

The ALMA Proposal Preparation Process

How to get started and what to expect



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*based on NAASC presentation

7 de abril de 2022



This talk is for you if...

- You are new to ALMA and have not yet had experience with the relevant documentation...
- You have not downloaded the ALMA Observing Tool (OT) or even know where to get it.
- You have a fabulous science case that will be essential to follow-up with ALMA facilities...
- You were familiar with past Cycles and wonder what Cycle 9 capabilities are now available and what changes will be made before the Call for Proposals.

This presentation will be available online for reference after this workshop.

FINAL WARNING!!!!

THERE IS NO SUCH THING AS A “LATE” PROPOSAL

“My internet is down...”

“My proposal won’t validate...”

“My power went out...”

“I thought the time was 16UT not 15UT...”

“My dog ate my proposal...”

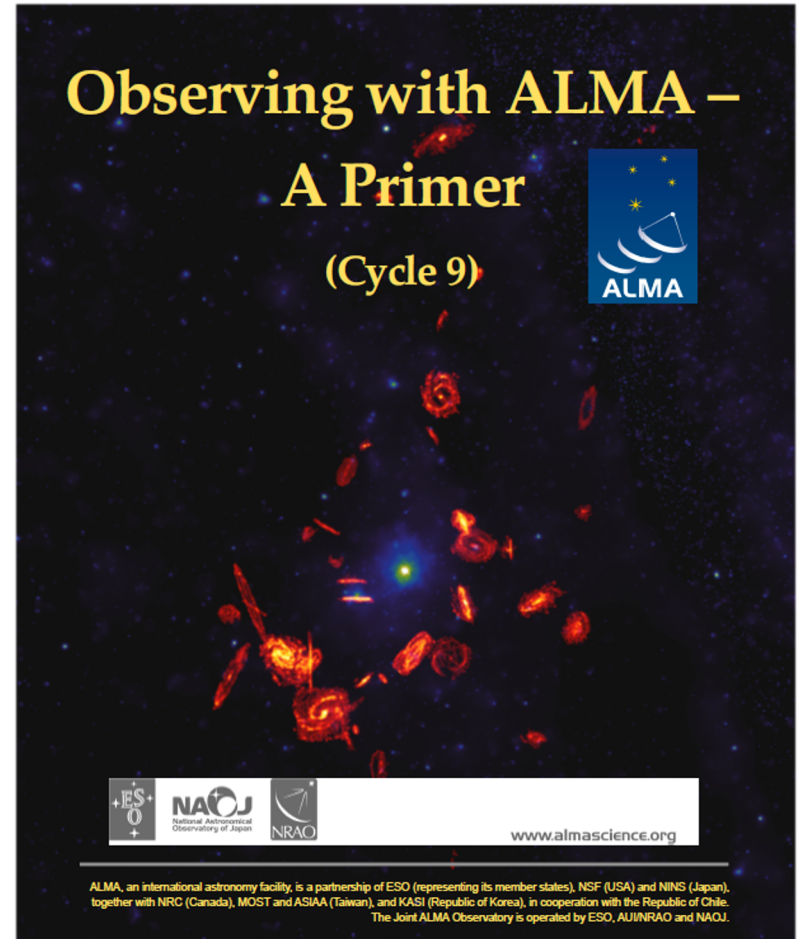
*There is no excuse for a late proposal UNLESS
the Observatory grants an extension.*

Proposal Checklist

- Read relevant documentation (CfP, Guide, Primer, etc.)
- Create an ALMA account by registering at the Science Portal (almascience.org)
- Download the Observing Tool (OT) & related guides
- Prepare the Science Case
 - New capabilities for Cycle 9!
- Prepare Science Goals (sources, frequency & correlator setup, integration times) within the OT
- Make use of the Helpdesk & the Knowledgebase

