution Infrared Camera (WHIRC), and the One Degree Imager (ODI). Observers interested in learning how WIYN can enhance their exoplanet research are encouraged to attend.

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5

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## Status of NOIRLab Observing Time Lost to COVID-19

**Gemini Observatory:** Gemini South halted operations on 16 March 2020 and remains closed. Gemini North halted operations on 23 March and resumed limited nighttime operations on 19 May. All uncompleted (non-ToO) Band 1 programs for 2020A will rollover into the following semester, as usual for Band 1 programs. No special arrangements will be made for Band 2 and 3 programs, and these programs will come to an end when the 2020A



semester closes. Target changes are not allowed, however if this would result in particular hardship (e.g., adverse effects on a student thesis), the NGO or PI should contact the Observatory and request an exception as soon as possible. Additional details are available [here](#).

**CTIO** has been closed since 18 March 2020. The observatory will rollover time on the Blanco 4m and SOAR telescopes awarded to survey and long-term proposals by the NOIRLab TAC and by the NASA TACs (HST, Chandra, Spitzer, and FERMI) for supporting ground based observations. Although observing time awarded to standard proposals



will not be automatically rolled over, requests for DD time will receive a sympathetic ear especially when observations are time critical or form part of an investigator's thesis research. Questions may be directed to CTIO Director Steve Heathcote ([sheathcote@ctio.noao.edu](mailto:sheathcote@ctio.noao.edu)).

**KPNO:** While KPNO has been closed since 18 March 2020, almost all of the open access time on Kitt Peak is NN-EXPLORE time on the WIYN 3.5m telescope, which has been devoted to NEID commissioning in the current schedule. An ongoing survey program on the WIYN 0.9m telescope will received prioritized scheduling when operations resume.



Questions may be directed to KPNO Director Lori Allen ([lallen@noao.edu](mailto:lallen@noao.edu)).

**AAT** operations went through phases of shutdown (26 March – 10 May) and restricted operations (11 May – 1 June; programs using 2dF only), with all observations carried out remotely since 2 June 2020. All scheduled NOIRLab programs will proceed as requested, although observations will need to be carried out remotely. Observers with sufficient bandwidth and some previous observing experience will be allowed to observe from home. All NOIRLab observers will be supported by local AAT support astronomers, and observers will be provided with all instructions after completing the Visitor's Form. Questions may be directed to Lucyna Chudczer ([lucyna.chudczer@astronomyaustralia.org.au](mailto:lucyna.chudczer@astronomyaustralia.org.au)) or the Siding Spring Observatory Director, Chris Lidman ([Christopher.Lidman@anu.edu.au](mailto:Christopher.Lidman@anu.edu.au)).

**CHARA** closed all on-sky operations on 19 March and resumed remote-only nighttime observing on 26 May. During this period, approximately 16.5 nights of NOIRLab community access time was lost. Weather data shows that more than half of the observing time lost to the shutdown would have been lost to weather (rain, snow, wind, humidity). Access to the observatory is currently very limited due to the ongoing pandemic. PIs with time remaining in the 2020A semester or in the upcoming 2020B semester are asked to contact Gail Schaefer ([schaefer@chara-array.org](mailto:schaefer@chara-array.org)) or Chris Farrington ([farrington@chara-array.org](mailto:farrington@chara-array.org)) to discuss remote observing options as only CHARA staff are able to access the facility. Currently, CHARA is treating time lost to the closure as equivalent to a bad weather event. CHARA programs that lost time in 2020A should reapply in 2021A. Questions and concerns regarding lost time can be directed to the CHARA Director Douglas Gies ([gies@chara.gsu.edu](mailto:gies@chara.gsu.edu)).

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3

## Contact Us

We welcome your input on this issue of *Currents*. Please contact us at [currents@noao.edu](mailto:currents@noao.edu). We look forward to hearing from you!

*Currents* is a spark plug for communication between us and our community. It provides updates—and solicits community input—on observing opportunities and programs and policies on a more rapid timescale than is possible with our *Newsletter*.

The NSF's NOIRLab is the US center for ground-based optical-infrared astronomy and is operated by the Association of Universities for Research in Astronomy (AURA), Inc. under cooperative agreement with the National Science Foundation.

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