



<https://almascience.nrao.edu/news/proposing/call-for-proposals>

Upcoming Events



[ALMA Cycle 5 Call for Proposals Submission Deadline](https://almascience.nrao.edu/news/proposing/call-for-proposals)

<https://almascience.nrao.edu/news/proposing/call-for-proposals>

Apr 20, 2017



[NRAO/LBO Community Day @ UNAM-Morelia](https://science.nrao.edu/science/meetings/2017/unam-morelia17/)

<https://science.nrao.edu/science/meetings/2017/unam-morelia17/>

Apr 25 - 26, 2017 | Morelia, Mexico



[American Astronomical Society Meeting](https://aas.org/meetings/aas230) (<https://aas.org/meetings/aas230>)

Jun 4 - 8, 2017 | Austin, Texas



[2017 Astrobiology Graduate Conference](http://abgradcon.github.io/index.html) (<http://abgradcon.github.io/index.html>)

Jun 5 - 9, 2017 | Charlottesville, VA



[Women in Astronomy IV: The Many Faces of Women Astronomers](http://go.nrao.edu/wiaiv)

<http://go.nrao.edu/wiaiv>

Jun 9 - 11, 2017 | Austin, TX



[Developing the ngVLA Science Program Workshop](http://go.nrao.edu/ngvla2017) (<http://go.nrao.edu/ngvla2017>)

Jun 26 - 29, 2017 | Socorro, NM



[Measuring Star Formation in the Radio, Millimetre, and Submillimetre](http://www.alma.ac.uk/index.php/meetings/uk-arc-node-meetings/106-measuring-star-formation-in-the-radio-millimetre-and-submillimetre)

<http://www.alma.ac.uk/index.php/meetings/uk-arc-node-meetings/106-measuring-star-formation-in-the-radio-millimetre-and-submillimetre>

Jul 24 - 26, 2017 | Manchester, United Kingdom



[Fred Lo Science Symposium](/enews/10.4/index.shtml#us_china) (/enews/10.4/index.shtml#us_china)

July 24 - 26, 2017 | Charlottesville, VA



[5th U.S. – China Workshop on Radio Astronomy Science & Technology](/enews/10.4/index.shtml#us_china)

/enews/10.4/index.shtml#us_china

July 27 - 29, 2017 | Charlottesville, VA



Futures III (<http://go.nrao.edu/Futures3>)

Aug 2 - 4, 2017 | Berkeley, CA



ALMA Long Baseline Workshop (<http://alma-intweb.mtk.nao.ac.jp/~diono/meetings/longBL2017/>)

Oct 3 - 5, 2017 | Mielparque Kyoto, Japan



6th VLA Data Reduction Workshop (<http://go.nrao.edu/vla-drw>)

Oct 23 - 27, 2017 | Socorro, NM

Futures III Registration Open

Tony Beasley



The NRAO has organized a series of three conferences for the community to broadly discuss and seek consensus regarding potential U.S. futures for radio-millimeter-submillimeter (RMS) science in the 2020's and beyond. Funded by the Kavli Foundation and Associated Universities, Inc., the third and final conference in this series – Futures III – will be 2-4 August 2017 in Berkeley, California and will be attended by scientists from U.S. and international universities, observatories, and laboratories in virtually every field of astrophysics.

Registration for Futures III is now open, and the scientific program and travel information are now available at the [conference website \(http://go.nrao.edu/futures3\)](http://go.nrao.edu/futures3).

Futures III will continue discussions and analysis of two key opportunities emerging from the Futures I and Futures II conferences – a next generation Very Large Array (ngVLA) and Spectral-Line Cosmology & Low Frequency Instruments, including the Hydrogen Epoch of Reionization Array (HERA) and related intensity mapping opportunities. An update on other key areas – Cosmic Microwave Background, Pulsars, and Midscale developments – is also planned. Over the past two years, the Kavli meeting series has been a community-wide effort to explore our scientific visions for the next decade, and seeking to develop consensus and support for RMS initiatives on all resource scales in the upcoming decadal survey.