Cycle 9 Documentation & Timeline

- Call for Proposals
- Proposer's Guide
- ALMA Primer
- *OT Guide*
- *ALMA Technical Handbook*
- Timeline for Cycle 9
 - 24 Mar – Call for Proposals
 - 21 Apr – Proposal Deadline
 - August – Results to PIs
 - Oct. 2022 – Start of Cycle 9
 - Sept. 2023 – End of Cycle 9



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ALMA Science Portal @ NRAO

Get the OT
Call for Proposals
Helpdesk Support

www.almascience.org

Login

Set preferences
Set Expertise for DPR

Science Highlight
Normal, Dust-Obscured Galaxies in the Epoch of Reionization

Observatory News
QA0+ results now available from SnooPI
Jan 31, 2022
ALMA Cycle 9 Pre-Announcement
Dec 15, 2021
ALMA Science Archive object-type search, text-based similarity search and Jupyter Notebooks
Dec 14, 2021
Cycle 8 2021 has started!
Oct 04, 2021
The Cycle 8 2021 ACA Supplemental Call for Proposals is now OPEN!!
More...

NRAO Events
Toward a More Inclusive Proposal Review Process: Outcomes from the ALMA Cycle 8 Review
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Community Webinar Series: (Advanced) Synthesis Imaging with CASA
Mar 24, 2022
18th Synthesis Imaging Workshop
May 18, 2022
The VLA Sky Survey in the Multiwavelength Spotlight
Sep 07, 2022
AAS: NRAO Town Hall
More...

ALMA Status
Configuration Schedule
Refereed publications: 2690
Last observed source: ESO097-013
Current configuration: C-3
More...

Science Highlight
[CII] 158 μ m line and dust emission detections for (a) the REBELS-29 field at $z \sim 6.68$ and (b) the REBELS-12 field at $z \sim 7.35$. Background images are HST F140W and VIDEO J-band, respectively.
As part of the ongoing ALMA large program REBELS (Reionization-Era Bright Emission Line Survey), 40 UV-luminous primary targets were observed at $z > 6.5$. Among these targets are REBELS-12 and REBELS-29. In their recent paper, Fudamoto and colleagues report

Quick Links
[ALMA Basics](#) [ALMA Archive](#)

