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ALMA Cycle 13 Information

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on behalf of Taiwan ARC node

ALMA Cycle 13 Users Workshop
March 27, 2026

Cycle 13 Timeline

Date	Milestone
Thursday, 19 March 2026 (15:00 UTC)	Release of Cycle 13 Call for Proposals, Observing Tool, and supporting documents, and opening of the Archive for proposal submission
Thursday, 23 April 2026 (15:00 UTC)	Proposal submission deadline for Cycle 13 Call for Proposals
03 June 2026 (15:00 UTC)	Deadline to submit reviews for the distributed peer review system
August 2026	Announcement of the outcome of the proposal review process
01 October 2026	Start of ALMA Cycle 13 Science Observations (anticipated)
30 September 2027	End of ALMA Cycle 13

- Any changes, clarifications, or bugs that are discovered after the publication of this Proposer's Guide are documented in the following **Knowledgebase Article**:
"What Cycle 13 proposal issues and clarifications should I be aware of before submitting my proposal?"
- <https://help.almascience.org/kb/articles/what-cycle-13-proposal-issues-and-clarifications-should-i-be-aware-of-before-submitting-my-proposal>
- Proposers should check this article regularly, especially just before submitting their proposals.

ALMA Cycle 13 Call for Proposals

ALMA encourages proposals in configurations, Local Sidereal Time (LST) ranges, and receiver bands that have been historically less heavily requested, including

- ACA, especially in the LST range of **20h to 1h**
 - ACA stand-alone proposals had, on average, a very high acceptance rate of 82% in Cycle 11, and 76% in Cycle 12
- High frequency (**Bands 8, 9, and 10**) in any configuration
 - Please see Section A.5.3 in [ALMA Cycle 13 Proposer's Guide](#) for specific challenges for observing spectral lines in Bands 9 and 10 with narrow spectral windows (< 128 MHz).
- Low frequency (Bands 1, 3, and 4) at long baselines (C-7 through C-10), particularly for proposals focused on sources near RA of 22h.
 - Proposals that request only the low frequency bands (Bands 1 through 4) are likely to have above-average acceptance rates.

What's New in Cycle 13

Band 2 on the 12-m Array

- Band 2, covering 67–116 GHz, is offered for the 12-m Array, including full polarization with a single pointing

Web-based ALMA Observing Tool

- Starting in Cycle 13, the desktop-based OT has been replaced by a web-based OT
- <https://cycle-13.sps.alma.cl>

Angular Resolution and Maximum Recoverable Scale Tables

- An updated Table A-1 in [ALMA Cycle 13 Proposer's Guide](#) shows the ranges in AR that are achievable within a given configuration as a function of observing band.

ESO Guaranteed Time Observations

- In Cycle 13, up to 24 hours of the European share of ALMA observing time will be allocated as Guaranteed Time Observations (GTOs).
- These GTOs will be awarded in exchange for contributions to the ALMA Development Program.

What's New in Cycle 13

Changes to Operational Policies and Procedures

Sun-target separation limit exception

- Observations of non-Solar targets are not allowed when the target is within 15 degrees of the Sun, to prevent degradation of the calibration on some or all antennas.
- To request an exception to this policy, PIs must submit a Major Change Request.
- Approved exceptions will be carried out on a best efforts basis.
- See Appendix D of the [ALMA Users' Policies](#) for details and other important considerations.

Coordinated observations between ALMA and other observatories

- All proposals whose science case requires coordinated observations between ALMA and other observatories must explicitly indicate this in the scientific justification.
- This includes, but is not limited to: Joint, Target of Opportunity (ToO), and Solar proposals.
- For approved proposals, the PI is responsible for coordinating with the other observatories and should declare the need for coordinated observations in their Phase 2 project Helpdesk ticket.
- See Section A.10 in [ALMA Cycle 13 Proposer's Guide](#)

What's New in Cycle 13

Changes to Operational Policies and Procedures (cont'd)

Time-constrained observations

- PIs should define in the OT, at the time of proposal submission, all time windows that would satisfy the scientific needs of the project.
- If time windows are tight and precision of less than 1 hour is required, PIs of accepted programs are advised to work with their assigned CS to obtain execution time estimates from more detailed scheduling block simulations.
- See Section A.10 in [*ALMA Cycle 13 Proposer's Guide*](#)
- Additional criteria regarding change requests for time constrained observations have been added to the Definition of a Major Change Request in Appendix B of the [*ALMA Users' Policies*](#).

