

# ALMA CYCLE 11 PROPOSAL

ALMA CYCLE 11 PROPOSER'S GUIDE

([HTTPS://ALMASCIENCE.NAO.AC.JP/PROPOSING/PROPOSERS-GUIDE](https://almascience.nao.ac.jp/proposing/proposers-guide))

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- 50 x 12M
- 12 x 7M
- 4 x 12M TP

ALMA ANTENNAS ON THE CHAJNANTOR PLATEAU.

# CYCLE 11 CALL FOR PROPOSALS

- ALMA Cycle 11 proposal submission will open at **15:00 UT on Thursday, 21 March 2024**. The Cycle 11 proposal submission deadline is **15:00 UT ON THURSDAY, 25 APRIL 2024**
- The JAO anticipates allocating **4300 HOURS ON THE 12-M ARRAY** and **4300 HOURS ON THE ATACAMA COMPACT ARRAY (ACA)**. The ACA allocation includes 4300 hours each on the 7-m Array and the Total Power (TP) Array.
- VLBI and DDT projects are limited to a maximum of 5% each of the available time
- Proposal reviews will be conducted via a **DUAL-ANONYMOUS PROCESS**
- ALMA provides continuum and spectral-line capabilities for wavelengths from **0.32 MM TO 8.5 MM**, and angular resolutions from **0.0048" TO 8.5" ON THE 12-M ARRAY**
- **BANDS 1 AND 3, 4, 5, 6, 7, 8, 9, 10** are offered in configurations **C-1 THROUGH C-10**

Start date	Configuration	Longest baseline	LST for best observing conditions
<b>2024 October 1</b>	C-3	0.50 km	~ 22—10 h
<b>2024 October 20</b>	C-2	0.31 km	~ 23—11 h
<b>2024 November 10</b>	C-1	0.16 km	~ 1—13 h
<b>2024 November 30</b>	C-2	0.31 km	~ 2—14 h
<b>2024 December 20</b>	C-3	0.50 km	~ 4—15 h
<b>2025 January 10</b>	C-4	0.78 km	~ 5—17 h
<b>2025 February 1</b>	<i>No observations due to maintenance</i>		
<b>2025 March 1</b>	C-4	0.78 km	~ 8—21 h
<b>2025 March 20</b>	C-5	1.4 km	~ 9—23 h
<b>2025 April 20</b>	C-6	2.5 km	~ 11—1 h
<b>2025 May 20</b>	C-7	3.6 km	~ 13—3 h
<b>2025 June 20</b>	C-8	8.5 km	~ 14—5 h
<b>2025 July 11</b>	C-9	13.9 km	~ 16—6 h
<b>2025 July 30</b>	C-10	16.2 km	~ 17—7 h
<b>2025 August 20</b>	C-9	13.9 km	~ 19—8 h
<b>2025 September 10</b>	C-8	8.5 km	~ 20—9 h

**Table 3:** Planned 12-m Array Configuration Schedule for Cycle 11. Configuration properties are given in Section A.2.

# WHAT'S NEW IN CYCLE 11

- **FULL POLARIZATION IN BAND 1 ON THE 12-M ARRAY.** The polarization accuracy and capability will be the same as in Bands 3–7
- **BAND 1 ON THE 7-M ARRAY FOR STOKES I only** (no Stokes Q/U/V)
- **HIGH-FREQUENCY AND LONG-BASELINE OBSERVATIONS WITH BAND 9 IN C-10 CONFIGURATION, AND BAND 10 IN CONFIGURATIONS OF C-9 AND C-10**
- **4x4-BIT SPECTRAL MODE ON THE 7-M ARRAY (DUAL POLARIZATION).** The 4x4 mode is available for the 7-m Array and allows spectral setups that are fully compatible with those of the 12-m Array.
- The Management Plan is included as part of the Scientific Justification for Large Program (total 7 pages for SJ).

Note: the submission by the same science team of multiple proposals with very similar high level science goals but otherwise minor differences is discouraged.

# PROPOSAL TYPES

## 1. REGULAR PROPOSAL (“S”)

estimated execution time does not exceed 50 hours on the 12-m Array or 150 hours on the 7-m Array in stand-alone mode

## 2. TARGET OF OPPORTUNITY PROPOSAL (“T”)

Targets and/or time of observation are not known in advance.

(Note: Regular proposals wrongly submitted by the PI as ToO proposals may be rejected on technical grounds)

PIs should specify the number of triggers needed

: to use a first epoch of observations to assess target properties (e.g., suitability for monitoring), it is recommended that PIs create single-visit Science Goals (SGs) for this purpose, separate from multi-visit SGs for any subsequent monitoring.

Trigger: *the Project Trigger Submission Page available at the ALMA [Helpdesk](#)*

# PROPOSAL TYPES

## 3. LARGE PROGRAM

estimated execution time of greater than 50 hours on the 12-m Array (with or without accompanying ACA time) or 150 hours on the 7-m Array in stand-alone mode.

Large Programs **CANNOT** include **TIME-CRITICAL** or **TOO OBSERVATIONS, FULL POLARIZATION measurements, SOLAR OBSERVATIONS, VLBI, PHASED ARRAY MODE, ASTROMETRIC OBSERVATIONS** or observations requiring **BAND-TO-BAND CALIBRATION OR BANDWIDTH SWITCHING CALIBRATION**

**SCHEDULING FEASIBILITY** (in the OT): Large Programs should be designed to be completed **within one cycle** given the configuration schedule and weather constraints, and the program must satisfy the configuration/LST restrictions applicable to Large Programs (33% for a given LST range in the 12-m Array configurations C-9 and C-10 and up to 50% of the time in the remaining Cycle 11 configurations (i.e., the ACA and C-1 through C-8)).