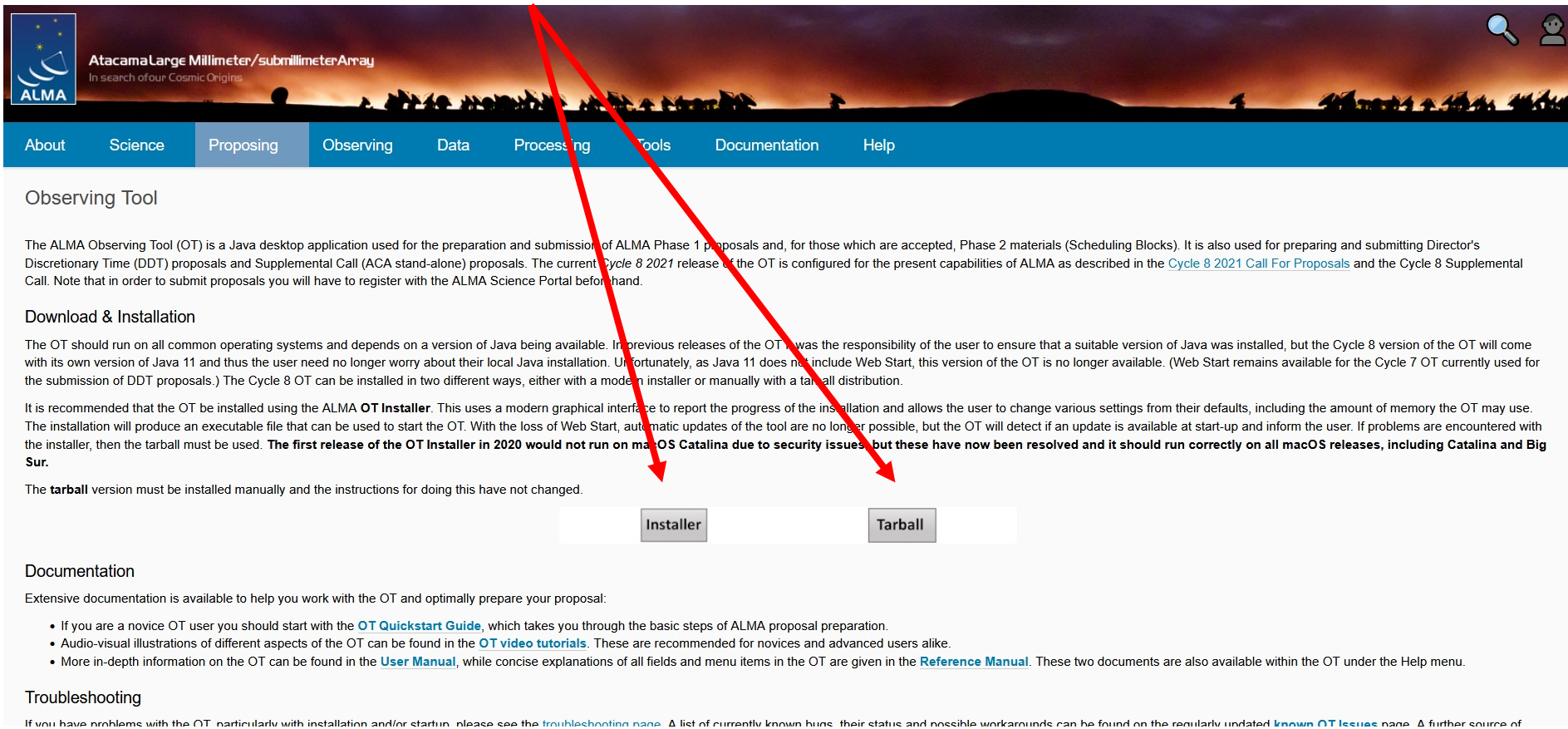
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Downloading the ALMA OT

Select the Installer or Tarball

Installer will automatically update if there is a new version of the OT pushed out.



The screenshot shows the ALMA website header with the logo and navigation menu. The 'Observing Tool' section is highlighted. The text describes the OT as a Java desktop application used for preparing and submitting ALMA proposals. It mentions the current Cycle 8 2021 release and notes that the OT is configured for the present capabilities of ALMA. The 'Download & Installation' section explains that the OT should run on all common operating systems and depends on a version of Java being available. It states that the Cycle 8 version of the OT will come with its own version of Java 11 and thus the user need no longer worry about their local Java installation. It also mentions that the Cycle 8 OT can be installed in two different ways, either with a modern installer or manually with a tarball distribution. The text recommends using the ALMA OT Installer, which uses a modern graphical interface to report the progress of the installation and allows the user to change various settings from their defaults, including the amount of memory the OT may use. It notes that the installation will produce an executable file that can be used to start the OT. With the loss of Web Start, automatic updates of the tool are no longer possible, but the OT will detect if an update is available at start-up and inform the user. If problems are encountered with the installer, then the tarball must be used. A note states: 'The first release of the OT Installer in 2020 would not run on macOS Catalina due to security issues, but these have now been resolved and it should run correctly on all macOS releases, including Catalina and Big Sur.' The text concludes that the tarball version must be installed manually and the instructions for doing this have not changed. At the bottom of the 'Download & Installation' section, there are two buttons: 'Installer' and 'Tarball'. Red arrows point from the text 'The first release of the OT Installer in 2020 would not run on macOS Catalina due to security issues, but these have now been resolved and it should run correctly on all macOS releases, including Catalina and Big Sur.' to both the 'Installer' and 'Tarball' buttons.

