

ALMA Cycle 3 Observing Tool (OT)

Registration to the ALMA Science portal

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Atacama Large Millimeter/submillimeter Array

Cycle 3 Call for Proposals

The [Cycle 3 Call for Proposals](#) is now open for scientific observations that will be scheduled from October 2015 to September 2016. The proposal submission deadline is 15:00 UT on April 23, 2015.

This is the website for **The ALMA Science Portal**, served from one of the **ALMA Regional Centers (ARCs)** of the ALMA partner organizations: ESO, NRAO or NAOJ. You may switch between the different instances of the portal through the links to the appropriate ALMA partner at the top banner. Through this portal you can find details about the technical capabilities of ALMA, how to propose for observing time, and how to access ALMA data. It includes links to all official ALMA documents and tools, including those for preparing and submitting proposals and processing ALMA data. In order to access some of the tools, users must register with the project and login to the portal via the links at the top banner.

General News

- ALMA Cycle 3 Call for Proposals is now open
Mar 24, 2015
- Resubmission of unfinished Cycle 1 and 2 proposals for the Cycle 3 proposal review
Mar 24, 2015
- Release of Science Verification data from the ALMA Long Baseline Campaign
Feb 17, 2015
- Announcement of intent to release a new installment of Science Verification data
Feb 02, 2015
- ALMA Cycle 3 Pre-announcement
Dec 08, 2014

More...

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- EA ARC

Registration to the ALMA Science portal

- www.almascience.org —> <https://almascience.nao.ac.jp>

<https://asa.alma.cl/UserRegistration//newAccount.jsp?arc=ea>



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

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Account info

New Account Registration

(Fields marked with a red dot are mandatory)

First name	<input type="text"/>
Middle initials	<input type="text"/>
Surname	<input type="text"/>
E-mail	<input type="text"/>
Receive optional emails	<input type="checkbox"/>
Re-type E-mail	<input type="text"/>
Account name	<input type="text"/>
Password	<input type="password"/>
Re-type password	<input type="password"/>
Institution	<input type="text" value="Choose country..."/> <input type="text" value="Choose Institution..."/>
Validation	<div><div>4HRxdP</div><div>Regenerate</div></div>

OT (Observing Tool)

- Check out here: <https://almascience.nao.ac.jp/proposing/observing-tool>
- OT (Webstart - recommended for the automatic update, or Tarball)
- Java-based application (check out Java and software security setup if there is any trouble of downloading)

- OT video tutorials
- OT quick start guide
- OT users manual
- OT reference manual
- Knowledgebase/FAQ, helpdesk

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Observing Tool

The ALMA Observing Tool (OT) is a Java application used for the preparation and submission of ALMA Phase I (observing proposal) and Phase II (telescope runfiles for accepted proposals) materials. It is also used for preparing and submitting Director's Discretionary Time (DDT) proposals. The current Cycle 3 release of the OT is configured for the Early Science Capabilities of ALMA as described in the [Cycle 3 Call For Proposals](#). Note that in order to submit proposals you will have to register with the ALMA Science Portal beforehand.

Note that preparation of Cycle 2 Phase II and DDT proposals needs to be done using the Cycle 2 version of the Observing Tool. This version of the OT can be found in the [DDT page](#), or the Phase II menu.

Download & Installation

The OT will run on most common operating systems, as long as you have **Java 7** installed (see the [troubleshooting page](#) if you are experiencing Java problems). The ALMA OT is available in two flavours: Web Start and tarball.

The **Web Start** application is the recommended way of using the OT. It has the advantage that the OT is automatically downloaded and installed on your computer and it will also automatically detect and install updates. There are some issues with Web Start, particularly that it does not work with the Open JDK versions of Java such as the "Iced Tea" flavour common on many modern Linux installations. The Sun/Oracle variant of Java should therefore be installed instead. If this is not possible, then the tarball installation of the OT is available.

The **tarball** version must be installed manually and will not automatically update itself, however there should be no installation issues. For Linux users, we also provide a download complete with a recommended version of the Java Runtime Environment. Please use this if you have any problems running the OT tarball install with your default Java.

