

The ALMA Proposal Preparation Process



Atacama Large Millimeter/submillimeter Array
Expanded Very Large Array



Proposal Checklist

- ✓ Read the relevant documentation
- ✓ Create an ALMA account
- ✓ Download the Observing Tool (OT)
- ✓ Prepare the Science Case
- ✓ Prepare Science Goals within the OT
- ✓ Submit!

Documentation

- ALMA Primer
- Proposer's Guide (!)
- OT Quickstart Guide
- OT Users Manual
- OT Video Tutorials
- Knowledgebase / FAQs
- Technical Handbook

All this and more at: almascience.nrao.edu

almascience.nrao.edu



Atacama Large Millimeter/submillimeter Array
In search of our Cosmic Origins



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Observatory News

ALMA Cycle 6 Call for Proposals is Now OPEN!
Mar 20, 2018

Additional Information for Cycle 6 Proposals
Feb 01, 2018

New Science Verification data are now available for download
Jan 22, 2018

[More...](#)

NRAO News

Synthesis Imaging Workshop
May 16, 2018

NRAO/LBO Community Day at U. Toronto
Jun 04, 2018

NESS Meeting-in-a-Meeting
Jun 05, 2018

[More...](#)

Status

[Cycle 6 Call for Proposals](#)
[Cycle 6 Proposer's Guide](#)

Refereed publications: **982**
Last observed source: G016.97
Current configuration: C43-3

[ALMA Cycle 6 Call for Proposals](#)
Time Remaining: 11 days 10 h 31 m
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Science Highlights - Detection of a z~6 Starburst Galaxy with the ALMA Spectral Scan Mode



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Cycle 6 Timeline

20 Mar. 2018	Cycle 6 Call for Proposals
10 Apr. 2018	Today
19 Apr. 2018*	Proposal Deadline!
End of Jul. 2018	Results of proposal review process announced
Sep. 2018	Deadline for PIs to submit phase 2
Oct. 2018	Start of Cycle 6
Sept. 2019	End of Cycle 6

***Thursday April 19 at 15 UT = 8 am in Arizona (MST)**

Science Case

Free-form PDF document

- Latex template available
- 12+ font (including captions, tables and refs)
- English only
- 20 MB file size
- 4 pages (6 for Large Projects)

Must include:

- Astronomical importance and immediate observing goals
- Why ALMA?!
- Brief justification of requested sensitivity and resolution

May include:

