

The ALMA Proposal Preparation Process

How to get started and what to expect



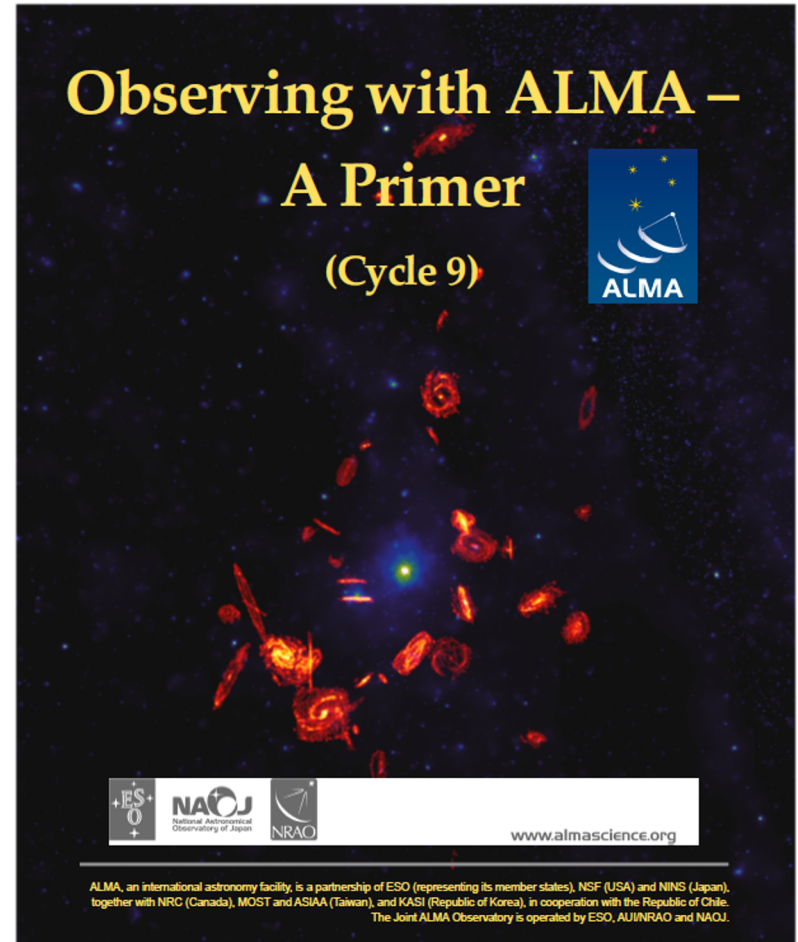
Tarraneh Eftekhari
CIERA Postdoctoral Fellow

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 Primer

Examples of Cycle 9 Observing With ALMA

- Molecular Absorption Lines at $z=0.9$
- Mapping a Lensed, High Redshift, Gas-Rich Galaxy
- A Survey of Submillimeter Galaxies
- Observing a GRB Afterglow (A Target of Opportunity)
- Mosaicing the Nearby Spiral Galaxy M100
- Multi-wavelength Continuum Survey of Protostellar Disks in Ophiuchus
- Dust Polarization and Magnetic Fields in Star Forming Clouds
- Observing Molecular Gas in a Planetary Nebula
- Continuum High Resolution Imaging of the Asteroid 3 Juno
- Continuum Mapping of the Sun at Millimeter Wavelengths

Observing with ALMA – A Primer (Cycle 9)

