NRAO eNews

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Upcoming Events

Users Committee Meeting (https://info.nrao.edu/do/committees/external)
May 14 - 16, 2018 | Socorro, NM

Synthesis Imaging Workshop (http://go.nrao.edu/siw2018)
May 16 - 23, 2018 | Socorro, NM

NRAO/LBO Community Day at U. Toronto (https://science.nrao.edu/science/meetings/2018/toronto18)
Jun 4 - 5, 2018 | Toronto, Canada

NESS Meeting-in-a-Meeting (https://science.nrao.edu/science/meetings/2018/ness-meeting-in-a-meeting)
Jun 5 - 6, 2018 | Denver, CO

Astrophysical Frontiers in the Next Decade and Beyond (http://go.nrao.edu/ngVLA18)
Jun 26 - 29, 2018 | Portland, OR

Tracing the Flow: Galactic Environments and the Formation of Massive Stars (http://almaost.jb.man.ac.uk/meetings/TtF/index.html)
Jul 2 - 6, 2018 | Lake Windermere, UK

IAU Division B: New Results in Radio Astronomy (http://go.nrao.edu/IAU-DivB/new-results)
Aug 24, 2018 | Vienna, Austria

IAU Division B: The History of Large Single Dish Projects and Lessons Learned (http://go.nrao.edu/IAU-DivB/historic-radio)
Aug 27, 2018 | Vienna, Austria

X-Proposal Expression of Interest Pre-Announcement

Lewis Ball

The National Radio Astronomy Observatory (NRAO), Long Baseline Observatory, and Green Bank Observatory plan to invite submissions of brief Expressions of Interest (EoI) in PI-led “eXtra Large Proposals” (X-Proposals) for the Very Large Array (VLA), Very Long Baseline Array, and Green Bank Telescope requiring 1000 hours or more of telescope time, and running over multiple semesters (and possibly multiple VLA configurations).

X-Proposals are expected to be resourced by the proposing team. Projects should have extraordinary scientific merit and community legacy value, and will be expected to specify why the science goals cannot be achieved through the standard Science Review Panel / Telescope Allocation Committee process.

Responses will be used to gauge the level of community interest in such proposals, and their scientific potential. The observatories may not proceed to a Call for X-Proposals if, for example, there is judged to be insufficient community interest, scientific merit, or differentiation from Large Proposals.

The call for submission of EoIs is expected to be issued on 29 May 2018 with a deadline of 11 July 2018. See the 2016 (https://info.nrao.edu/do/committees/uc_reports/2016%20Users%20Committee%20Report.pdf) and 2017 (https://info.nrao.edu/do/committees/uc_reports/2017%20Users%20Committee%20Report.pdf) NRAO Users Committee reports for further background.

See All the VLA, GBT & VLBA Proposals

Lewis Ball

Members of NRAO's Science Review Panels (SRP) play a very important role in identifying the Science Programs for these world-leading radio telescopes.

Being a reviewer could help you to:

- Learn what science other astronomers are interested in;
- Get a sense of what makes the most compelling proposals;
- Build your group of professional contacts and potential collaborators;
- Understand the review process for a major observatory.

If you are interested, volunteer to be an SRP member by filling out a simple form (https://www.aoc.nrao.edu/~mclausse/newex.html) .

ngVLA Program News

Eric Murphy

(http://ngvla.nrao.edu/)

ngVLA Science Book

The ngVLA science case volume is in preparation and is a major deliverable to the Astronomy 2020 Decadal Survey. This science volume is being crafted by the ngVLA Science Advisory Council, in consultation with the

astronomical community at large, and the ngVLA Project Scientist. The volume will provide an extremely useful summary of the ngVLA Key Science Mission for Astro 2020 panel members, as well as demonstrate the Project's firm handle on the associated technology requirements and cost, and will be published in the Astronomical Society of the Pacific monograph series. This will ensure that the book and individual chapters will be listed in the SAO/NASA Astrophysics Data System for maximum visibility to the Astro 2020 panel members.

We are in the process of reviewing the initial (more than 50) chapters submitted and plan to have a first draft by the June *Astrophysical Frontiers* meeting in Portland, OR. For those still interested in contributing to the science book, we will continue to accept contributions through the summer as we plan to have a final book published by December. Instructions for submitting chapters can be found online (http://ngvla.nrao.edu/page/scibook) .