[Futures I \(https://science.nrao.edu/futures/u.s.-radio-futures-conferences\)](https://science.nrao.edu/futures/u.s.-radio-futures-conferences) was held 15-17 December 2015 in Chicago and was structured around the key RMS science themes and community priorities identified in the Astro2010 Decadal Survey. This included fields where radio data was supporting other instruments, and those focused on possible standalone radio astronomy outcomes. Futures I yielded a compelling definition of the transformational science that interests the community and motivates the exploration of the scope and feasibility of the future RMS instrument and technique options.

The community and NRAO selected four areas for deeper discussion at the [Futures II Conference \(https://go.nrao.edu/Futures2\)](https://go.nrao.edu/Futures2), held 3-5 August 2016 in Baltimore: (1) a next generation Very Large Array; (2) a Hydrogen Epoch of Reionization Array; (3) pulsar instrumental and scientific opportunities; and (4) the Cosmic Microwave Background. Parallel sessions broadly discussed potential RMS *Flagship* and *Small/Midscale* initiatives associated with these. *Flagship* options are major investments with widespread community benefit and support that would require funding by or on a scale comparable to the NSF Major Research Equipment and Facility Construction program. *Small/Midscale* initiatives are investments that might be funded via the NSF Mid-Scale Initiative Program.

We look forward to seeing you in Berkeley in August!

ALMA Cycle 5 Call for Proposals



The ALMA Director, on behalf of the Joint ALMA Observatory (JAO) and the partner organizations in East Asia, Europe, and North America, is pleased to announce the ALMA Cycle 5 Call for Proposals is OPEN for scientific observations to be scheduled from October 2017 to September 2018. It is anticipated that 4000 hours of the 12-m Array time and 3000 hours of the Atacama Compact Array (ACA) time, also known as the Morita Array, will be available for successful proposals from Principal Investigators in Cycle 5.

The Cycle 5 proposal submission deadline is:

15:00 UT on Thursday, 20 April 2017

[Detailed information about the ALMA Cycle 5 Call for Proposals \(https://almascience.nrao.edu/proposing/call-for-proposals\)](https://almascience.nrao.edu/proposing/call-for-proposals) is available on the [ALMA Science Portal \(https://almascience.nrao.edu\)](https://almascience.nrao.edu).

Supplemental 7-m Array Call for Proposals for ALMA Cycle 4



The ALMA Director announces that the Joint ALMA Observatory (JAO) will accept observing proposals that request the 7-m Array in the remainder of Cycle 4, which ends on 30 September 2017. This proposal call enables the community to propose projects for undersubscribed regions of the observing queue for the 7-m Array. Up to 800 hours on the 7-m Array will be allocated through this opportunity.

Proposals can be submitted starting 21 April 2017 and will be reviewed as they are received. Instructions on how to submit a proposal through the ALMA Observing Tool will be made available on the ALMA Science Portal on 21 April 2017. Proposals can be submitted at any time up through the end of Cycle 4 or until the available time has been fully allocated. An announcement will be posted on the ALMA Science Portal when this opportunity closes.

[Detailed information about the Supplemental Call for Proposals to use the 7-m Array \(https://almascience.nrao.edu/news/supplemental-call-for-proposals-to-use-the-7-m-array-in-cycle-4\)](https://almascience.nrao.edu/news/supplemental-call-for-proposals-to-use-the-7-m-array-in-cycle-4) is available on the [ALMA Science Portal \(https://almascience.nrao.edu\)](https://almascience.nrao.edu).

ALMA Program News

Al Wootten



Credit: P. Carillo

An ALMA antenna begins its journey to a longer baseline configuration.

ALMA science observations for Cycle 4 resumed in configuration C40-1 – 3.7 arcsec beam at 100 GHz, 155m longest baseline – in early March. Antennas are being moved to configuration C40-3 – 1.5 arcsec beam at 100GHz, 15 - 460m baselines – through mid-April. Some configuration C40-1 ALMA projects have already been delivered to North American investigators. There are 794 post-proprietary datasets available in the ALMA Archive.

A Call for ALMA Proposals with detailed information on Cycle 5 was issued in March 2017, with a deadline for proposal submission on 20 April 2017. An [announcement on the ALMA science portal \(https://almascience.nrao.edu/news/additional-information-for-cycle-5-proposals-1\)](https://almascience.nrao.edu/news/additional-information-for-cycle-5-proposals-1) includes the Cycle 5

configuration schedule and additional important information for preparing proposals. These configuration files are included in the recent CASA 4.7.2 release.