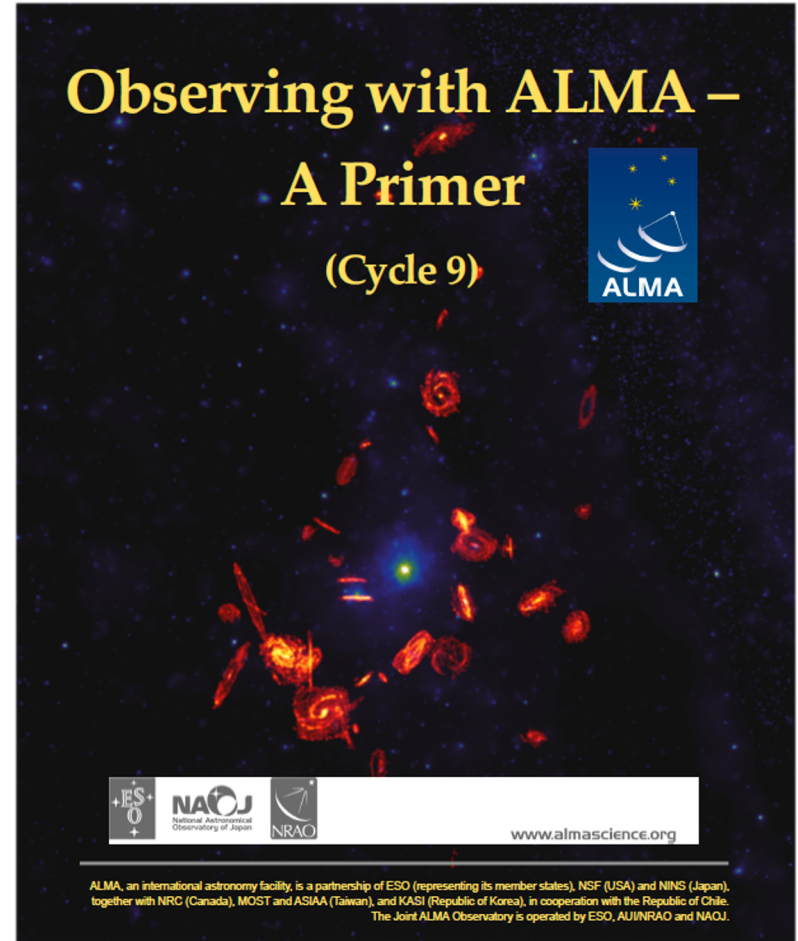


www.almascience.org

a partnership of ESO (representing its member states), NSF (USA) and NINS (Japan),
IAA (Taiwan), and KASI (Republic of Korea), in cooperation with the Republic of Chile.
The Joint ALMA Observatory is operated by ESO, AUI/NRAO and NAOJ.

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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 at my proposal...”

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

Proposal Checklist

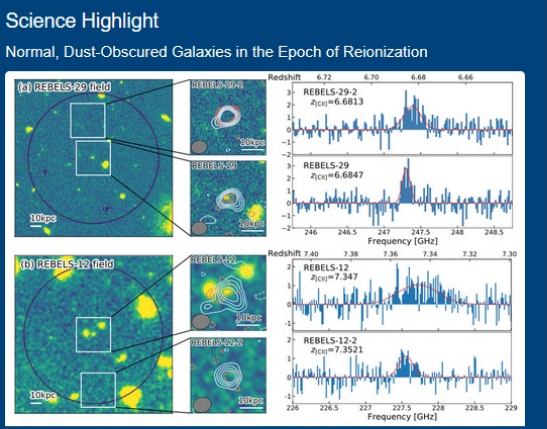
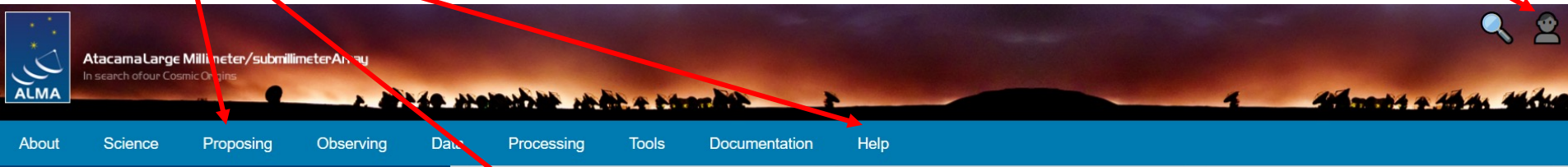
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ALMA Science Portal @ NRAO

Get the OT
Call for Proposals
Helpdesk Support

www.almascience.org

Login
Set preferences
Set Expertise for DPR



[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

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
Feb 17, 2022
- 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

