



December 2016 • Issue 42

Currents

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[Call for New Membership in the TMT ISDTs:](#) The annual call for new members of the [Thirty Meter Telescope \(TMT\) International Science Development Teams \(ISDTs\)](#) is now open. The ISDTs are an opportunity to get involved in TMT and to provide scientific input that will help shape the observatory's capabilities, operations plans, and future directions. Membership is open to all Ph.D. scientists. Applications are due **20 January 2017**. [Read more...](#)

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First SMASH Data Release Through the Prototype Data Lab

At the NOAO Booth and Session 416.04

The Survey of the Magellanic Stellar History (SMASH) will issue its first data release during the January AAS Meeting. SMASH, an NOAO Survey Program, is using DECam to map 480 square degrees of sky to depths of $griz \sim 24$ and $u \sim 23$ with the goal of identifying broadly distributed, low surface brightness stellar populations associated with the stellar halos and tidal debris of the Magellanic Clouds. The first data release contains



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measurements of approximately 100 million objects distributed in discrete fields spanning an area of about 2000 square degrees. The release will also include many ancillary data products produced by the SMASH pipeline. Tools provided through a prototype version of the NOAO Data Lab will be available to access and explore the data. These include a custom Data Discovery tool, database access to the SMASH catalog, a Python query interface to the database, an image cutout service, and a Jupyter notebook server with example notebooks for exploratory analysis. Stop by the NOAO Booth for a quick tour of the SMASH data release and Data Lab prototype, and come hear the presentation of SMASH by PI David Nidever in session 416.04!

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NOAO Mini-Workshop: Mining Data from Public Archives

Friday 6 January 2017, 2:00 - 3:30 pm, San Antonio 4 room

NOAO is sponsoring a splinter session workshop on mining data from public archives at the January AAS meeting in Grapevine Texas. As in other workshops in the series sponsored by the US National Gemini Office, the workshop will have speakers from NOAO and Gemini Observatory and feature topics of importance to the Gemini user community.



This year's topic was inspired by work on observatory statistics by Andy Adamson (Gemini) and Letizia Stanghellini (NOAO). Publication statistics from Gemini and other major public observatories show that less than half of the programs scheduled result in a publication. At Gemini, the publication rate is independent of instrument, mode of observation, and whether or not raw or pipeline reduced data are delivered. Even the percentage of the program completed does not have a strong impact for programs over 50 percent complete. The average time between observation and publication is two years, with the number publications after two years declining roughly exponentially.

With all data taken at public observatories entering the public record after the proprietary period expires, these archival data offer additional research opportunities. More generally, with observational astronomy transitioning from a strong dependence on PI-driven research to survey science, there is greater interest in the discovery and use of archival and survey data.

To address these opportunities and interests, the workshop will begin with a review of observatory metrics and conclude with a discussion of tools for mining archived data. Two of the major archives, MAST and IPAC, will be reviewed. STScI promotes the use of its archived data through MAST. Survey and other data available through IPAC have become a fundamental part of many research programs. The speakers will be Andy Adamson on Gemini publication statistics and the Gemini archive, Scott Fleming on MAST, Harry Teplitz on IPAC, and Knut Olsen on the NOAO DataLab project. DataLab has a goal of enabling efficient exploration and analysis of large datasets, especially those being generated on NOAO's wide field telescopes, and features tools for catalog science, data exploration, collaborative research, and user defined custom workflows. These tools are well suited for mining both survey and archival data.

The splinter session will be held Friday January 6 from 2 - 3:30 PM in the San Antonio 4 room of the Gaylord Texan Resort and Convention Center. You must be registered at the AAS meeting to attend. The room accommodates 50 with seating on a first come basis.

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The Thirty Meter Telescope Open House

Friday 6 January 2017, 10:00 - 11:30 am, Yellow Rose Ballroom

The Thirty Meter Telescope (TMT) will make transformational contributions to most areas of astronomy and astrophysics, from the solar system to cosmology. It will have an order of magnitude more collecting area than today's largest optical/infrared telescopes, and nearly 5 times better angular resolution than the James Webb Space Telescope at similar infrared wavelengths.