- Figures, tables, references
- Simulations

“Regular” Proposals

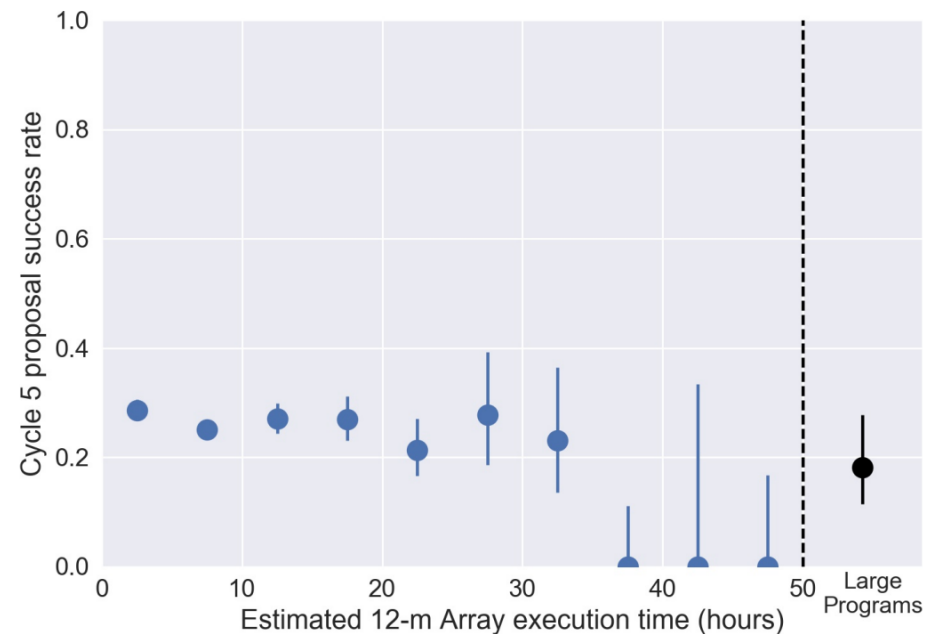
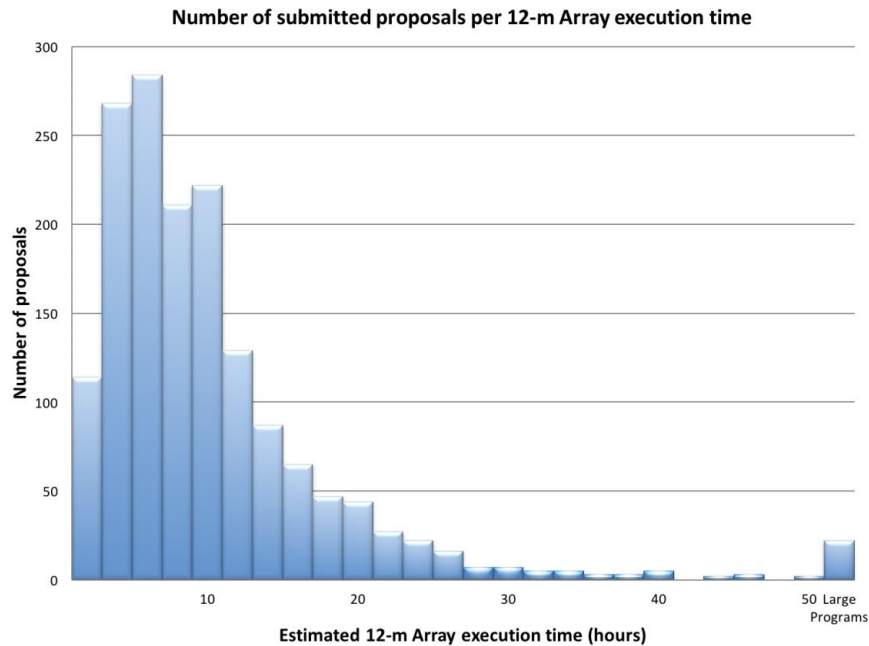
- Can use 12-m array or standalone ACA
- Can include standard or non-standard modes
- Can include time-constrained observations
- Non-Regular Proposals:
 - Large Programs
 - Target of Opportunity
 - Very Long Baseline Interferometry
 - Director Discretionary Time

Large Projects

- Up to 15% of available time
- Any 12-m project >50 hours, or standalone ACA > 150 hours
- Only standard observing modes allowed
- No time-critical or ToO observations allowed

A Note On Proposal Length

- Acceptance rate does **NOT** depend on proposal length
- Encourage... Medium length 10-25 hour proposals
ACA-only proposals (often undersubscribed)



ToO (Target of Opportunity)

- Transient events occurring at frequent and unpredictable intervals (e.g. gamma ray bursts)
- Not for proposals simply with time constraints

VLBI (Very Long Baseline Interferometry)

- Up to 5% of available time

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DDT (Director's Discretionary Time)

- Up to 5% of available time
 - Submission at any time. Is for current cycle
1. Observation of a sudden and *unexpected* astronomical event.
 2. Observations of a highly competitive scientific topic, motivated by recent developments.
 3. Follow-up observations of a program recently conducted with ALMA or any other observing facility, where quick implementation is expected to provide breakthrough results.

Check For Duplications

- A “duplication” has similar sensitivity *and* frequency coverage *and* angular resolution *and* spatial coverage as a previous observation.
- Duplications not allowed, unless scientifically justified
 - Time-variable objects
 - Mosaic where excluding duplicate pointings would be inefficient
 - Spectral scan where excluding duplicate frequencies would be inefficient
- PIs are responsible for checking their proposed observations against
 - The Archive
 - Spreadsheet list of unobserved Grade A programs
- PIs will not be penalized for proposing duplications of previous cycle observations if they had no way to know about them.

Additional things to bear in mind

- Be aware of source declination (< -65 or $> +20$) particularly for compact configurations (antenna shadowing). Max declinations limit is $+47$.
- Primary beam effects? Source should be within inner 1/3 of the FOV.
- High data rate (70 MB/s limit) – can you spectrally average?
- Anticipate high dynamic range (ratio of peak flux / rms)? Typically can achieve around 100, but more limited) in bands 9 and 10 (around 50. If this limits sensitivity, can use “self-calibration”.
- Also consider spectral dynamic range (limits detection of weak lines on top of strong continuum).
- Enough Earth rotation to sample uv plane? May need longer time than that set by sensitivity (override OT time estimate). Worse for more extended configurations. Use image simulator!