[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](#)

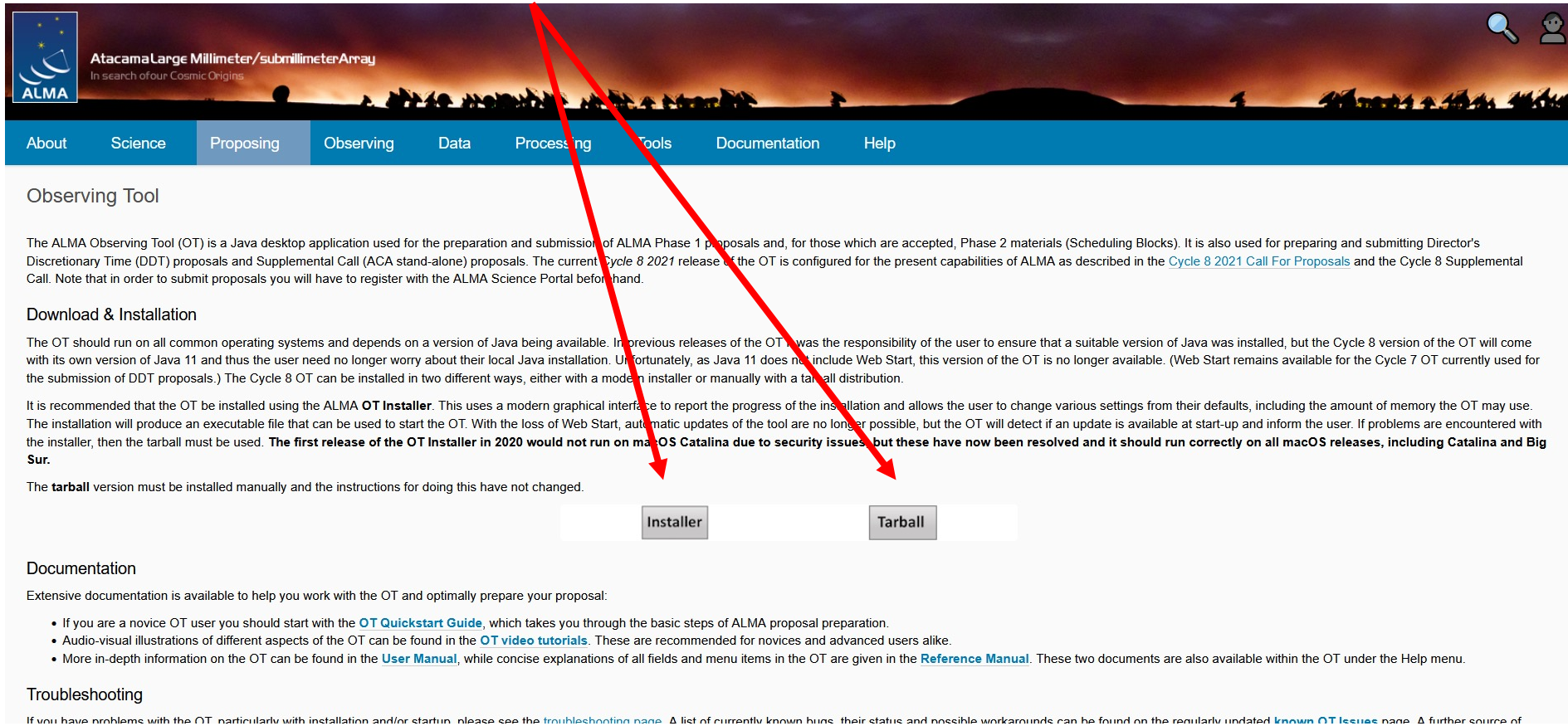


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Downloading the ALMA OT

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's 'Observing Tool' page. The header includes the ALMA logo and navigation tabs: About, Science, Proposing, Observing, Data, Processing, Tools, Documentation, and Help. The main content area is titled 'Observing Tool' and contains several paragraphs of text. Two red arrows originate from the blue instruction box at the top and point to the 'Installer' and 'Tarball' buttons located at the bottom of the 'Download & Installation' section.