A [Supplemental Call for Proposals to use the 7-m Array in Cycle 4](#)

<https://almascience.nrao.edu/news/supplemental-call-for-proposals-to-use-the-7-m-array-in-cycle-4>) has also been announced, enabling the community to propose projects that will fill in undersubscribed portions of the 7-m observing queue. NAASC does not evaluate missing flux at short spacings in the Quality Assurance 2 (QA2) assessment of data products. The need for 7-m Array observations can be evaluated by plotting the calibrated amplitude against uv distance for the science target data from the most compact 12-m Array observations, using, e.g., the CASA plotms tasks (such plots are provided in the hif_applycal WebLog page for pipeline calibrated data).

The Supplemental Call offers PIs a good opportunity to obtain short spacing observations to complement their data if their science goals need them. PIs may wish to avail themselves of this special call opportunity. More information on recognizing the effect of missing short spacings may be found in the Synthesis Imaging Workshop lectures (cf. slides 63-71 of [Imaging and Deconvolution](#) https://science.nrao.edu/science/meetings/2016/15th-synthesis-imaging-workshop/documents/wilner_vla16.pdf) David Wilner (CfA). PIs preparing for ALMA Cycle 5 should include elements in their proposals to gather short spacing data if they think it will enable them to achieve their science goals.

NRAO conducted nine [Community Days and Proposal Planning Events](#)

<https://science.nrao.edu/facilities/alma/community1>) in April in advance of the ALMA Cycle 5 proposal deadline. These events are one- to two-day workshops organized and led by experienced local postdocs from the ALMA Ambassadors program and/or North American ALMA Science Center staff with a focus on the capabilities of ALMA, mm/submm interferometry observing techniques, and the tools required to design ALMA observing programs and to submit proposals. Two further events are planned: at UNAM in Morelia, Mexico on 25-26 April, and at Cornell on 10-11 July.

A [Call for Proposals for ALMA Development Studies](#) (<https://science.nrao.edu/facilities/alma/alma-develop>) was released 1 March 2017. The deadline for proposals is 1 May 2017 for funding during Fiscal Year 2018, depending on the U.S. federal budget process. We welcome any member from within the North America ALMA Operations Partnership to submit a proposal to investigate a potential ALMA upgrade (hardware, software or advanced techniques).

2017 Jansky Fellows

The National Radio Astronomy Observatory (NRAO) Jansky Fellowship program provides outstanding opportunities for research in astronomy. Jansky Fellows formulate and carry out investigations either independently or in collaboration with others within the wide framework of interests of the Observatory. The program is open each fall to candidates with interest in radio astronomy instrumentation, computation, and theory, and prior radio experience is not required. Multi-wavelength projects leading to a synergy with NRAO instruments are encouraged. We are pleased to announce that three new Jansky Fellows will be joining NRAO in fall 2017.

Kazunori Akiyama will be a Jansky Fellow at the MIT Haystack Observatory. He completed his Ph.D. from the University of Tokyo under the supervision of Mareki Honma and was previously a Japan Society for the Promotion of Science (JSPS) fellow at the Haystack Observatory. Kazunori studies the immediate environment of the supermassive black holes in our Galactic Center, Sagittarius A*, and Messier 87 with the Event Horizon



Telescope (EHT). Kazunori is also developing new EHT imaging algorithms to create the first images of black holes.



Kunal Mooley will be a Jansky Fellow with a joint appointment at NRAO in Socorro and Caltech. During his Ph.D., Kunal worked on transient surveys with the Very Large Array (VLA), and after receiving his degree in May 2015, went to Oxford as a Hintze Research Fellow to expand his transient program using other telescopes such as the Arcminute Microkelvin Imager and Giant Metrewave Radio Telescope. Kunal has expertise in the study of Galactic and extragalactic transients, the execution of radio surveys, and with rapid multi-wavelength follow-up observations. With his Jansky Fellowship, Kunal will leverage the VLA Sky Survey to study hidden explosions, and will leverage the Jansky VLA mapping of Gravitational Wave bursts as Afterglows in Radio (JAGWAR) program on the VLA to search for the radio afterglows of neutron star mergers.