Astrophysical Frontiers in the Next Decade and Beyond
26 – 29 June 2018 | Portland, Oregon
Registration (http://go.nrao.edu/frontiers/register) and poster abstract submission (http://go.nrao.edu/frontiers/abstracts) are still open through 29 May for the Astrophysical Frontiers in the Next Decade and Beyond (http://go.nrao.edu/ngvla18) : Planets, Galaxies, Black Holes, and the Transient Universe. This ambitious conference will bring together a large cross-section of the multi-wavelength astronomical community to discuss how best to tackle the most pressing astrophysical questions in the near-future. This conference will consist of plenary sessions of invited speakers and three parallel sessions that will include invited and contributed presentations covering Origins of Exoplanets and Protoplanetary Disks; Mechanisms of Galaxy Evolution; and Black Holes and Transient Phenomena. While this meeting is sponsored by NRAO, the science areas explored are truly multi-wavelength/messenger, and the science program has strong representation from communities across the electromagnetic spectrum. We hope to see you in Portland in June!

Community-Driven Activities
Given the success of our first round of ngVLA Community Studies, a second round was initiated to tackle some of the most pressing questions unveiled by the initial studies. The primary objective for the second round of community studies is to further develop the Key Science Goals outlined in Memo #19 (http://library.nrao.edu/public/memos/ngvla/NGVLA_19.pdf) . Studies and simulations were asked to focus on addressing these key science goals, and better quantifying the expected performance of the array while providing additional supporting technical requirements. The second call yielded 12 approved scientific studies. All accepted Community Studies efforts from this second round are expected to write up their findings as part of a peer-refereed journal article or ngVLA memo, and present their progress/final results at the *Astrophysical Frontiers in the next Decade and Beyond* (http://go.nrao.edu/ngVLA18) conference, 26-29 June 2018 in Portland, Oregon.

XXXth IAU General Assembly: Division B Events

Tony Beasley

Dear Members and Associates of IAU Division B,
We would like to invite you and your collegues to key events at the XXXth General Assembly of the International Astronomical Union (IAU) (http://astronomy2018.univie.ac.at/) in Vienna that are being organized under the auspices of IAU Division B: Facilities, Technologies, and Data Science. IAU Commission B4 (Radio Astronomy)

(https://www.iau.org/science/scientific_bodies/commissions/B4/) has organized a wide-ranging scientific session on "*New Results in Radio Astronomy*" will take place on Friday afternoon, 24 August 2018.

New Results in Radio Astronomy
Fri. 24 August 2018

Chair: Tony Beasley		
13.30 – 13.35	Welcome	G. Giovannini
13.35 – 14.00	Star and Planet Formation	Laura Perez
14.00 – 14.25	Fast Radio Bursts and Transients	Shami Chatterjee
14.25 – 14.50	Epoch of Reionization	Leon Koopmans
14.50 – 15.05	A Commensal Radio Astronomy FAST Survey (CRAFTS) for Galaxies, ISM, Pulsars, and FRBs	Di Li
15.05 – 15.30	*Coffee Break*	
Chair: G. Giovannini		
15.30 – 15.55	Cosmic Microwave Background	Bucher Martin
15.55 – 16.20	Radio Surveys – Continuum	Isabella Prandoni
16.20 – 16.45	Radio Surveys – HI	Martha Haynes
16.45 – 17.10	ngVLA Project – Status and News	Eric Murphy
17.10 – 17.35	SKA Project – Status and News	Phil Diamond
17.35 – 18.00	Commission B4 – Present and Future	T. Beasley, G. Giovannini

In addition, the URSI / IAU Commission B4 Working Group on Historic Radio Astronomy (https://www.iau.org/science/scientific_bodies/working_groups/266/), has crafted a compelling, half-day program on "*The History of Large Single Dish Projects and Lessons Learned*" that will take place on Monday afternoon, 27 August 2018.

The History of Large Single Dish Projects and Lessons Learned
Mon. 27 August 2018

Chair: Richard Wielebinski		
13.30-14.00	Review of The Evolution of Large Single Dishes	Jaap Baars
14.00-14.20	The Jodrell Bank Telescopes	Simon Garrington
14.20-14.40	The Parkes Telescope	Douglas Bock
14.40-15.00	The Effelsberg Telescope	Axel Kraus

15.00-15.30	*Coffee Break*	
	Chair: Richard Schilizzi	
15.30-16.00	The Largest Feasible Steerable Telescope	Ken Kellermann
16.00-16.20	The Pico Veleta Telescope	Carsten Kramer
16.20-16.40	The Large Millimeter Telescope in Mexico	David Hughes
16.40-17.00	The Five-Hundred-Meter Aperture Spherical Telescope (FAST)	Bo Peng

Registration for the IAU General Assembly and all administrative matters are organized through the IAU XXXth General Assembly website (http://astronomy2018.univie.ac.at) .