Observing capabilities are summarized in Appendix A of in [*ALMA Cycle 13 Proposer's Guide*](#) (<https://almascience.nao.ac.jp/proposing/proposers-guide>)

Web-based OT

The autosave function

- Edits in the Project Name, Abstract, and Duplicate Observation fields are saved when the user stops typing for 500 ms.
- In all other fields, the input is saved once the user leaves the field.

Due to the autosaving function, changes to the proposal overwrite the previous version automatically.

There is no back button or versioning.

Users are recommended to work on copies of their proposal (via "Open project as new proposal") if they want to try out different versions.

FAQ and Known Issues can be found from

<https://almascience.nao.ac.jp/proposing/observing-tool/faq-and-known-issues>

Sheng-Jun is going to talk the details on the capabilities of the web-based OT

Considerations for Band 2 and the overlap with Band 3

The Band 2 frequency range fully encompasses that of Band 3, and sensitivity within the Band 3 range (84–116 GHz) is similar for both receiver bands.

Band 2 generally offers greater tuning flexibility due to the wider available IF range, although some particular combinations of spectral window frequencies can only be accessed by Band 3 (e.g. 101, 103, 113, 115 GHz)

Band	Frequency range (GHz)	Wavelength range (mm)	Intermediate Frequency (IF) range (GHz)	Type
1	35 – 50	8.5 – 6	4 – 12	SSB
2	67 – 116	4.5 – 2.6	4 – 12	2SB
3	84 – 116	3.6 – 2.6	4 – 8	2SB
4	125 – 163	2.4 – 1.8	4 – 8	2SB
5	158 – 211	1.9 – 1.4	4 – 8	2SB
6	211 – 275	1.4 – 1.1	4.5 – 10	2SB

Considerations for Band 2 and the overlap with Band 3

For Cycle 13, the OT applies the following logic when deciding between Band 2 and 3

- If the requested frequency setup can be accommodated by Band 3, Band 3 is used
- Band 2 is used only when the requested frequency setup cannot be accommodated by Band 3
- If a science goal would require both Band 2 and 7-m or TP arrays, then the OT will issue a validation error
- For spectral scans, Band 2 will be used if the starting frequency is below 84 GHz or if spectral windows wider than 1 GHz are used.
- Band 2 has only been commissioned for on-axis polarization observations, so only on-axis polarization is offered for Cycle 13. (i.e., **no band 2 polarization mosaic**)
- VLBI/Pulsar (phased array) and Solar capabilities are not yet available with Band 2.
- See A.5.2 in [*ALMA Cycle 13 Proposer's Guide*](#)

Cycle 13 Capabilities

- **Time for Science:** 12m array **4300 hrs** (same as CY12); ACA **4300 hrs** (each on the 7-m Array and the Total Power Array; same as CY12)
- **Number of Antennas:** at least **43** in the main array; at least **10** in the 7m array, and **3** in the TP (same as CY12)
- **Receiver bands:** all receiver bands 1 through 10 are now available
- **12m Array Configurations:** Cycle 13 includes configurations 1 through 10, with max baselines ranging from 0.16 km to 16.2 km
 - The array configuration files needed for CASA simulations are available from <https://almascience.nao.ac.jp/tools/casa-simulator>

Proposal Types

- **Regular Proposals**
 - 12m Array time (< 50 hrs) or 7-m array time (<150 hrs) in stand-alone mode
- **Large Program**
 - > 50 hrs on the 12-m Array (with or without accompanying ACA time) or > 150 hrs on the 7-m array time in stand-alone mode.
 - Cannot include time-critical or ToO observations, full polarization measurements, solar observations, VLBI, Phased Array mode, Astrometric observations or observations requiring bandwidth switching calibration
- **Target of Opportunity (ToO) Proposals**
- **mm-VLBI and Phased Array Proposals**
 - Up to 5% of the available time
 - A maximum of 50 hours will be available for Phased Array mode observations. These observations will take place during the VLBI time blocks anticipated to be in March-May 2027.
- **Director Discretionary Time (DDT) Proposals:**
 - DDT proposals can be submitted at any time during Cycle 13
 - Up to 5% of the available time

Proposal Types (cont.)

