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Currents

[Dark Energy Camera Legacy Survey Announces Second Data Release:](#) The second data release from DECaLS includes reduced images and source catalogs covering approximately 2100 square degrees of sky in g - and r -band and 5300 square degrees in z -band. Dive into survey images and explore the Universe with the survey's Imagine Sky Viewer. DECaLS is one of three public surveys that will jointly image 14,000 square degrees of sky to provide targets for the Dark Energy Spectroscopic Instrument cosmology project. [Read more...](#)

[NOAO @ January AAS:](#) Presentations from the following NOAO events at the 2016 AAS meeting in Kissimmee are now posted. [Read more...](#)

- NOAO Transformed: A Status Report (NOAO Town Hall)
- News from Kitt Peak National Observatory
- US Gemini NGO Mini-Workshop on AO
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- TMT Thermal IR Science and Instrumentation Workshop
- Light Pollution at Campus/University Observatories
- A Kit for Exploring Light Pollution Issues and Solutions
- Posters by NOAO REU students

[TMT Science Forum:](#) The next TMT Science Forum will be held **24-26 May 2016** in Kyoto, Japan. The forum is an opportunity for the international astronomical community to meet, collaborate, and plan for future TMT science programs. Registration is now open. [Read more...](#)

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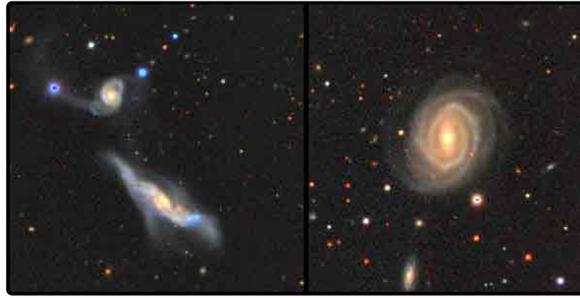
Dark Energy Camera Legacy Survey Announces Second Data Release

The Dark Energy Camera Legacy Survey (DECaLS) announced its second data release (DR2) on 15 January 2016. DECaLS (PIs: David Schlegel and Arjun Dey) is in the middle of mapping 6200 square degrees of the extragalactic sky in g , r and z using the Dark Energy Camera on the Blanco 4-m telescope at the Cerro Tololo Inter-American Observatory. The project is designed to investigate a broad range of astrophysical questions, ranging from studies of Milky Way structure and galaxy evolution to large-scale structure and cosmology. The survey goals and the first data release were described in an [earlier issue of Currents](#).

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DECaLS DR2 includes reduced images and source catalogs covering approximately 2100 square degrees of sky in *g*- and *r*-band and 5300 square degrees in *z*-band. Roughly 1800 square degrees has been imaged in all three bands. The area covered can be visualized using the project's [Imagine Sky Viewer](#) built by Dr. Dustin Lang. An [Image Gallery of Large Galaxies](#) constructed by Dr. John Moustakas is also available.



Two bright galaxies imaged by DECaLS: UGC 12589 (left) and UGC 9968 (right).

DR2 includes not only all the data taken by DECaLS from August 2014 through June 2015, but also all public DECam *g*-, *r*-, and *z*-band data within the DECaLS footprint obtained by other projects. The latter include data (now public) from the Dark Energy Survey in the "Stripe 82" region.

Mapping the Sky. DECaLS is one of three surveys that will jointly image 14,000 square degrees—nearly one-third of the sky—to provide targets for the Dark Energy Spectroscopic Instrument cosmology project. The other two projects are the Mayall *z*-band Legacy Survey (MzLS), which begins in February 2016, and the Beijing-Arizona Sky Survey (BASS), which is underway at the Bok Telescope on Kitt Peak. MzLS and BASS will provide *g*-, *r*-, and *z*-band imaging at declinations north of +34 degrees.

Making it Public. All three surveys are being run as public projects, with no proprietary period for the raw data. Reduced images are available as soon as the pipeline processing at NOAO is complete, and official data releases are scheduled every 6 months. All of the data will be served by the NOAO Science Archive and the National Energy Research Scientific Computing Center at the Lawrence Berkeley National Laboratory. For further details, please see legacysurvey.org.

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NOAO @ January AAS

Presentations from NOAO events at the 2016 AAS meeting in Kissimmee are now posted. If you missed these events (or wish to relive the experience!), please follow the links below.

- [NOAO Transformed: A Status Report](#) [29.4 MB PDF]



NOAO Director David Silva highlights new research capabilities for the NOAO community (including new instrumentation, survey data sets, and data exploration tools) as well as future directions and opportunities.

- [News from Kitt Peak National Observatory](#) [22.9 MB PDF]



Lori Allen, Kitt Peak Associate Director, describes the exciting new missions for the Mayall 4-m, WIYN 3.5-m, and 2.1-m telescopes, their current instrumentation, and Observatory efforts in outreach and dark sky protection.