I look forward to seeing everyone in Vienna.

ALMA Program News

Al Wootten

Credit: Sergio Otarola

ALMA in the afternoon.

Cycle 6 Call for Proposals

The Cycle 6 Call for Proposals received 1800+ proposals from astronomers around the world. The submissions are being examined for duplication, after which a report similar to that posted for Cycle 5 will be published to the ALMA Science Portal (https://almascience.nrao.edu/) .

Sean Dougherty, ALMA Director, noted: “It is a pleasure to inform you that the Cycle 6 proposal submission is now successfully closed and another record number of proposals for an astronomical facility has been submitted, surpassing our previous proposals counts by a wide margin. After removing duplicate submissions, there will likely remain more than 1800 independent proposals, surpassing Cycle 5's number of 1661.

“The demand for ALMA time remains incredibly strong and continues to grow with time, as we add new capabilities, continue taking data consistently and completely, and increasingly deliver data products in a timely and high-quality manner. This success is due to efforts of the full ALMA team, in Chile, NA, ESO and EA, that works tirelessly to make it happen. Thanks to all of you for your repeated and consistent efforts to make this Observatory the success it continues to be.”

Cycle 5 Science Operations

Data continues to be taken, processed and distributed for Cycle 5 proposals, with the array transitioning from its C43-3 configuration to the more compact C43-2 configuration (1”.4 beam at 100 GHz, 15m to ~0.314 km baselines) in early May. The array will then move to its most compact configuration for June before embarking on an expanding array cycle in July. But not all is low resolution—ALMA joins other telescopes to create an array the size of planet Earth as the Global mm-VLBI Array at 3mm wavelength, and the Event Horizon Telescope at 1mm wavelength seek ultra high-resolution, few micro-arcsecond data. This year the Greenland Telescope, the rebuilt and re-sited ALMA–North American prototype telescope, joins the club from its station near Thule, Greenland. Data from last year’s Very Long Baseline Interferometry campaigns are in calibration stages and results may be expected soon.

Upon the recommendation of the Director, the ALMA Board approved the Correlator Upgrade Phase 1 Project, which had been endorsed by the ALMA Science Advisory Committee. Planning for the upgrade, which in its initial phases will provide up to 8x as many channels for sensitive high resolution spectral line work, increased accuracy for better sensitivity, lower power consumption and, in Phase 2 after other system enhancements, doubled bandwidth. These and other upgrades will enable ALMA to sustain the pace of its transformative science through the decade of the 2020s.

Scientific Publications & Archive

The library count of published, refereed ALMA scientific papers climbed past 1,000 in late April, representing a publication rate higher than that of the Hubble Space Telescope at a comparable point in its science operations mission. Additionally, the number of post-proprietary projects available in the ALMA Archive surged past 1,500 and is a scientific "treasure chest" open to investigators around the world. ALMA saw record proposal submissions in response to the Cycle 6 Call for Proposals, and its many users are also achieving record scientific output.

Conference News

The conference *SPF2: Star and Planet Formation in the Southwest* was held 12-16 March 2018 at the Biosphere 2 Center in Oracle, Arizona. The 149 attendees came from around the Southwest and from a dozen foreign countries to discuss circumstellar disks and planet formation, with special attention to ALMA, JWST, GMT, and Numerical Methods. NRAO was proud to be a sponsor of the event along with Steward Observatory, CSES / LANL, Lowell Observatory, Rice University, and ASU. Abstracts and talks are available online (https://www.noao.edu/meetings/spf2/) .

Recent Media Releases

New Technology Offers to Broaden Vision for Radio Astronomy (https://public.nrao.edu/news/2018-cdl-paf/)
30 April 2018

Astronomers Witness Galaxy Megamerger (https://public.nrao.edu/news/2018-alma-megamerger/)
25 April 2018

Breakthrough in Detection Technology at Axion Dark Matter Experiment (https://public.nrao.edu/news/2018-cdl-admx-tech/)
9 April 2018

From the Archives

Ellen Bouton

About this month's photo: Chili cookoffs have been a long-time staple of NRAO social events at all sites, with a wide variety of recipes and selections at all levels of the Scoville Scale. In this December 2001 photo, Charlottesville cooks are smiling happily after sampling all the entries. [Left to right] Ryan Lynch, Anthony Turner, Christine Jewell, Michael Lacasse, Amy Shepherd, Mike Rodriguez, Roy Norville, Derek Hart, Sheila Marks, Denise Merricks, Andrea Vaccari. The lovely aprons were gifts to the contest participants. Denise Merricks won the competition with her "Sweet and Spicy Chili."

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 (#).