- **ESO Guaranteed Time Observations**
- **Joint Proposals:**
 - Proposals can be submitted jointly with ALMA and the partner facilities: **James Webb Space Telescope (JWST)**, the **Very Large Array (VLA)**, and the **Very Large Telescope (VLT)**.
 - Proposers can submit a Joint Proposal to ALMA that also requests time on any or all of the partner facilities or submit a proposal to one of JWST, VLA, or VLT that requests ALMA time.
 - **PIs must submit their Joint Proposals to the observatory that requires the most observing time.** In the case of ALMA, the relevant time request will be the amount of time requested for the 12-m Array, or the 7-m Array in case of ACA stand-alone proposals.
 - The allowed time allocations are summarized in the following table

Partner	Maximum time ALMA can allocate on partner observatory	Maximum time partner observatory can allocate on each ALMA array
JWST	115 hours	115 hours
VLA	5% of available time	50 hours
VLT	50 hours	50 hours

Proposal Types (cont.)

Most Cycle 12 proposals requested between 2 and 20 hours of 12-m Array time.

The success rate of proposals was independent of the requested 12-m Array time

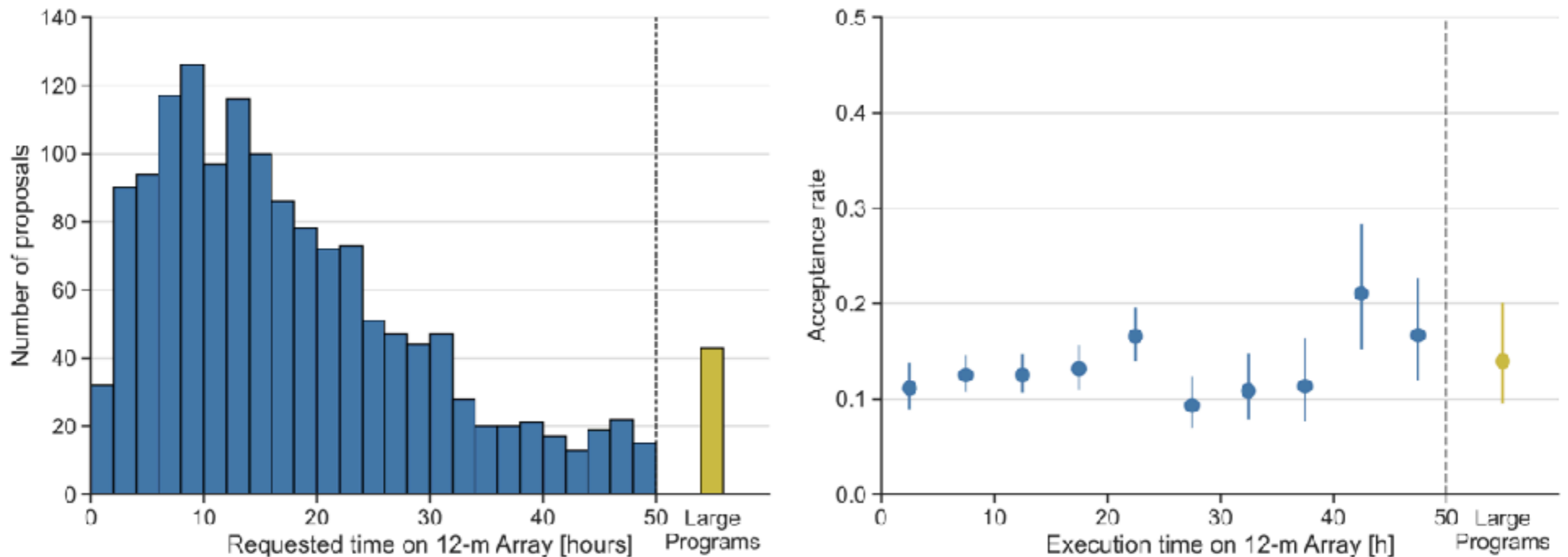


Figure 1: (Left) Number of proposals submitted as a function of the 12-m Array execution time in Cycle 12. (Right) The fraction of proposals (with 1σ confidence intervals) that were assigned priority Grade A or B as a function of the estimated 12-m Array time.