Nithyanandan Thyagarajan will be a Jansky Fellow at NRAO in Socorro. He received his Ph.D. from Columbia University working with Prof. David Helfand on identifying and characterizing one of the largest compilations of radio transients to date from the VLA Faint Images of the Radio Sky at Twenty-Centimeters (FIRST) survey. His current research focuses on characterizing the factors that determine the sensitivity of low frequency cosmology experiments, such as the detection of redshifted neutral hydrogen from the Epoch of Reionization (EoR). At NRAO, he will contribute to designing instruments and experiments for a first successful EoR detection, implementing a novel radio interferometry architecture that has the efficiency and versatility to image and process data from hundreds to thousands of receiving elements while simultaneously addressing the challenges of computational cost and data throughput faced by large arrays of next-generation radio telescopes.

2017 Jansky Lectureship – Call for Nominations

Lewis Ball



The Karl G. Jansky Lectureship is an honor established by the trustees of Associated Universities, Inc., to recognize outstanding contributions to the advancement of radio astronomy. First awarded in 1966, it is named in honor of the man who, in 1932, first detected radio waves from a cosmic source. Karl Jansky's discovery of radio waves from the central region of our Milky Way Galaxy started the science of radio astronomy.

The 2017 Jansky Lecturer will have made significant contributions related to radio astronomy, and will promote the appreciation of the science of radio astronomy through public lectures at the NRAO sites. A demonstrated ability to engage a wide audience will be a factor in determining the awardee. Visit the [Jansky Lectureship website \(https://science.nrao.edu/science/jansky-lecture\)](https://science.nrao.edu/science/jansky-lecture) for a list of the previous recipients of this prestigious award.

Additional information, including the nomination and selection process, is [available online \(https://science.nrao.edu/science/jansky-lecture/charter\)](https://science.nrao.edu/science/jansky-lecture/charter).

Nominations for the 2017 award should be concise (~1 page) and address both the nominee's contribution to the advancement of radio astronomy and their potential to increase public appreciation through the Jansky

Lecture.

Nominations should be sent to jutley@nrao.edu (<mailto:jutley@nrao.edu>) by 28 April 2017.

NRAO scientific staff will be given an opportunity to vote on nominations received and the results will be included in the recommendation to the NRAO Director.

Call for Proposals with the Next Generation BLAST Polarimeter

Laura Fissel



The Balloon-borne Large Aperture Sub-millimeter Telescope (BLAST) collaboration is soliciting proposals for observing time for our 2017 Long Duration Balloon flight over Antarctica.

Our upgraded experiment is designed to observe polarized thermal emission from interstellar dust over degree scales with sub-arcminute resolution, and to thereby investigate interstellar magnetic fields and dust properties over a wide range of densities. During our planned 28-day flight, we will obtain simultaneous measurements in three broad bands centered at 250, 350, and 500 microns.

Deadline for letters of intent: 2 June 2017

Deadline for proposals: 1 September 2017

Our Antarctic launch is scheduled for December 2017. Up to 140 hours will be allocated to shared risk proposals from the general astronomical community. Proposers may request maps in linear polarization or total intensity.

For information on proposal submission, please visit our [website \(http://sites.northwestern.edu/blast/\)](http://sites.northwestern.edu/blast/).

Fred Lo Science Symposium and 5th U.S. – China Workshop on Radio Astronomy Science & Technology



Fred Lo

The 5th U.S. – China Workshop on Radio Astronomy Science & Technology will be held in Charlottesville, Virginia, U.S.A. from 27-29 July 2017 and will be preceded by a Symposium to celebrate the life and career of former NRAO Director Fred Lo from 24-26 July. The Symposium will feature science sessions highlighting Fred's many contributions to radio astronomy throughout his career.



Five-hundred-meter Aperture Spherical radio Telescope (FAST)

The Science and Technology Workshop will continue the discussions and planning held in previous years to support collaborations in joint scientific programs as well as cooperation in planning, building, and commissioning new facilities and instrumentation. Potential joint observing programs will include the Very Long Baseline Array, the new Shanghai Astronomical Observatory 65m radio telescope, the Five-hundred-meter Aperture Spherical radio Telescope (FAST), and other existing and planned U.S. and Chinese facilities. Technical discussions will include the proposed 110m QiTai radio Telescope (QTT), handling big data, space Very Long Baseline Interferometry, and back ends.