ALMA Helpdesk



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Observatory News

Additional Information for Cycle 6 Proposals
Feb 01, 2018

New Science Verification data are now available for download
Jan 22, 2018

Announcement of intent to release a new installment of Science Verification data

[More...](#)

NRAO News

Magnetic Fields or Turbulence
Feb 06, 2018

AAAS - The Chemistry & Physics of Nascent Planet Formation
Feb 17, 2018

NRAO/LBO Community Day at Caltech
Mar 27, 2018

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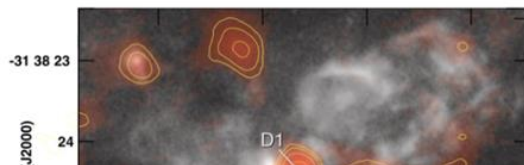
Status

[ALMA Cycle 5 Config Schedule](#)

Refereed publications: 916
Last observed source: W43-MM1
Current configuration: C43-5

[More...](#)

Science Highlights - Molecular Gas Within the Supernebula of the Dwarf Galaxy NGC 5253



One of the areas of extragalactic research which makes great use of ALMA's resolution and sensitivity is the study of the molecular gas properties of dwarf galaxies. In a [recent study](#) by Dr. Jean Turner and her collaborators, they make use of Band 7 ALMA observations to detect warm $^{12}\text{CO}(3-2)$ and $^{13}\text{CO}(3-2)$ emission (Cloud D1) from the core of a giant star-forming

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General ALMA Queries (13)

Early Science - Cycle 1 (31)

Resources & Observer Support (12)

Project Planning (14)

ALMA Observing Tool (OT) (29)

Proposal Handling (5)

Archive & Data Retrieval (4)

Offline Data Reduction and/or CASA (14)

Development Program (1)

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Knowledgebase

General ALMA Queries (13)

Can I submit a ticket in Japanese?

How close can ALMA observe to the Sun?

Early Science - Cycle 1 (31)

Can I use "breakpoints" in ALMA cycle 1?

The Cycle 1 Technical Handbook has some gaps in its discussion of ALMA receivers (SSB, 2SB, DSB). What else can you tell me about them?

Resources & Observer Support (12)

How do I arrange a visit to one of the ARCs?

Where can I find ALMA documentation and manuals?

Project Planning (14)

What should I include for the content of the Technical Justification and in what format should I submit it?

Where can I find the online ALMA observing simulator developed by the University of Manchester?

ALMA Observing Tool (OT) (29)

What do I do if I can't get the OT to work?


How do I deal with targets with unspecified coordinates in the OT?

Proposal Handling (5)


May I submit an identical proposal to more than one category, e.g. submitting a proposal on distant galaxies both to cosmology and to galaxy categories?

Which category should I submit a proposal on distant galaxies:

Live Chat Software by Kayako



ALMA Helpdesk (logged in view)



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- Early Science - Cycle 2
- Early Science - Cycle 1 (31)
- Resources & Observer Support (12)
- Project Planning (14)
- ALMA Observing Tool (OT) (29)
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For more info:

<https://almascience.nrao.edu/>

The Atacama Large Millimeter/submillimeter Array (ALMA), an international astronomy facility, is a partnership of Europe, North America and East Asia in cooperation with the Republic of Chile. ALMA is funded in Europe by the European Organization for Astronomical Research in the Southern Hemisphere (ESO), in North America by the U.S. National Science Foundation (NSF) in cooperation with the National Research Council of Canada (NRC) and the National Science Council of Taiwan (NSC), and in East Asia by the National Institutes of Natural Sciences (NINS) of Japan in cooperation with the Academia Sinica (AS) in Taiwan. ALMA construction and operations are led on behalf of Europe by ESO, on behalf of North America by the National Radio Astronomy Observatory (NRAO), which is managed by Associated Universities, Inc. (AUI), and on behalf of East Asia by the National Astronomical Observatory of Japan (NAOJ). The Joint ALMA Observatory (JAO) provides the unified leadership and management of the construction and operation of ALMA.