Cycle 13 Configuration Schedule

Start date	Configuration	Longest baseline	LST for best observing conditions
2026 October 1	C-3	0.50 km	~ 22—10 h
2026 October 20	C-2	0.31 km	~ 23—11 h
2026 November 10	C-1	0.16 km	~ 1—13 h
2026 November 30	C-2	0.31 km	~ 2—14 h
2026 December 20	C-3	0.50 km	~ 4—15 h
2027 January 10	C-4	0.78 km	~ 5—17 h
2027 February 1	<i>No observations due to maintenance</i>		
2027 March 1	C-4	0.78 km	~ 8—21 h
2027 March 20	C-5	1.4 km	~ 9—23 h
2027 April 20	C-6	2.5 km	~ 11—1 h
2027 May 20	C-7	3.6 km	~ 13—3 h
2027 June 20	C-8	8.5 km	~ 14—5 h
2027 July 11	C-9	13.9 km	~ 16—6 h
2027 July 30	C-10	16.2 km	~ 17—7 h
2027 August 20	C-9	13.9 km	~ 19—8 h
2027 September 10	C-8	8.5 km	~ 20—9 h

The extended, long-baseline, configurations for Cycle 13 will occur in the end of Cycle 13

When planning HF projects, please refer to the LST for best observing conditions for source selection

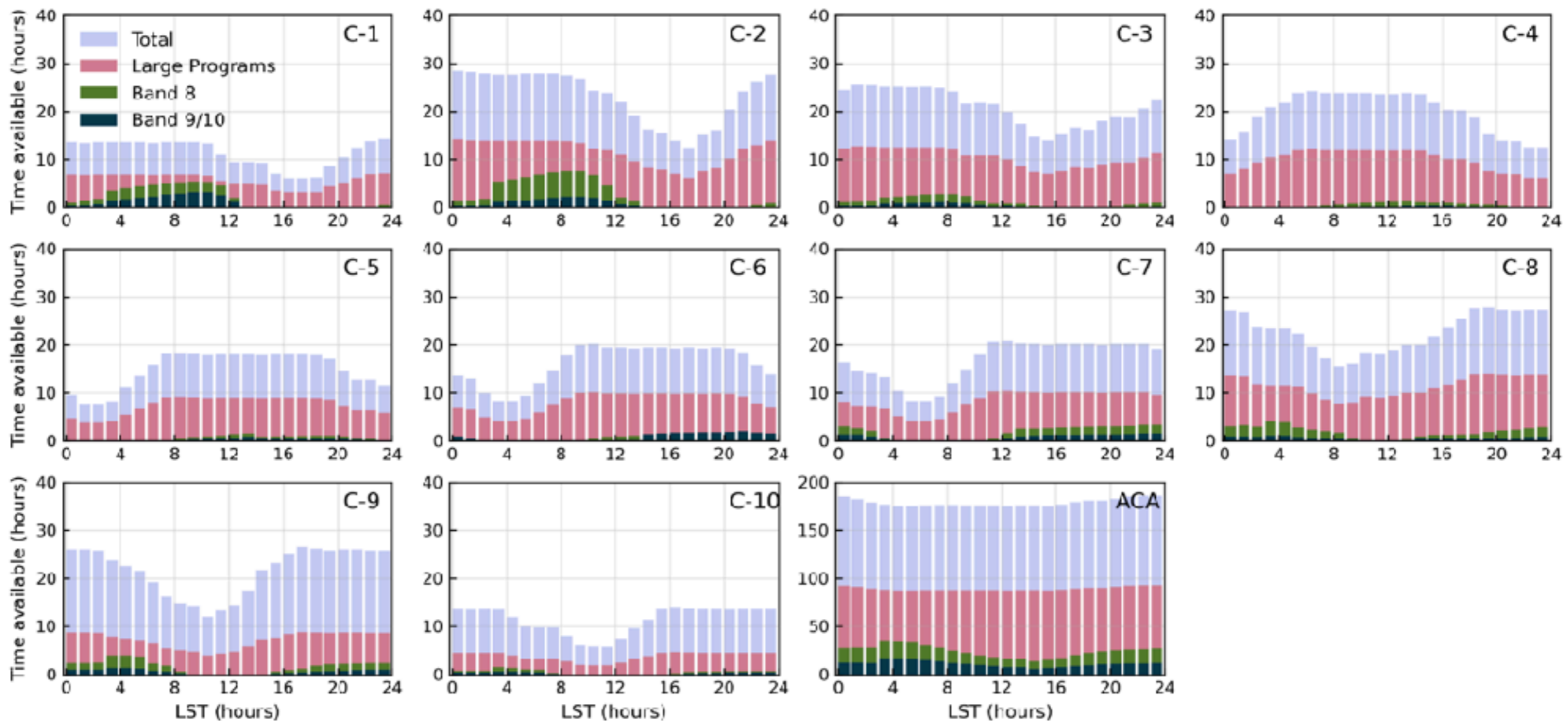
This schedule may be modified depending on the results of the proposal review process and the proposal pressure in the different configurations.