Atacama Large Millimeter/submillimeter Array
In search of four 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 beforehand.

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

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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)

Dual-Anonymous Proposal Review: It will be the responsibility of the investigators to write their proposals such that anonymity is preserved.

Do not reveal the PI!



- Do not list the PI, co-PIs, or cols anywhere in the proposal
- Includes abstract, Scientific Justification, and Technical Justification

Use third person phrasing



- Reference your own work in the third person



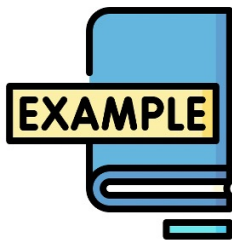
~~*In Smith et al. (2018), we demonstrated ...*~~

~~*Our study (Hayashi et al. 2021) showed that ...*~~



As demonstrated in Smith et al. (2018), ...

Hayashi et al. (2021) showed that ...



Referencing data and software anonymously



- Do not refer to software or data from ALMA or other observatories in a self-identifying fashion
- If software or datasets are available in a public repository (e.g., GitHub) or in a public paper, they can be referenced per normal practices
- If software or datasets are not public reference them as "obtained via private communication" or similar language



~~Figure 1 shows the image from our Cycle 7 ALMA program (2019.1.01045.S, PI Smith)...~~



~~The proposed ALMA observations will be combined with our HST data ...~~

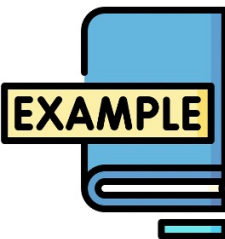
~~We use our group's line identification package STAR ...~~

Figure 1 shows the image from the Cycle 7 ALMA program 2019.1.01045.S



The proposed ALMA observations will be combined with available HST data (private communication) ...

We use the line identification package STAR (obtained via private communication) ...



Do not list PIs of other proposals



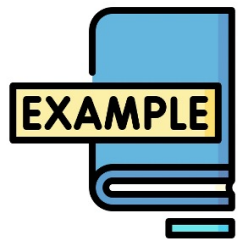
- Do not name the PI when listing a project code, even if it is not your own project



~~Figure 1 shows the image from the Cycle 7 program (2091.1.02045.S, PI Pérez).~~



Figure 1 shows the image from the Cycle 7 program (2019.1.02045.S)



Referencing papers in preparation



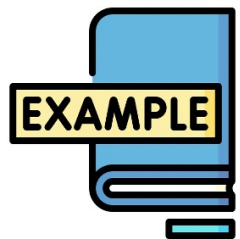
- Papers in preparation need to be referenced as private communication without an associated name.



Figure 1 shows the CO image from Gómez et al. (in preparation)



Figure 1 shows the CO image (private communication)



Referencing submitted papers



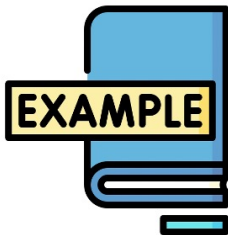
- References to submitted papers are not permitted (use “private communication”)
- If a submitted paper has been posted on the archive (e.g, arXiv), the archive paper can be referenced per usual practices



~~Our sample was obtained from a recent survey (Chang et al. submitted).~~



Our sample was obtained from a recent survey (private communication).



Use of “private communication”



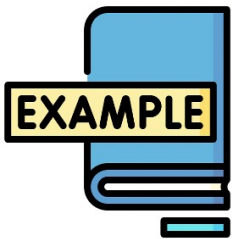
- Do not provide the name of the person when using “private communication”



~~We will combine the observations with archival data (Liu, private communication).~~



We will combine the observations with archival data (private communication)



Special note for Large Programs



- Proposals for Large Programs are required to submit a management plan
- This document is separate from the Scientific Justification
- The management plan is allowed to include names and institutions



- The ALMA Proposal Review Committee (APRC) will read the management plan only after completing the scientific ranking of the proposals.