Registration for these meetings will open soon. Inquiries may be sent to USChina5@nrao.edu (<mailto:USChina5@nrao.edu>).

CASA 4.7.2 ALMA & VLA Pipeline

Jürgen Ott & the CASA Team



The ALMA and VLA data reduction pipelines that are included in Common Astronomy Software Applications (CASA) package, release 4.7.2, are now the official versions and were deployed for operational use at both sites in early April.

CASA 4.7.2 is available from the [Obtaining CASA \(https://casa.nrao.edu/casa_obtaining.shtml\)](https://casa.nrao.edu/casa_obtaining.shtml) webpage.

Supported Operating Systems for CASA 4.7.2 are:

- Linux (64bit): RedHat 6 & 7
- Mac OS: 10.10 & 10.11

All the new features in the CASA 4.7.2 release are described in the [CASA release notes \(https://casa.nrao.edu/release_notes.shtml\)](https://casa.nrao.edu/release_notes.shtml). The [VLA pipeline documentation \(http://go.nrao.edu/vla-pipe\)](http://go.nrao.edu/vla-pipe) and the [ALMA pipeline documentation \(https://almascience.nrao.edu/processing/science-pipeline\)](https://almascience.nrao.edu/processing/science-pipeline) are also online.

CASA 4.7.2 is the second patch for 4.7.0, and includes a fix for a CASA 4.7.1 bug concerning the restoration of mosaics in telean. The primary beam correction was inadvertently applied to the model image, which caused problems during cleaning and caused the output restored image to have the primary beam corrected model added to uncorrected residuals, which is incorrect. This behavior is independent of the value of the pbcor parameter (for mosaics the pbcor=True option is not yet implemented). The issue only occurred in CASA 4.7.1.; CASA 4.7.0 is not affected.

For CASA 4.7.1 and later, a correction for the tropospheric delay bug was added that affects VLA data acquired between 9 August and 14 November 2016. The fix is included in gencal when used with caltype='antpos'. All affected observations have now been reprocessed by NRAO staff with the CASA 4.7.1 version of the pipeline and the PIs have been notified.

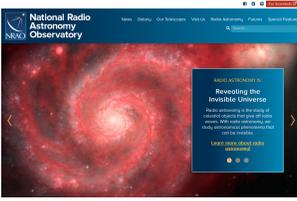
We encourage CASA users to subscribe to the following mailman lists:

- [Casa-announce \(http://listmgr.nrao.edu/mailman/listinfo/casa-announce\)](http://listmgr.nrao.edu/mailman/listinfo/casa-announce) for announcement of new releases, workshops, etc.
- [Casa-users \(http://listmgr.nrao.edu/mailman/listinfo/casa-users\)](http://listmgr.nrao.edu/mailman/listinfo/casa-users) for critical bugs and code updates.
- [Casa-news \(http://listmgr.nrao.edu/mailman/listinfo/casa-news\)](http://listmgr.nrao.edu/mailman/listinfo/casa-news) for the semi-annual CASA Newsletter.

If you have any questions, please consult the [NRAO helpdesk \(http://help.nrao.edu/\)](http://help.nrao.edu/), the [ALMA Helpdesk \(http://help.almascience.org/\)](http://help.almascience.org/) or the [CASA discussion forum \(https://science.nrao.edu/forums\)](https://science.nrao.edu/forums).

New NRAO Public Website Debuts

Nan Janney



The home page of the new NRAO public website.

Two weeks ago, the Education and Public Outreach (EPO) team launched a redesign of [NRAO's public-facing website \(http://public.nrao.edu\)](http://public.nrao.edu) adding new features that will improve the site's functionality and user experience. For the past year, the team has been working diligently to produce a responsive interface that is compatible with a variety of devices. A new and improved search function allows the user to quickly find images on the gallery landing page as well as search for specific news articles by date. Also, content creators can now easily acquire astronomical metadata from composite images, because we found a way to streamline the technical, tagging process from multiple image sources.

Under our new special features tab, check out our "Mission Control" page, which displays a map of the entire sky surrounding Earth with color-coded targets illustrating where the telescopes are pointing in real time. To explore what projects are in the planning phase, take a look at our "Futures" page, which highlights one of the most ambitious NRAO endeavours to date: the Next Generation Very Large Array (ngVLA). Stay tuned for a probable name change.