[Webstart](#) [Tarball](#)

Proposal Preparation

- Download LaTeX template:

<https://almascience.nao.ac.jp/proposing/call-for-proposals/proposal-template>

- ALMA Cycle 3 proposals must be written in English and include the following sections:
 - Science case (2 pages - recommendation)
 - Figures, tables and references (optional) (2 pages - recommendation)
 - A brief statement on the likely potential for publicity (e.g. images, press releases etc.) arising from the proposed scientific observations
- These sections shall be submitted as a single PDF document
- Total 4 pages (A4 or Letter), with a font size no smaller than 12 points (figure captions, tables and references may be listed in 10-point font).
- file size less than 20MB
- Technical Justification in OT (not in the single PDF)
- For Cycle 3, proposal requiring more than 100 hours cannot be submitted.

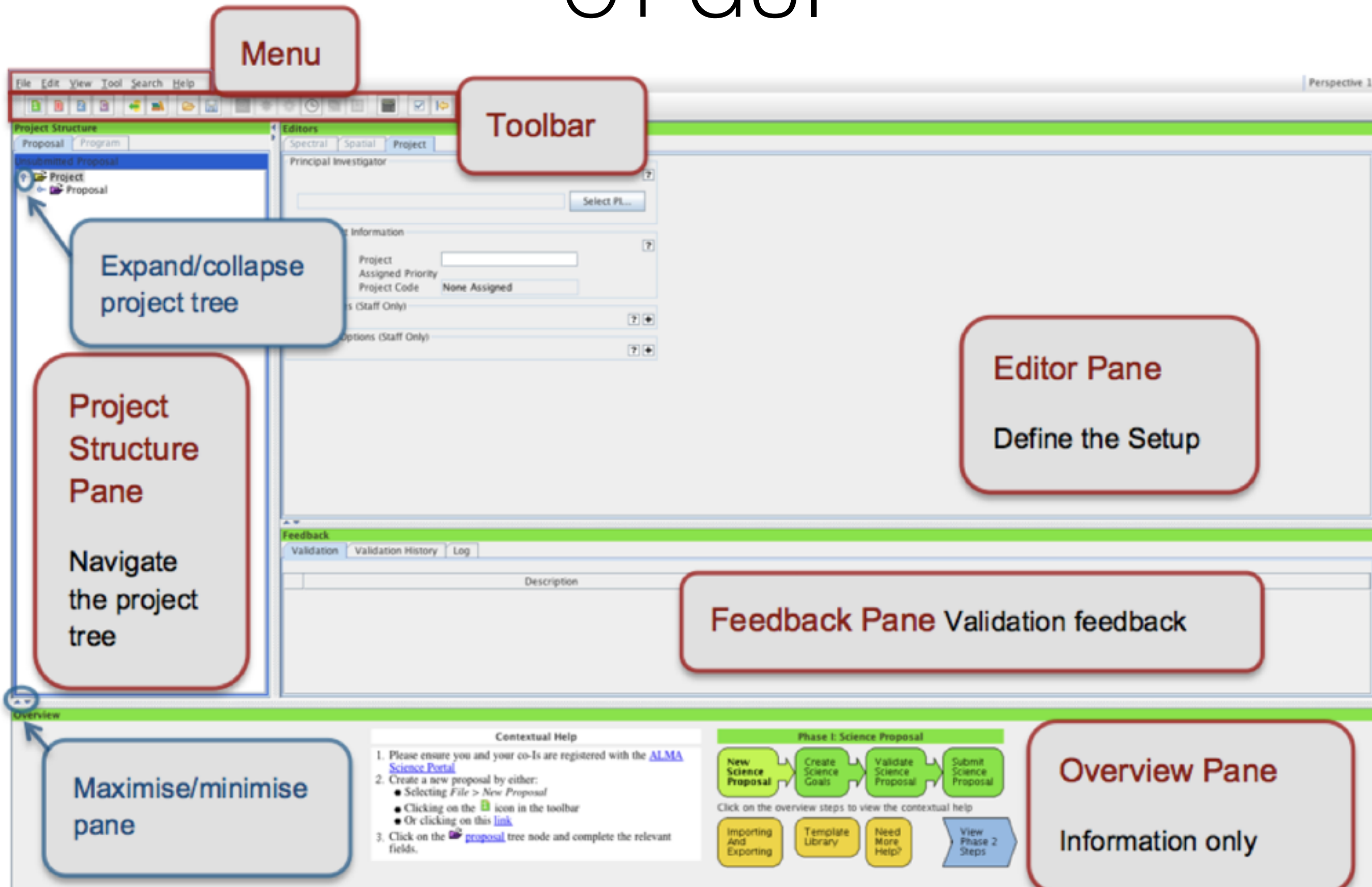
If you want to re-submit a proposal from the previous Cycles...