Science Case

- Must include:
 - Astronomical Importance
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- May include:
 - Figures
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 - 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)

Encourage large proposals, high frequency proposals, and undersubscribed LST ranges! (see Proposer's Guide)

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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 6 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.***

See the Capabilities presentation

Proposal Checklist

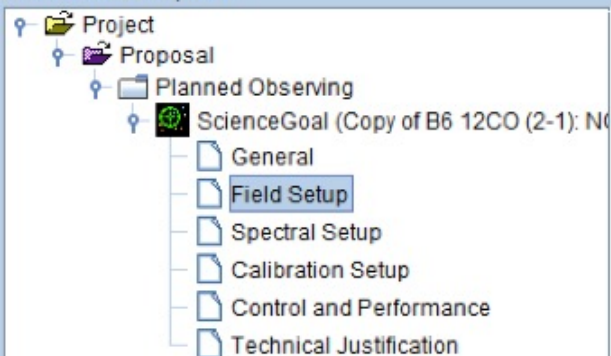
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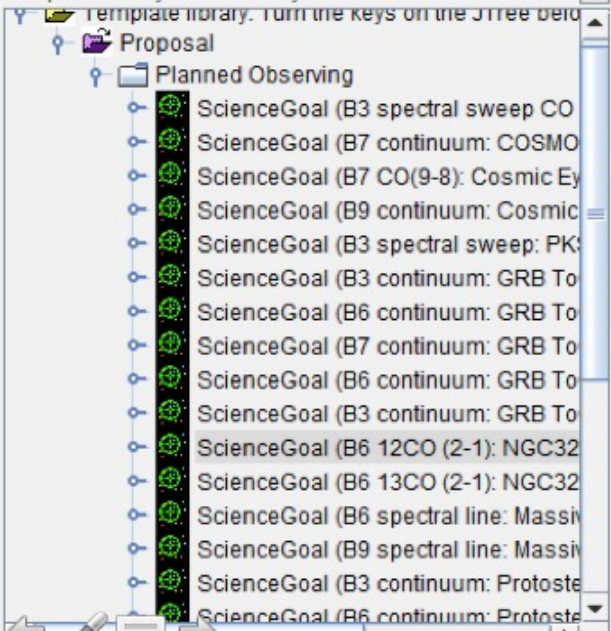
Project Structure

Proposal Program

Unsubmitted Proposal



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



Editors

Spectral Spatial Field Setup

Source Name Resol...

Choose a Solar System Object? Name of object

System Sexagesimal display? Parallax

Source Coordinates RA PM RA

Dec PM DEC

Source Radial Velocity z 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

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ALMA Science Portal @ NRAO

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

ALMA

About Science Proposing Observing Data Processing Tools Documentation Help

Science Highlight

Normal, Dust-Obscured Galaxies in the Epoch of Reionization

(a) 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 two additional emission line neighbours found after inspecting the ALMA data cube of these two sources. The images on the left show [CII] 158 μm 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. White horizontal bars correspond to 10 proper kpc. Solid red and light blue contours show 2σ to 5σ levels (and -5σ to -2σ for dashed contours) for the continuum and [CII] moment-0 maps, respectively. The continuum

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Dec 31, 2022

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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)



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)