Artist's rendition of the Thirty Meter Telescope

Presentations at this year's TMT Open House will report on the status of the observatory, the permitting process in Hawaii, and the selection of the Observatorio del Roque de los Muchachos on La Palma in the Canary Islands, Spain, as the primary alternative TMT site. There will be updates on the continued development of the observatory and its instrumentation, planning for future-generation instruments, and ongoing activities in education, workforce development, and public outreach.

As part of a cooperative agreement between NSF-AST and TMT, the US TMT Science Working Group, organized by NOAO, has worked with TMT to develop a model for possible US national participation in the observatory. This plan describes the scientific, technological, educational, and programmatic benefits of TMT participation for the US community, and considers choices that would maximize those benefits. The Open House will highlight the continuing role of the US astronomical community in planning the observatory and its future scientific programs. Complimentary refreshments will be provided.

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Light Pollution Solutions Communities Can Use

January 3 (Tuesday) from 1:00 - 5:00pm in the Mustang 6 room

A wealth of knowledge and expertise on responsible lighting and best practices exists among the astronomical community and its associates. At the January AAS meeting, the AAS Committee on Light Pollution, Radio Frequency Interference and Space Debris will host a workshop designed to share information that can be put into practice.

The workshop will begin with a plenary overview, followed by breakouts at individual tables, and conclude with a panel discussion on best practices for specific themes (LED conversion, health impacts, codes). International Dark-Sky Association staff member John Barentine will help facilitate the workshop, as will representatives from Lowell Observatory (Jeff Hall, Director), Kitt Peak National Observatory (Lori Allen, Director), Chris Smith (AURA-O, Head) and Chris Monrad (Monrad Engineering). McDonald Observatory/UT Austin has also been invited.

The workshop will showcase successful outcomes with real "before" and "after" data. Examples include a McDonald Observatory program to upgrade dusk-to-dawn fixtures and the effort by Lowell Observatory, working with consultants Monrad and Benya, to find a dark-sky-preserving solution for the Flagstaff community.

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Call for New Membership in the TMT International Science Development Teams

Applications for membership in the [Thirty Meter Telescope \(TMT\) International Science Development Teams \(ISDTs\)](#) are being accepted until **20 January 2017**. The ISDTs are research groups that provide scientific guidance and feedback to the

TMT project, stimulate planning for future TMT observing programs, and build connections between TMT and the international astronomical community. They foster scientific collaboration across the TMT partnership and beyond, into the broader astronomical community. ISDT membership is open to all qualified Ph.D. scientists.



Artist's rendition of the Thirty Meter Telescope

ISDT members contributed extensively to the 2015 edition of the [TMT Detailed Science Case](#). They have organized parallel topical sessions at the annual [TMT Science Forum](#), and have recently written a set of concept studies for TMT Key Project observing programs.

There are currently nine ISDTs, organized around the following science themes:

- Fundamental physics and cosmology
- Early universe, galaxy formation and the intergalactic medium
- Supermassive black holes
- Milky Way and nearby galaxies
- Stars, stellar physics and the interstellar medium
- Formation of stars and planets
- Exoplanets
- Our solar system
- Time domain science

Applicants may also propose to form new ISDTs to focus on science that does not fit well within the scope of the existing groups, or on subtopics drawn from one or more of the existing ISDTs that merit additional emphasis within TMT planning.

Application instructions are available at the [TMT ISDT web site](#), where you can also find more detailed information about the ISDTs, their organizers, membership, and activities. ISDT membership entails a commitment of time and effort. Applications will be evaluated by the ISDT organizers and the TMT Science Advisory Committee based on the candidate's scientific qualifications, the activities that he or she proposes to carry out in support of the ISDT and TMT, and the level of effort that he or she can commit to investing in ISDT activities.

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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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