If you would like to re-submit a proposal from Cycle 0, 1, or 2 as a new Cycle 3 proposal you can simply open the old version **saved on disk** in the OT, edit it as needed, and submit it. This project will then be assigned a new (Cycle 3) project code. You will however not be able to edit proposals from previous cycles retrieved from the ALMA Science Archive. If you did not save a local copy of the .aot file you would like to re-submit, you can retrieve the old proposal from the archive and open it as a template. This will allow you to at least copy individual Science Goals into a new Cycle 3 project; the proposal information must however be filled from scratch.

There are several Science Goal templates in OT.

OT GUI



Proposal creation and submission in 10 easy steps

1. Enter the basic information for your proposal
2. Attach supporting material
3. Create a Science Goal
4. Add the source information
5. Configure the spectral setup
6. Finalize the spatial setup (Field setup)
7. Select the calibration strategy
8. Enter the control and performance parameters
9. Enter the technical justification
10. Validate and submit your proposal

Source list ASCII file format

- **Load from File...:** Add one or more sources, including their properties, using a local ASCII file. The format of the file is as follows:

```
Name, RA(sec), Dec(sec), PMRA(mas/yr), PMDec(mas/yr), vel(km/s), Ref frame, Doppler type,  
peak cont flux(mJy), peak line flux(mJy), cont pol(%), line pol(%), line width(km/s)  
-- This signals end of the header  
ngc253, 00:47:33.134, -25:17:19.68, 0.0, 0.0, 258.688, lsrk, RADIO, 200, 1000, 2, 0, 1500  
ngc1068, 02:42:40.771, -00:00:47.84, 0.0, 0.0, 1142.075, topo, OPTICAL, 1100.0, 30, 0, 0, 20
```

- **Source Name:** The source name. The source names should only contain the following characters: a-z, A-Z, 0-9, -,+, _ or a . (full stop). Characters other than these will be removed or replaced when the project is validated.

Field center coordinates in ASCII file

```
RA , Dec, Coordinate Type, Coordinate Units
-- This signals end of the header
04:31:38.4369, 18:13:57.651,Absolute,SEXAGESIMAL
04:31:40.5426, 18:13:57.650,Absolute,SEXAGESIMAL
04:31:36.3312, 18:13:57.650,Absolute,SEXAGESIMAL
```

Non-Standard modes

Non-standard modes are observing modes that are less well characterized or for which the data need to be processed manually by ALMA staff. Up to 25% of the total Cycle 3 observing time will be assigned to such projects. Non-standard modes are supported in Cycle 3 on a "best-efforts" basis only.

1. Bands 8, 9 & 10 observations
2. Long baselines ($> 2\text{km}$)
3. Polarization (Full Polarization measurements using only TDM mode will be offered in Cycle 3 for 12-m Array. Observations only in Bands 3, 6 and 7. This is a non-standard mode, limiting the total time available for such observations.)
4. Spectral Scans
5. Spectral setups with only narrow band spectral windows
(aggregate bandwidth $< 934\text{ MHz}$)
6. Non-standard calibrations (user-defined calibrations selected in the OT)