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

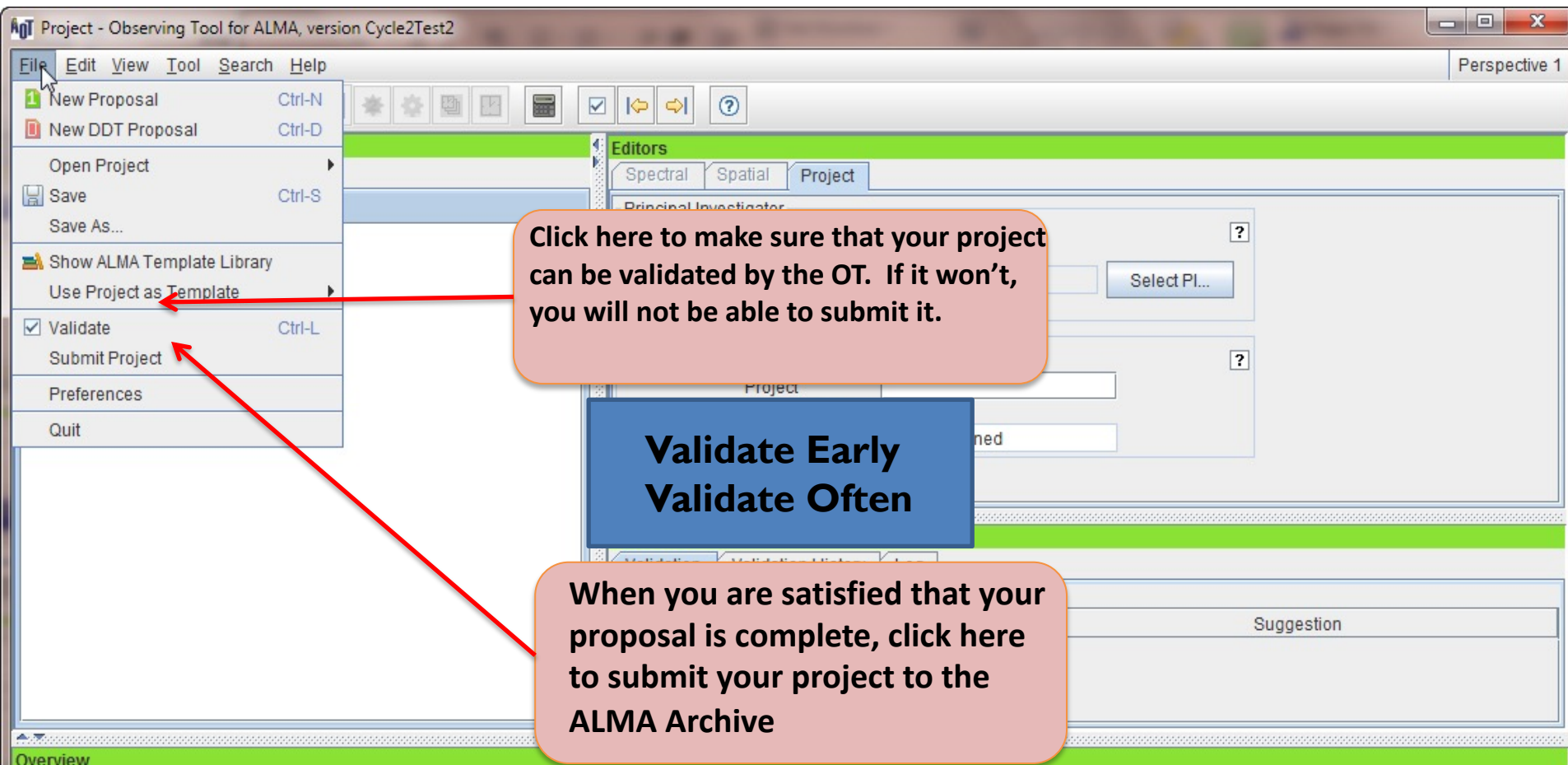
[Arrange a visit >](#)

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!

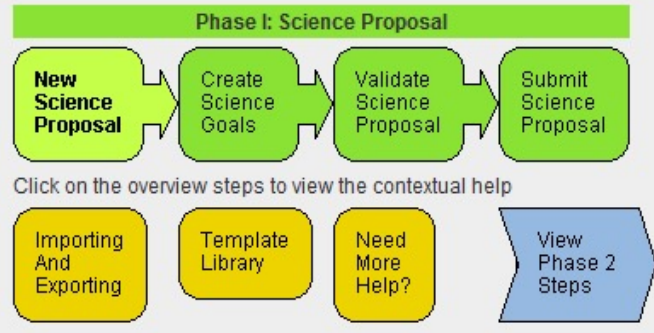
help.almascience.org

ALMA Helpdesk @ NRAO (logged in view)



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 icon in the toolbar
 - Or clicking on this [link](#)
3. Click on the [proposal](#) tree node and complete the relevant fields.



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.