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

About Science Proposing Observing Data Processing Tools Documentation Help

Observing Tool

The ALMA Observing Tool (OT) is a Java desktop application used for the preparation and submission of ALMA Phase 1 proposals and, for those which are accepted, Phase 2 materials (Scheduling Blocks). It is also used for preparing and submitting Director's Discretionary Time (DDT) proposals and Supplemental Call (ACA stand-alone) proposals. The current [Cycle 8 2021](#) release of the OT is configured for the present capabilities of ALMA as described in the [Cycle 8 2021 Call For Proposals](#) and the Cycle 8 Supplemental Call. Note that in order to submit proposals you will have to register with the ALMA Science Portal before hand.

Download & Installation

The OT should run on all common operating systems and depends on a version of Java being available. In previous releases of the OT, it was the responsibility of the user to ensure that a suitable version of Java was installed, but the Cycle 8 version of the OT will come with its own version of Java 11 and thus the user need no longer worry about their local Java installation. Unfortunately, as Java 11 does not include Web Start, this version of the OT is no longer available. (Web Start remains available for the Cycle 7 OT currently used for the submission of DDT proposals.) The Cycle 8 OT can be installed in two different ways, either with a modern installer or manually with a tarball distribution.

It is recommended that the OT be installed using the ALMA **OT Installer**. This uses a modern graphical interface to report the progress of the installation and allows the user to change various settings from their defaults, including the amount of memory the OT may use. The installation will produce an executable file that can be used to start the OT. With the loss of Web Start, automatic updates of the tool are no longer possible, but the OT will detect if an update is available at start-up and inform the user. If problems are encountered with the installer, then the tarball must be used. **The first release of the OT Installer in 2020 would not run on macOS Catalina due to security issues, but these have now been resolved and it should run correctly on all macOS releases, including Catalina and Big Sur.**

The **tarball** version must be installed manually and the instructions for doing this have not changed.

Installer Tarball

Documentation

Extensive documentation is available to help you work with the OT and optimally prepare your proposal:

- If you are a novice OT user you should start with the [OT Quickstart Guide](#), which takes you through the basic steps of ALMA proposal preparation.
- Audio-visual illustrations of different aspects of the OT can be found in the [OT video tutorials](#). These are recommended for novices and advanced users alike.
- More in-depth information on the OT can be found in the [User Manual](#), while concise explanations of all fields and menu items in the OT are given in the [Reference Manual](#). These two documents are also available within the OT under the Help menu.

Troubleshooting

If you have problems with the OT, particularly with installation and/or startup, please see the [troubleshooting page](#). A list of currently known bugs, their status and possible workarounds can be found on the regularly updated [known OT issues](#) page. A further source of

OT Video Tutorials



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[About](#) [Science](#) [Proposing](#) [Observing](#) [Data](#) [Processing](#) [Tools](#) [Documentation](#) [Help](#)

OT Video Tutorials

Note: the videos presently only play in the Firefox browser. We are working on a fix.

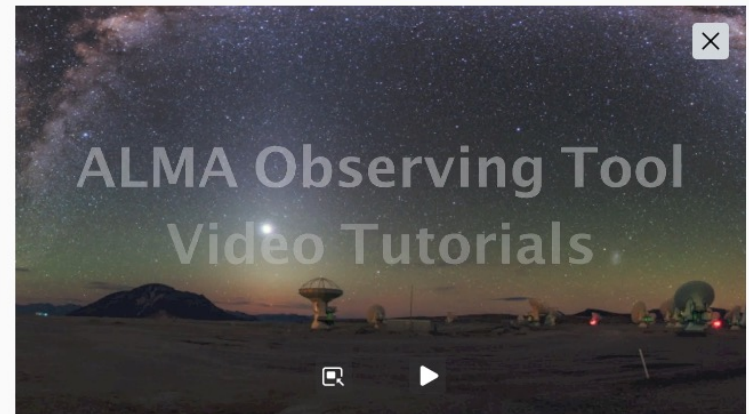
The OT video tutorials provide an audio-visual demonstration of different aspects of proposal preparation in the OT. Novice users should start with the first video and work their way down, while more experienced users may want to jump straight to one of the special topics. The video tutorials have not been updated for some time, but continue to be available in the hope that they might prove useful. Some new features, however, will not be covered and the appearance of the OT will have undergone some changes.

