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Currents

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DESI Survey Launched: A quest to map the Universe and unravel the mysteries of dark energy began officially last week at KPNO. Over the next five years, the Dark Energy Spectroscopic Instrument (DESI) will capture the light from tens of millions of galaxies, quasars, and stars. Millions of spectra have already been collected during the project's recently concluded four-month trial run. [Read more...](#)



WIYN Update: NEID commissioning has progressed smoothly despite pandemic-related restrictions, with the Operations Readiness Review, which marks the transition to routine operations, currently underway. In other news, a major upgrade to the workhorse multi-object spectrometer Hydra will soon allow it to position fibers twice as fast, with greater reliability. Installation and commissioning of the upgraded Hydra ("Hydra 21") is now underway with the first science observations scheduled for mid-June. [Read more...](#)



Rubin Project and Community Workshop: Save the date, **9-13 August**, for the 2021 Rubin Project and Community Workshop, which will be virtual again this year. We look forward to engaging with our colleagues during the event and will provide more details as they become available.



From the Gemini e-Newscast:

- **Virtual Gemini Science Meeting.** The first all-virtual Gemini Science Meeting will be held **23-26 August 2021**, beginning at 14:00 MST and running for 3-4 hours each day. The program, to be announced in early July, will feature invited science talks, Observatory updates, and hands-on training sessions. Attendance is free – there are no meeting or registration fees!

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- **Fast Turnaround Proposals Solicited.** Gemini North and South are once again accepting Fast Turnaround (FT) proposals. Successful proposals from this cycle will be active in the queue from July through September 2021. Gemini-N proposals for NIRI and NIFS with Altair NGS and LGS are welcome. See the [current call for proposals](#) for further details. The next deadline is **31 May 2021**.



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



WIYN Progress

Jayadev Rajagopal and Susan Ridgway

Commissioning of the NEID

Spectrometer. Re-started after the COVID-19 shutdown in December 2020, NEID commissioning has progressed smoothly despite the pandemic-related restrictions in place for the health and safety of NOIRLab staff. The Operations Readiness Review (ORR), a major milestone which will mark the transition of the project to routine operations, is currently underway.

The first half of the review, held on 28 April 2021, focused on the performance

requirements of the Port Adapter, Facilities, and the WIYN Telescope. This portion of the review thoroughly examined the ability of these major subsystems as well as that of the NEID queue system and personnel to support NEID in its mandate to produce world-class RV spectroscopy science for the US national community. The NEID team demonstrated strong performance in the ability of the (1) Port Adapter to deliver stable stellar and solar light to the spectrometer; (2) Facility and clean room to provide an ultra-stable environment for NEID; and (3) queue system to sustain efficient operations.



Issues of concern and metrics in progress were also discussed with the panel for guidance. The formal interim report is awaited.

The team is currently working at full throttle to prepare for the second half of the ORR, scheduled for 2 June, which will examine the performance of the spectrometer and data pipeline to meet the demanding RV accuracy requirements.

Hydra's Big Upgrade. In other exciting developments, the workhorse multi-object spectrometer Hydra is receiving a major upgrade. Well into its third decade of service, Hydra continues to be a productive instrument in high demand at WIYN. The mechanical robot (gripper) that positions the optical fibers as desired on the 1-degree wide focal plane is being replaced by a faster and less error-prone version. The control electronics and software are also getting a complete rebuild using modern PLC systems and machine-vision technology.

WIYN partnered with an industrial automation company, PROD Inc, on the design, development, and integration of the new Hydra, christened Hydra 21. The teams worked at a rapid pace despite the pandemic and, within a year of its inception, Hydra 21 is at WIYN after having passed factory-acceptance testing last week. A small WIYN team consisting of William McBride (WIYN senior engineer), Susan Ridgway (WIYN scientist and project manager), and Emily Hunting (WIYN optical engineer), attended the testing event at PROD's facility in El Paso, Texas.

The next few weeks will be busy with installation and commissioning, with the first science observations scheduled for mid-June. The new Hydra robot will be able to configure the fibers at least two times faster than before, with great accuracy, using current industry-standard technologies. Hydra 21 is responsive to the strong desire from its user community for a faster, more efficient instrument that is capable of more compact and dense field configurations. Hydra 21 will also be able to manage any future upgrades to the aging optical fiber cables. Welcome Hydra 21!

Contact Us

We welcome your input on this issue of *Currents*. Please contact us at 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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