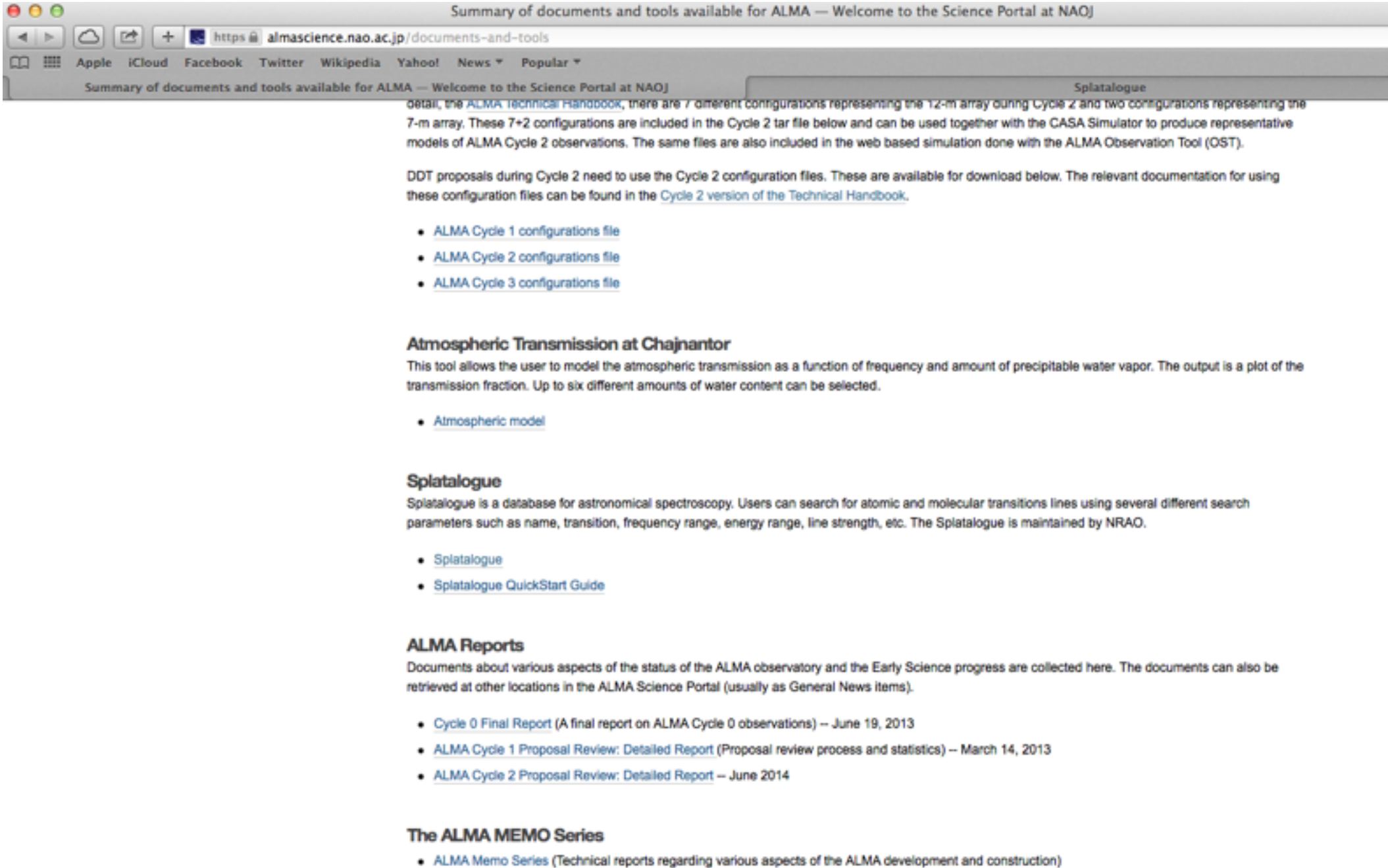
Largest Angular Scale & Maximum Recoverable scale

<https://science.nrao.edu/science/videos/largest-angular-scale-and-maximum-recoverable-scale>

Desired Angular Resolution: your choice is guided by the *synthesized beamsizes* corresponding to the most compact and most extended configurations available in Cycle 3 as displayed in the *Configuration Information*. The value entered cannot be smaller than the synthesized beam size of the most extended configuration, and cannot be larger than twice the synthesized beam size of the most compact configuration. You can input the angular resolution in arc-seconds or a fraction of the main beam size.

Largest Angular Structure in source: here you should enter the largest angular structure that you **wish to resolve** in your source(s), which may be different from the actual size of the source. The value entered determines whether you need multiple 12-m configurations and/or the ACA, and therefore has a direct influence on the time estimate (see the *Maximum recoverable scale* for the 12-m configurations in the *Configuration Information* table for guidance.). The input units are the same as for the angular resolution.

Splatalogue : Database for astronomical spectroscopy



Summary of documents and tools available for ALMA — Welcome to the Science Portal at NAOJ

detail, the [ALMA Technical Handbook](#), there are 7 different configurations representing the 12-m array during Cycle 2 and two configurations representing the 7-m array. These 7+2 configurations are included in the Cycle 2 tar file below and can be used together with the CASA Simulator to produce representative models of ALMA Cycle 2 observations. The same files are also included in the web based simulation done with the ALMA Observation Tool (OST).