OT Video Tutorial 1: Useful to Know

This video will help you get started with the OT and introduce you to some handy tips and tricks. Topics covered include navigating the OT, using the help function, the template library, time estimation, validation, opening & submitting projects including re-submission in standard modes. Although this video is from Cycle 4, it will still give a useful introduction to the OT. Note that time constraints can now also include simultaneous 12-m and 7-m observations and re-submissions are no longer defined by the user.



This video is playing in Picture-in-Picture mode.



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Science Case

- Must include:
 - Astronomical Importance
 - Estimated intensity, S/N
- May include:
 - Figures
 - Tables
 - References
- Free-form PDF document
 - 12+ font, English only! (OT will check for font size)
 - 20 MB file size
 - 4 pages (6 for Large Programs)

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ALMA in Cycle 9

- **In Cycle 9, the following technical capabilities will be available for the first time:**
 - Fast Regional Mapping (FRM) for Solar Total Power observations. The size of the field of view for Solar Total Power observations can be changed by PI.
 - Spectral line Very Long Baseline Interferometry (VLBI). This capability is offered in Band 3 only, in conjunction with the Global Millimeter VLBI Array (GMVA).
 - Submillimeter VLBI. A continuum VLBI capability will be offered for the first time in Band 7 (0.87 mm) in conjunction with the Event Horizon Telescope (EHT).
 - Longer baseline high-frequency observations: Band 4 up to C-10, Band 9 up to C-9, and Band 10 up to C-8. The band-to-band (B2B) calibration mode may be triggered for long baseline high frequency observations in order to find a suitably close and strong calibrator. Some science targets, particularly at the highest frequencies and longest baselines, may NOT BE POSSIBLE even with B2B (see Appendix 9.6 of the PG).
 - *Up to a total of 75 hours of full polarization observations of a single field with the 7-m Array in stand-alone mode at the Main Call only still remains from Cycle 8 2021*
 - *The total time allocated to projects requiring band-to-band calibration techniques may be limited to 45 hours. For more information about band-to-band calibration see Section 4.2 of this document or Section 10.5.3 of the Technical Handbook.*

ALMA Capabilities

ACA Supplemental Call:

- In Cycle 8, 2021 ALMA will offer a stand-alone ACA Supplemental Call for Proposals.
- The Supplemental Call will open on 08 September 2021 and the proposal deadline will be on 06 October 2021.
- Observations from the Supplemental Call will be scheduled from January 2022 to September 2022.
- The anticipated amount of time available will be announced in the Call. While stand-alone ACA proposals accepted from the Main Call may be assigned priority "A", "B", or "C", all accepted proposals from the Supplemental Call will be assigned priority "C".
- More information about the supplemental call can be found at:
<https://almascience.nrao.edu/proposing/7m-array-supplemental-call>

NOT PLANNED FOR CYCLE 9!!!

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Project Structure

Proposal Program

Unsubmitted Proposal

- Project
 - Proposal
 - Planned Observing
 - ScienceGoal (Copy of B6 12CO (2-1): NGC3256)
 - General
 - Field Setup
 - Spectral Setup
 - Calibration Setup
 - Control and Performance
 - Technical Justification

Template library. Turn the keys on the JTree below & r...

Template library. Turn the keys on the JTree below & r...