Expected Cycle 14 Capabilities

- The ALMA Observatory is currently planning for the implementation and commissioning of the Wideband Sensitivity Upgrade. The impact on science operations, including PI observations, for future observing cycles is currently being evaluated.
- However, for Cycle 14, the anticipated top-level capabilities — including available observing hours and configuration schedule — remain unchanged.
 - The configuration schedule for Cycle 14 is therefore expected to be similar to that of Cycle 12. The precise information can be found at <https://almascience.org/observing/observing-configuration-schedule/long-term-configuration-schedule>
 - For the capabilities of Cycles 15 and beyond, updates will be provided through the Science Portal once available.

The effective observing time in Cycle 13

- Estimated observing time available per configuration for executing PI projects, based on precipitable water vapor (PWV) only.



What ALMA can do in Cycle 13

Doc 13.1, ver. 1 | 25 Feb. 2026

Observing with ALMA – A Primer (Cycle 13)



alma.org

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ALMA Observatory is

The **Cycle13 Primer** provides basic introductory information on ALMA and its capabilities, plus basic terminology and concepts related to radio interferometry. The goal is that, with all the basic information in one place, and a few examples of how to plan a science observation, this document can help all astronomers become familiar with ALMA's capabilities and to start planning their own ALMA observations.

A Survey of Submillimeter Galaxies

Science Aim: To measure accurately the positions of SMCs

A large fraction of the star formation activity at the epoch of galaxy evolution ($1 < z < 3$) is traced by submillimeter galaxies (SMGs). SMCs are typically detected with single-dish telescopes at coarse resolution; identification of a counterpart has required deep radio (centimeter) observations followed by deep optical or near-infrared spectroscopy. With ALMA, we can precisely locate SMCs very rapidly. In this example we lay out a strategy to pinpoint a large number of sources with Band 7 continuum.

Receiver(s): Band 7 (Continuum, 345 GHz)

Angular Resolution and LAS: $\sim 0.2''$ at Band 7. A good rule of thumb is that $1''$ corresponds to ~ 8 kpc for $z \sim 1$, so spatially resolved observations can be made with ALMA. The ACA and more compact 12-m Array configurations are not needed for these observations since the sources are small. An LAS of $1''$ is selected.

Spectral Resolution: These are purely continuum detections, so only the 1DM mode (15.6 MHz channels) is required.

Continuum (Band 7) Sensitivity: In *This cycle*, up to 150 sources (see [Proposers Guide](#) for restrictions) may be observed in each science goal. As an example, there are ~ 150 sources in the COSMOS-AzTEC catalogue (Arzoumanian et al. 2011) with (deboosted) flux densities > 3.3 mJy. Furthermore the sources are all within a few degrees of each other, making the observations highly efficient since the calibration can be shared among many sources. Given the exceptional atmospheric conditions at ALMA, we choose to pinpoint these sources at a higher frequency (344 GHz or 0.8 mm) where they are significantly brighter ($S \propto \nu^2$, typically $\beta \sim 2$ at $z \sim 2$). Therefore, these sources should have $S_{344\text{GHz}} > 5$ mJy. It is possible that these sources may be extended or may resolve into more than one source, so we aim to get a $S/N \sim 40$, adequate to identify the counterparts and obtain excellent relative astrometric accuracy, which is usually estimated as $\sim \theta/(S/N)$. We thus request a sensitivity of 0.125 mJy/beam.

Band 7 Observing Time: For Band 7, the ALMA sensitivity calculator, assuming 43 12-m antennas and an effective 7.5 GHz continuum bandwidth per polarization, predicts 2.7 minutes integration per source to reach a $1 \sigma = 0.125$ mJy. Each science goal of 150 sources would require about 6.75 hours of on source integration, for a total of 12.7 hours including overheads and calibration.