DDT proposals during Cycle 2 need to use the Cycle 2 configuration files. These are available for download below. The relevant documentation for using these configuration files can be found in the [Cycle 2 version of the Technical Handbook](#).

- [ALMA Cycle 1 configurations file](#)
- [ALMA Cycle 2 configurations file](#)
- [ALMA Cycle 3 configurations file](#)

Atmospheric Transmission at Chajnantor

This tool allows the user to model the atmospheric transmission as a function of frequency and amount of precipitable water vapor. The output is a plot of the transmission fraction. Up to six different amounts of water content can be selected.

- [Atmospheric model](#)

Splatalogue

Splatalogue is a database for astronomical spectroscopy. Users can search for atomic and molecular transitions lines using several different search parameters such as name, transition, frequency range, energy range, line strength, etc. The Splatalogue is maintained by NRAO.

- [Splatalogue](#)
- [Splatalogue QuickStart Guide](#)

ALMA Reports

Documents about various aspects of the status of the ALMA observatory and the Early Science progress are collected here. The documents can also be retrieved at other locations in the ALMA Science Portal (usually as General News Items).

- [Cycle 0 Final Report](#) (A final report on ALMA Cycle 0 observations) — June 19, 2013
- [ALMA Cycle 1 Proposal Review: Detailed Report](#) (Proposal review process and statistics) — March 14, 2013
- [ALMA Cycle 2 Proposal Review: Detailed Report](#) — June 2014

The ALMA MEMO Series

- [ALMA Memo Series](#) (Technical reports regarding various aspects of the ALMA development and construction)

Splatalogue : Database for astronomical spectroscopy

The screenshot shows the Splatalogue web interface. At the top, there are two browser tabs. The first tab is titled 'Summary of documents and tools available for ALMA — Welcome to the Science Portal at NAOJ' and has the URL 'https://almascience.nao.ac.jp/documents-and-tools'. The second tab is titled 'Splatalogue' and has the URL 'www.cv.nrao.edu/php/splat/'. Below the tabs, there are three buttons: 'Basic', 'Advanced', and 'Expert'. The 'Basic' button is highlighted. The main content area is divided into several sections. On the left, there is a 'Quick Picker' section with a list of chemical species and their vibrational states, each with a checkbox. In the center, there is a search bar with the text 'ex: ammonia, carbon monoxide, methanol, water, CO, NH3'. Below the search bar, there is a dropdown menu for 'Telescope Bands' with options: 'Any', 'ALMA Band 3 (84-116 GHz)', 'ALMA Band 4 (125-163 GHz)', and 'ALMA Band 5 (163-211 GHz)'. To the right of the search bar, there is a 'Redshift' input field with the value '0.0'. Below the search bar, there are input fields for 'Energy Range' (Min and Max) and 'Frequency Range' (Min and Max). There are also buttons for '+ Frequency' and '- Frequency'. On the right side, there is an 'Astronomical Filters' section with a list of filters and radio buttons. At the bottom, there is a 'Search' button. Below the search interface, there is a red banner with the text 'Welcome to the "New" Splatalogue!'.

Summary of documents and tools available for ALMA — Welcome to the Science Portal at NAOJ

https://almascience.nao.ac.jp/documents-and-tools

Splatalogue

www.cv.nrao.edu/php/splat/

Summary of documents and tools available for ALMA — Welcome to the Science Portal at NAOJ

Splatalogue

Basic Advanced Expert

Quick Picker

☐ CO $v=0$ ☐ ^{13}CO $v=0$
☐ C^{17}O ☐ C^{18}O
☐ CH_3OH $v_1=0$ ☐ H_2CO
☐ HCN $v=0$ ☐ HNC $v=0$
☐ H^{13}CN $v=0$ ☐ HC^{15}N $v=0$
☐ DCN $v=0$ ☐ HCO^+ $v=0$
☐ CS ☐ H^{13}CO^+
☐ NH_3 ☐ C I
☐ C II ☐ O I
☐ O III ☐ N II
☐ H_2O $v=0$ ☐ HDO
☐ SiO $v=0$

Search: ex: ammonia, carbon monoxide, methanol, water, CO, NH3

Any
ALMA Band 3 (84-116 GHz)
ALMA Band 4 (125-163 GHz)
ALMA Band 5 (163-211 GHz)

Telescope Bands: Redshift: 0.0

Energy Range: Min Max ☒ E_L (cm^{-1}) ☐ E_L (K)

Frequency Range: Min Max Frequency Unit: GHz

+ Frequency - Frequency Search

Astronomical Filters
(Double click to unselect)

☐ Top 20 list
☐ Planetary Atmosphere
☐ Hot Cores
☐ Dark Clouds
☐ Diffuse Clouds
☐ Comets
☐ AGB/PPN/PN
☐ Extragalactic

Scan to Mobile Splat

Welcome to the "New" Splatalogue!