- [US Gemini NGO Mini-Workshop on AO](#)

A suite of presentations provide an introduction to adaptive optics (Claire Max), illustrate the process of planning an observational program (Tim



Davidge), and discuss issues associated with data processing and analysis (Franck Marchis).

- [The US National Gemini Office \(NGO\): What we can do for you](#) [3.7 MB PDF]

Dara Norman discusses the US National Gemini Office (NGO), part of the NOAO System Science and Data Center (NSSDC) in Tucson, AZ, and the services it provides to observers.

- [ANTARES: An Event Broker for LSST](#) [12 MB PDF]

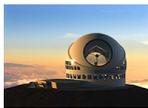


Gautham Narayan introduces a prototype system to identify rare transient events in real-time, from “multi-messenger” data streams. Several demos illustrate how an alert can be characterized with only position information, its light curve analyzed, and the event compared to a library of known events using machine learning algorithms.

- [Hunting Dwarf Galaxies: A Preview of the NOAO Data Lab](#) [7.8 MB PDF]

NOAO is developing new Data Lab tools to facilitate the exploration of large datasets. Here Knut Olsen demonstrates how the Hydra II dwarf galaxy discovered by the SMASH survey is easily identified using Data Lab services, as is the RR Lyrae variable star that lurks within it.

- [Thirty Meter Telescope Open House](#) [12.6 MB PDF]



Fiona Harrison and Mark Dickinson review the status of TMT and opportunities for US community participation.

- [TMT Thermal IR Science and Instrumentation Workshop](#)

Presentations discuss concepts and science cases for a thermal-IR imager and spectrometer for TMT, in preparation for an anticipated call for proposals for second generation instruments.

- [Light Pollution at Campus/University Observatories](#) [32.5 MB PDF]



Panelists Doug Arion, James Lowenthal, and Pat Seitzer discuss light pollution mitigation at university and college campuses.

- [A Kit for Exploring Light Pollution Issues and Solutions](#) [54.6MB PDF]

Connie Walker introduces the Quality Lighting Teaching Kit. Produced by NOAO’s EPO group, the kit features problem-based learning scenarios that are designed for use in schools, afterschool programs, museums, and national parks.

- **REU Student Posters**

Presentations by the following students showcased research carried out in Summer 2015:

- [Rose Gibson](#) (Effects of Commercial Airline Traffic on LSST Observing Efficiency, [4.1 MB PDF])



- [Logan Jones](#) (Star Formation and AGN populations in Abell 1689, [920 KB PDF])
- [Elizabeth Juelfs](#) (Reddening in the SMASH Survey, [2.4 MB PDF])
- [Jacklyn Pezzato](#) (Kepler Observations of ASAS Variable Stars, [562 KB PDF])
- [Erick Sandberg](#) (Mass Loss in Main Belt Asteroids, [3.3 MB PDF])
- [Tayeb Zaidi](#) (Supernova Lightcurve Classification, [738 KB PDF])

REU Students at the 2016 January AAS Meeting

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The 2016 TMT Science Forum International Partnership for Global Astronomy

**Kyoto, Japan
24 to 26 May 2016**

<https://conference.ipac.caltech.edu/tmtsf2016/>

The annual TMT Science Forum gathers members of the international astronomical community to meet, collaborate, and plan for future TMT science programs. It is the premier opportunity to learn about the status of the observatory, its instrumentation and adaptive optics systems, and to join in shaping TMT's future.

This year's TMT Forum is the first to be held in Asia, and its central theme is international collaboration. TMT will be built and operated internationally, and the Forum is a venue for members of the international TMT community to map out cooperative strategies for developing the observatory and its instrumentation, running the facility, and carrying out science with global reach. Sessions and talks will emphasize:

- International TMT Key Project science
- Cross-partnership scientific collaboration
- Second-generation TMT instrumentation and AO development
- Effective strategies for observatory operations
- Coordinating science planning with other observatories and facilities within the TMT partnership

There will be invited science talks, as well as topical parallel sessions organized by TMT's International Science Development Teams (ISDTs), with opportunities for contributed talks and posters.

The 2016 TMT Forum will be held in beautiful Kyoto, Japan, at the Kyoto International Community House. Registration is now open, and details about the science program, hotels, and other local information will be available soon at the [conference web site](#).

The National Science Foundation provides travel support for astronomers in the US-at-large community to attend the TMT Science Forum. To be considered for support, please write to the US TMT Science Working Group at tmt@noao.edu. Funding is limited, and it is important to plan travel to Japan promptly, so early requests will be given strong consideration.

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Contact Us

Your input is welcome on any of these issues. Please send your thoughts to:
currents@noao.edu.

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

NOAO is the national center for ground-based nighttime astronomy in the United States 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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