- Proposal
 - Planned Observing
 - ScienceGoal (B3 spectral sweep: PK)
 - ScienceGoal (B7 continuum: COSMO)
 - ScienceGoal (B7 CO(9-8): Cosmic Ey
 - ScienceGoal (B9 continuum: Cosmic
 - ScienceGoal (B3 spectral sweep: PK)
 - ScienceGoal (B3 continuum: GRB To
 - ScienceGoal (B6 continuum: GRB To
 - ScienceGoal (B7 continuum: GRB To
 - ScienceGoal (B6 continuum: GRB To
 - ScienceGoal (B3 continuum: GRB To
 - ScienceGoal (B6 12CO (2-1): NGC32
 - ScienceGoal (B6 13CO (2-1): NGC32
 - ScienceGoal (B6 spectral line: Massi
 - ScienceGoal (B9 spectral line: Massi
 - ScienceGoal (B3 continuum: Protoste
 - ScienceGoal (B6 continuum: Protoste

Editors

Spectral Spatial Field Setup

Source Name

Choose a Solar System Object? ☐ Name of object

System Sexagesimal display? ☒ Parallax

Source Coordinates RA PM RA

Dec PM DEC

Source Radial Velocity Doppler Type

Target Type ☐ Individual Pointing(s) ☒ 1 Rectangular Field

Expected Source Properties

Peak Continuum Flux Density per Beam

Continuum Polarization Percentage %

Peak Line Flux Density per Beam

Line Width

Line Polarization Percentage %

Rectangle

Coords Type ☐ ABSOLUTE ☒ RELATIVE

System

Field Center Coordinates Offset(Longitude)

Offset(Latitude)

Feedback

Validation Validation History Log


Description	Suggestion
-------------	------------

See the OT presentation!

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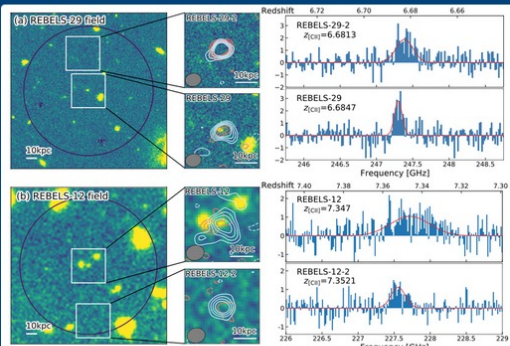


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Science Highlight

Normal, Dust-Obscured Galaxies in the Epoch of Reionization



[CII] 158 μ m line and dust emission detections for (a) the REBELS-29 field at $z \sim 6.68$ and (b) the REBELS-12 field at $z \sim 7.35$. Background images are HST F140W and VIDEO J-band, respectively.

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Observatory News

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18th Synthesis Imaging Workshop
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The VLA Sky Survey in the Multiwavelength Spotlight
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AAS: NRAO Town Hall
Dec 31, 2022

[More...](#)

ALMA Status

Configuration Schedule

Refereed publications: 2690
Last observed source: ESO097-013
Current configuration: C-3

[More...](#)

The ALMA Science Portal is a one-stop source for information and tools aimed at the scientific community as a whole, including proposers, archive researchers, ALMA staff, journalists, and funding agencies.

Quick Links

ALMA Basics	ALMA Archive
ALMA Science	SnooPI
ALMA Primer	Configuration Schedule

I could use a hand...

Have no fear, the ALMA Helpdesk is here...

ALMA



Atacama Large Millimeter/submillimeter Array
Observer Support

ALMA Science

Agent ▾

Submit Helpdesk Ticket

AR ▾

How can we help you today?

Help Center > Knowledgebase TOO

Knowledgebase

General (1)

- What Cycle 8 proposal issues and clarifications should I be awa...

[View all articles in General >](#)

ALMA Observing Tool (OT) (47)

- What are the restrictions on multiple spectral setups within a s...
- Can I set up monitoring observations with the OT?
- How do I change which sideband my spectral windows are plac...
- How do I set up a mosaic in the OT?
- How do I convert flux measurements given in Jy km/s or K km/...