Over the past several years, there has been an active effort to improve the overall functionality and usability of Splatalogue. We are now offering new options to navigate the nearly 6 million spectral lines available via Splatalogue. The user community has suggested a simpler, more efficient way of searching for and obtaining the more common spectral line features from the radio to submillimeter wavelength.

This new **Splatalogue Basic** search page is now available and has several new and quick search features including:

Redshift Converter: Located in the center of the page, you can now enter your desired redshift and the appropriate frequency or wavelength conversion will be completed. Both the redshifted value and the rest frame value will be displayed under the Ordered column as labeled. If nothing is entered, the default redshift is set to 0.

Wavelength or Frequency Search: You can choose whether you would like to search by frequency or wavelength. The options range from Hz to THz for frequency and angstroms through meters for wavelength. Choose the best option from the drop down menu just beside the frequency search range.

The Quick Picker: Located on the far left. Popular species are included. Click on your favorite, hit search and the results will pop up. You can also limit the frequency by entering in your preferred frequency or wavelength range.

Search Bar: Located in the center of the page. Type in the name (or in some cases, the formula) of your favorite molecule and all species with that molecule name, including isotopologues of that species, will be displayed. Again, you can limit the frequency displayed by entering in your preferred frequency or wavelength range.

Telescope Band Search: Located at the center of the page. This feature allows users to search molecules by telescope bands of the GBT, Jansky VLA, and ALMA. Instead of limiting your search by typing in a specific frequency or wavelength range, you can choose your favorite telescope band of interest. NOTE: the current version only allows searching one band at a time!

Astronomical Filters: Located on the far right. This option allows you to limit your search to the species currently known within certain astronomical environments. Also available is the "Top 20 list" which is the same as in the ALMA OT. When selected, the Top 20 species will be displayed. You can also choose your own desired frequency or wavelength range here as well to limit the output.

Duplications



Atacama Large Millimeter/submillimeter Array
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Duplications

Duplication Checklists

Cycle 3 proposals will be checked for duplication against successful Cycle 1 and Cycle 2 (though not Cycle 0) projects. Duplication checks will be performed against Cycle 2 grade A projects (which have the highest priority of completion) or against Cycle 1 or 2 grade B or C projects that have archived data at the time of the Cycle 3 proposal deadline. The duplication criteria are given in Section 5.2 of the [Users' Policies](#). The Proposal Review Committee will make recommendations regarding potential duplications (see Section B.2.2 of the [Cycle 3 Proposer's Guide](#)).

To help PIs avoid writing proposals that include duplicated targets, we include below a link to a list of the metadata from Cycle 2 grade A projects. The ALMA Science Archive query interface can be used to search for targets from Cycle 1 or 2 grade B or C projects that have archived data (be sure to uncheck the "Public data only" option to include proprietary data in the search). Data from such projects that are archived after the Cycle 3 proposal deadline will not constitute duplications against Cycle 3 proposals.

The duplication checklist is provided in both Excel Workbook (xlsx) and Comma Separated Variable (CSV) text format. It includes one row for each target, offset, or mosaic central pointing. The content is described at the beginning of the file, and includes target names, coordinates, properties of each spectral window, along with the PI-requested resolutions and sensitivities. Observational constraints are not included. The metadata are primarily drawn from the "Phase 1" data submitted with the original proposals. "Phase 2" metadata (drawn from the Scheduling Blocks created by ALMA staff and approved by PIs) are used when the Phase 1 data are significantly modified (as a result of proposal review process, from an approved Change Request, or to be consistent with ALMA "best practices").

PIs should avoid proposing the same targets with similar observational parameters in their Cycle 3 proposals, or should explain clearly why the proposed observations would not constitute a duplication.

[Duplication list \(Excel spreadsheet\)](#)

[Duplication list \(CSV text file\)](#)

[ALMA Science Archive Query](#)