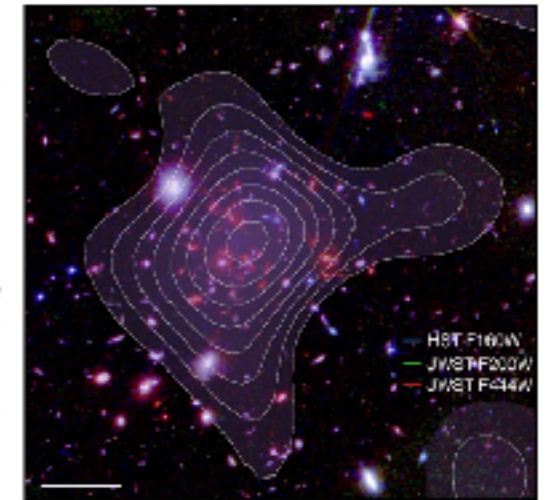


Figure 16: A young cluster at $z=4.3$ was observed at Band 3 to reveal the extremely hot intracluster gas using the Sunyaev-Zeldovich effect. Finding such intense heat so early in the history of the cluster raises questions about the cluster history. Contours show the S-Z emission over an optical/IR image of the cluster. (Credit: Zhu et al., 2020, *Nature*, DOI: 10.1038/s41586-020-09301-3)

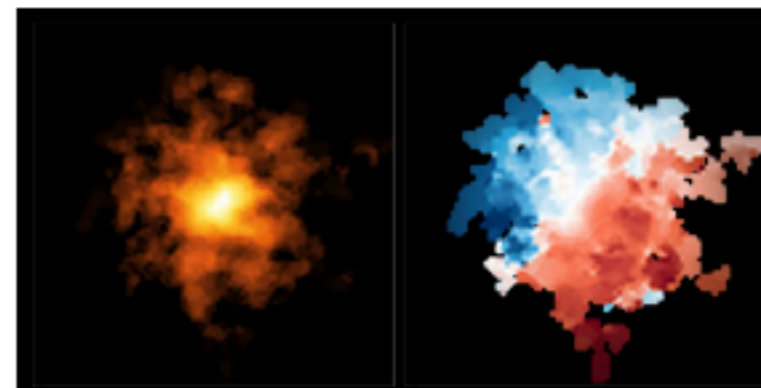


Figure 17: This image reveals the most distant Milky-Way-like galaxy yet observed. The left panel shows CO in the galaxy and exhibits hints of a central bar. The right panel shows the motion of cold gas in the galaxy. The image shows clearly that the object is rotating, making REBELS-25 the most distant rotating disc galaxy ever discovered. (Credit: ALMA (ESO/NAO/JINRAO); L. Rowland et al., 2024, *MNRAS*, 535, 2068)

Calibrated MS Delivery

Starting from mid 2020, EA ARC at NAOJ provides the service to deliver calibrated MS on demand for PIs and archive users.

- Originally this service was offered for data which require CASA 4.6.* or earlier only.
- **Now EA ARC at NAOJ offers this service to data in all the Cycles** (but Cycle0 where you can get the calibrated MS from the Archive)
 - Note that up to 5 Scheduling Blocks can be requested at one time.
 - For interferometric data only (i.e., 12-m array or 7-m array), but not TP array
 - More information can be found from https://www2.nao.ac.jp/~eaarc/DATARED/calibrated_ms_request.html
- This service is not limited to archive users, but is also available for PIs who have data within proprietary period (upon request by the PI)
- An automated service of calibrated MS delivery to the EA PIs from Taiwan and Korea is currently under development.

Calibrated MS Delivery

How to request

1. Log in to Helpdesk <https://help.almascience.org/>
2. Create a new ticket by clicking "Submit a Ticket"
3. Choose "Archive and Data Retrieval (EA)" as Department, click "Next"
4. Choose "Data request (calibrated MS, stale data, calibrator data, or suggestions)" as a Sub-category, provide the following information, then "Submit" the ticket

Subject: Request of calibrated MS

Main text:

a. Affiliation

b. Project Code and SB name of the data

[example: please split Project Code and SB name with a space.

2013.1.00010.S NGC253_a_04_TM1

2013.1.00010.S NGC253_a_07_TM1

2014.1.00020.S NGC1068_a_06_TM1

Over one third of all ALMA publications now make use of data from the ALMA Science Archive

<https://almascience.nao.ac.jp/news/over-one-third-of-all-alma-publications-now-make-use-of-data-from-the-alma-science-archive>