[View all articles in ALMA Observing Tool \(OT\) >](#)

Proposal Handling (7)

Historical Articles (20)





How can we help you today?

Help Center TOO Search Sci Portal



Knowledgebase

View all articles >



Submit Helpdesk
Ticket

Get in touch for help>



My Tickets

View your tickets

>



Face to Face Visit

Arrange a visit >

Welcome to the new ALMA Helpdesk User Interface!

For “Face-to-Face Visit” – try the new “ALMA Chats” option which is more than a ticket but less than a full virtual f2f visit!

help.almascience.org

ALMA Helpdesk @ NRAO (logged in view)

Submit Helpdesk Ticket

Please complete this form and one of our agents will reply to you by email as soon as possible.

Name *

Anthony Remijan

Email

aremijan@nrao.edu

Cc

Department *

Select

Project Planning (NA)

General Queries (NA)

Face to Face Support (NA)

Data Reduction (NA)

Observing Tool (NA)

Proposal Handling (NA)

Archive and Data Retrieval (NA)

Proposal Submission Emergency

 Choose files or  Drag and drop

Submit

Reset

help.almascience.org

ALMA Helpdesk @ NRAO (logged in view)

Project - Observing Tool for ALMA, version Cycle2Test2

File Edit View Tool Search Help

1 New Proposal Ctrl-N
New DDT Proposal Ctrl-D
Open Project
Save Ctrl-S
Save As...
Show ALMA Template Library
Use Project as Template
Validate Ctrl-I
Submit Project
Preferences
Quit

Editors
Spectral Spatial Project
Principal Investigator
Select PI...
Project Code None Assigned

Feedback
Validation Validation History Log
Suggestion

Overview

Contextual Help

1. Please ensure you and your co-Is are registered with the [ALMA Science Portal](#)
2. Create a new proposal by either:
 - Selecting *File > New Proposal*
 - Clicking on the 1 icon in the toolbar
 - Or clicking on this [link](#)
3. Click on the [proposal](#) tree node and complete the relevant fields.

Phase 1: Science Proposal

New Science Proposal → Create Science Goals → Validate Science Proposal → Submit Science Proposal

Click on the overview steps to view the contextual help

Importing And Exporting Template Library Need More Help? View Phase 2 Steps

Click here to make sure that your project can be validated by the OT. If it won't, you will not be able to submit it.

When you are satisfied that your proposal is complete, click here to submit your project to the ALMA Archive

INRAO

After submission

- Remember, you can resubmit as often as needed, but keep in mind that the server is quite busy right before the deadline
- Distributed peer review will be used for all proposals requesting less than 50 hours on the 12-m Array, and ACA stand-alone proposals requesting less than 150 hours on the 7-m Array.
- In this review system, for each submitted proposal the PI (or one of the delegated co-Is) will be responsible for reviewing up to 10 other submitted proposals, thus increasing the involvement of the ALMA community in the review process – **if you don't submit reviews, YOUR proposal will be rejected!**
- Large proposals will be reviewed by science review panels, as in previous cycles.
- All proposals will be subject to Technical Assessment by a selected group of JAO and ARC experts.

After submission

- Proposals will be assessed on the basis of the overall scientific merit of the proposed investigation and its potential contribution to the advancement of scientific knowledge.
- Following approval by the Directors Council, the outcome of the Proposal Review Process will be communicated to the PIs of all valid submitted proposals - expected around August 2022.
- Any change requests need to go to the Helpdesk, and possibly a formal change request
 - Being prompt helps ensure your project can be observed!
- Then wait – dynamic scheduling means your Contact Scientist doesn't know when your project will run. As observations are made, updates are shown in the SnooPI tool on the Science Portal:

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



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.



www.nrao.edu
science.nrao.edu
public.nrao.edu

*The National Radio Astronomy Observatory is a facility of the National Science Foundation
operated under cooperative agreement by Associated Universities, Inc.*