# PROPOSAL TYPES

## 4. MM-VLBI AND PHASED ARRAY PROPOSAL

### VLBI

- 7 mm (Band 1) or 3 mm (Band 3) for Global Millimeter VLBI Array (GMVA)
- 1.3 mm (Band 6) or 0.87 mm (Band 7) for the Event Horizon Telescope (EHT) network

ALMA observation will likely be carried out in March–May 2025.

Given that the outcome of Cycle 10 VLBI proposals may not be known before the ALMA Cycle 11 proposal deadline, [PIs of such proposals may wish to resubmit their proposals in Cycle 11 in case the Cycle 10 observations are unsuccessful](#). No resubmission to the GMVA call for proposals is needed in such cases.

A maximum of 50 hours of Cycle 11 time will be available for **PHASED ARRAY MODE** observations. These observations will take place during the VLBI time blocks, anticipated to be in March–May 2025

# PROPOSAL TYPES

## 5. JOINT PROPOSALS (Joint Proposals accepted by ALMA will be assigned **Grade A**)

- 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.
- However, a Joint Proposal in which ALMA is a partner observatory [cannot request ALMA time for VLBI or Phased Array observing modes](#). Requests [for ALMA Large Programs are not allowed for Joint Proposals when ALMA is a partner observatory](#), and therefore the amount of ALMA time requested must be less than that of the ALMA Large Program threshold.
- Each observatory will follow their technical criteria for acceptance.
- Project IDs for the individual partner observatories will be generated only after acceptance of a Joint Proposal.

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

**Table 2:** Amount of time that can be allocated by ALMA on partner observatories and the amount of time that can be allocated by partner observatories on each ALMA array (i.e., 12-m, 7-m, and TP).



# PROPOSAL TYPES

## 5.1. ALMA PROPOSAL REQUESTING JWST TIME

- Standard JWST observing modes
- Regarding Joint ToO proposals, no more than one (1) disruptive JWST ToO of the joint program will be performed per JWST cycle (reaction time 14 days or less). Furthermore, Ultra-rapid JWST ToO requests (reaction time 2 days or less) will not be accepted for this program.
- JWST Technical Justification: same technical standards as for all General Observer JWST proposals.
- Proposers must also prepare an APT file specifying their requested JWST observations and an [“Extended JWST Scientific and Technical Justification for Joint Programs”](#).
  - must be submitted to STScI no later than four weeks after the ALMA proposal deadline
  - The “Extended JWST Scientific and Technical Justification for Joint Programs” should be prepared as a PDF file using the template and guidelines available in the JWST Documentation.
- The APT proposal file must have the same Title and Abstract as in the ALMA proposal, and the ALMA proposal ID must be included in the Abstract.

# PROPOSAL TYPES

## 5.2. ALMA PROPOSAL REQUESTING VLA TIME

- VLA configuration: A, D and C.
- ALMA proposals requesting VLA time must provide a Technical Justification, describing the experimental design of the program.

## 5.3. ALMA PROPOSAL REQUESTING VLT TIME

- Only Service Mode observations
- PIs must provide a Technical Justification for the requested VLT observations
- ALMA, PIs will be requested to submit the project with the [ESO proposal submission tool](#).
- Approved joint projects will be allocated time in the A-rank class

# PROPOSAL TYPES

## **6. DIRECTOR'S DISCRETIONARY TIME PROPOSAL** *(they should only be submitted once)*

- Can be submitted at any time
- DDT proposals will be considered for approval by the ALMA Director based on the advice of a [Standing Review Committee](#), with members from the JAO and the four regions, appointed by the Executive Directors and the ALMA Director

# SUMMARY OF CAPABILITIES OFFERED IN CYCLE 11

## NUMBER OF ANTENNAS:

- At least **forty-three** antennas in the 12-m Array.
- At least **ten** 7-m antennas (for short baselines) and **three** 12-m antennas (for single-dish maps)

## RECEIVER BANDS:

- Receiver Bands **1, 3, 4, 5, 6, 7, 8, 9, and 10** (7.0, 3.0, 2.0, 1.6, 1.3, 0.85, 0.65, 0.45, and 0.35 mm, respectively).

## 12-M ARRAY CONFIGURATIONS:

- Cycle 11 includes 12-m Array configurations **C-1** through **C-10**.
- Maximum baselines between 0.16 km and 16.2 km depending on array configuration. longer than 3.6 km (i.e., C-7 through C-10, as offered in Cycle 11) are considered “long-baseline configurations”.

## SPECTRAL-LINE, CONTINUUM, AND MOSAIC OBSERVATIONS:

- Spectral-line and continuum observations with the 12-m Array and the 7-m Array in Bands 1 and 3 through 10.
- Single-field interferometry (Bands 1 and 3 through 10) and **mosaics (Bands 1 and 3 through 9) with the 12-m Array and the 7-m Array.**
- **Single-dish spectral-line observations in Bands 3 through 8.**

# SUMMARY OF CAPABILITIES OFFERED IN CYCLE 11

## **POLARIZATION**

Single-pointing, on-axis, full linear and circular polarization for both continuum and full spectral resolution observations in Bands 1 and 3 through 7 on the 12-m Array

- Mosaics for continuum linear polarization observations for the 12-m Array in Bands 1 and 3 through 7.
- Single-pointing, on-axis linear polarization on the stand-alone 7-m Array in Bands 3 through 7.

## **BAND-TO-BAND CALIBRATION**

- Observations in Bands 7 through 10 for the ACA or any 12-m Array configuration may require band-to-band (B2B) calibration

Note:PIs are responsible for checking their proposed observations against the [Archive](#) and the list of Grade A projects in the observing queue [provided on the Science Portal](#) to avoid duplicate observation