Note: The old NRAO public website address redirects to the new public-facing page. To access the science section, click on the **red** "scientist" tab in the top, right-hand corner. And if you happen to find any glitches or information inconsistencies, please forward your comments to the EPO Web Developer, Jessica Geist ([jgeist@nrao.edu \(mailto:jgeist@nrao.edu\)](mailto:jgeist@nrao.edu)).

Recent Media Releases



[ALMA Investigates 'DeeDee,' a Distant, Dim Member of Our Solar System](https://public.nrao.edu/news/2017-alma-investigates-deedee/)

[\(https://public.nrao.edu/news/2017-alma-investigates-deedee/\)](https://public.nrao.edu/news/2017-alma-investigates-deedee/)

12 Apr 2017



[Image Release: ALMA Captures Explosive Star Birth \(https://public.nrao.edu/news/image-release-alma-captures-explosive-star-birth/\)](https://public.nrao.edu/news/image-release-alma-captures-explosive-star-birth/)

7 Apr 2017



[ALMA and the Event Horizon Telescope Tip Sheet \(https://public.nrao.edu/news/alma-and-the-event-horizon-telescope-tip-sheet/\)](https://public.nrao.edu/news/alma-and-the-event-horizon-telescope-tip-sheet/)

30 Mar 2017



[Milky Way-like Galaxies in Early Universe Embedded in 'Super Halos'](https://public.nrao.edu/news/2017-alma-z4-galaxies/)

[\(https://public.nrao.edu/news/2017-alma-z4-galaxies/\)](https://public.nrao.edu/news/2017-alma-z4-galaxies/)

8 Mar 2017

Career Opportunities

[Director for the Central Development Laboratory:](http://jobs.jobvite.com/nrao/job/owuK4fwy) (<http://jobs.jobvite.com/nrao/job/owuK4fwy>) The National Radio Astronomy Observatory is actively recruiting for a Director for the Central Development Laboratory (CDL). The CDL Director is expected to ensure that the Laboratory is engaged in Research & Development essential for the future needs of radio astronomy, working where appropriate in partnership with the astronomy community. The position will be located in Charlottesville, Virginia.

CASA Lead: (<http://jobs.jobvite.com/nrao/job/oWuT4fw7>) The National Radio Astronomy Observatory is actively seeking a candidate with a combination of software, management, and ideally, astronomy experience to join the Data Management and Software Department as the CASA Group Lead. The CASA Group is responsible for the Common Astronomy Software Applications (CASA) package and the CASA pipelines, which provide heuristic-based automated processing for calibration and imaging. The position will be located either in Charlottesville, Virginia or in Socorro, New Mexico.

From the Archives

Ellen Bouton



About this month's photo: Then and now: The Very Large Array (VLA) track requires constant maintenance, with ~74 miles of steel rail and 200,000 ties that must reliably support immense weight as the 230-ton antennas and the 90-ton transporter travel over the track when the array is re-configured. The 1976 photo (top) shows that the original track was laid with a minimal amount of equipment and a lot of manual labor. Over the years of maintenance, a crane or boom truck was used to remove a new tie from a stack of ties, and a forklift pushed ties out from or into place under the rails.



As part of ongoing efforts to improve VLA infrastructure, new equipment (bottom photo) has been purchased. The shiny new machine is substantially larger and more capable than the original equipment used to lay ties in 1976, adding a level of automation to the removal and insertion of cross-ties not previously available at

NRAO. Now one machine removes an old tie from under the rail, removes a new tie from the stack and properly positions it, and then inserts it under the rail, speeding the process considerably. The goal is to replace 5,000 VLA ties per year.

Thanks to Mark McKinnon, Chris Langley, and Dave Finley for caption information and for the photo of the new equipment.

From the Archives is an ongoing series illustrating NRAO and U.S. radio astronomy history via images selected from our collections of individuals' and institutional papers. If readers have images they believe would be of interest to the Archives, please contact [Ellen Bouton \(#\)](#).

Contact the Editor ([mailto:mtadams@nrao.edu?subject=NRAO eNews Editor](mailto:mtadams@nrao.edu?subject=NRAO%20eNews%20Editor))



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