

Townhall meeting for ALMA Cycle 10 proposal preparation

A night sky with a full moon, stars, and a silhouette of a tree on a hill. The Milky Way is visible in the background.

Observing Tool

2023. 4. 18. Seokho Lee (KASI)

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Quick Guidance



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

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Science Highlight

Birth of a very distant cluster of galaxies in the early Universe



This image shows the protocluster at the birth of the Spiderweb galaxy (PKS 1138-262) at a redshift of 6.3. The detected hot gas is depicted as an orange cloud.

Using band 3 observations with the 12-m and 7-m arrays of ALMA, DRAO and other collaborators discovered a large amount of hot gas (comprising the "intracluster medium" or ICM for short) in the still-forming galaxy cluster.

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News

BEARS
2022

at 10 years: Past,
Present, and Future
2022

45m/ASTE Users
Meeting 2022
2022

Grant Fellow Symposium
2022

Cycle 9 2022 Proposal

ALMA Status

Configuration Schedule

Refereed publications:

3247

Last observed source: C49

Current configuration: C-5

[More...](#)

Information and tools aimed at the scientific community and the public, journalists, and funding agencies.





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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 10 release of the OT is configured for the present capabilities of ALMA as described in the [Cycle 10 Call For Proposals](#). 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. The Cycle 10 version of the OT will come with its own version of Java 11 and thus the users 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. The Cycle 10 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 **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 get started with the OT. Additionally, comprehensive user guides are available for the OT.

[ALMA Cycle 10 Call for Proposals](#)[ALMA Proposal Review](#)[Proposing Guidance](#)[Cycle 10 Proposer's Guide](#)[Cycle 10 Capabilities](#)[Observing Tool](#)[Sensitivity Calculator](#)[ALMA Primer](#)[Technical Handbook](#)[Proposal Template](#)[Duplicate Observations](#)[DDT proposals](#)



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Installer Page



- [Mac OS Installer](#)
- [Linux Installer](#)
- [Windows Installer](#)

Click on one of the links next to the OT Logo to download the Cycle-10 OT Installer for your particular operating system. The Installer is an executable file which can be started by double-clicking in a file-manager window or started from a shell's command line. Once started, it will take you through a number of screens which, for example, allow you to change the default amount of memory available to the OT. In most cases you can just accept all the defaults using the 'Next' button and click 'Install' when you are happy.

After the Installer has finished, an executable file ('ALMA-OT.sh' on Linux and 'ALMA-OT.app' on Macs) should be found inside a directory named 'ALMAOT-C10-2023'. This can be run from the command line or by double-clicking in a file manager if this is configured in this way. We recommend that the name of this directory not be changed so that multiple versions of the OT (for use in different cycles) can be maintained on your computer. On Macs, a shortcut will be created on your Desktop with the name 'ALMAOT-C10-2023' - the OS will probably ask to control your Finder for this to happen.

Additional Information

- The Mac download is a zip archive which must first be opened in order to extract the installer. This will often be done automatically for you or a suitable program will be suggested ('Archive Utility').
- On Linux, typing 'sh almaot-C10-2023.bin' is the recommended way of starting the installer - it should not be necessary to make it executable.
- There may be various issues related to security when running the Installer. Mac users may need to give permission to run the tool by opening the 'Security & Privacy' menu of 'System Preferences' and this menu should also be set to allow the use of apps from 'identified developers'. Alternatively, running the installer by right-clicking

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YOU (and your Co-Is) should be registered in ALMA site.

18:23 4월 13일 목요일

Home — ALMA Science | X +

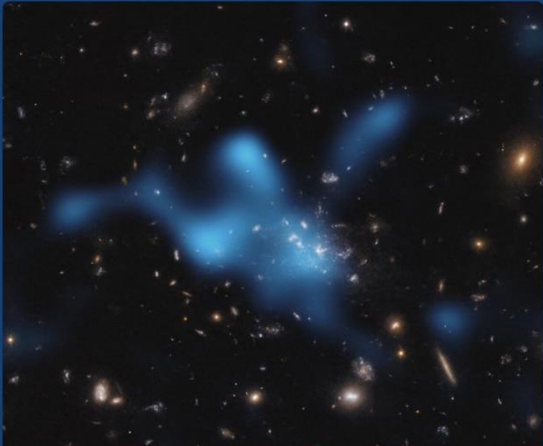
almascience.nao.ac.jp

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

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Science Highlight

Birth of a very distant cluster of galaxies from the early Universe



This image shows the protocluster around the Spiderweb galaxy (PKS 1138-262) at $z=2.156$. The detected hot gas is depicted as an overlaid blue cloud.

Using band 3 observations with both the 12-m and 7-m arrays of ALMA, Di Mascolo and collaborators discovered a large reservoir of hot gas (comprising the "intracluster medium", or ICM for short) in the still-forming galaxy cluster

Observatory News

- ALMA Cycle 10 Call for Proposals is Now OPEN!
Apr 12, 2023
- New Targets for Science Verification: Band 1
Mar 16, 2023
- ALMA Cycle 10 Pre-Announcement
Jan 18, 2023
- ALMA Cycle 9 Proposal Review: Detailed Report
Jan 12, 2023

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NAOJ News

- ALMA BEARS
Dec 01, 2022
- ALMA at 10 years: Past, Present, and Future
Dec 13, 2022
- ALMA/45m/ASTE Users Meeting 2022
Nov 17, 2022
- ALMA Grant Fellow Symposium 2022
Nov 17, 2022
- ALMA Cycle 9 2022 Proposal

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ALMA Status

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[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



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

In case of problems with the registration, please use [this Web form](#) to contact us
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Important Input Parameters

Important parameters I

- Scales
 - Angular Resolution (beam size) ~ depend on the longest baseline
 - Maximum Recoverable Scale (MRS)
 - depends on the shortest baseline ($\sim 10 \times$ beam size)
 - When the scale is longer than MRS, the emission is resolve out
 - Largest Angular Structure (LAS) should be shorter than MRS.
 - $LAS > MRS \rightarrow$ multiple configuration or ACA and TP are added.
 - Field of View (FOV)
 - FWHM of the 12m telescope primary beam
 - Area of target is larger than $1/3$ FOV, mosaic is needed.

Schedule for C10 configurations

Start date	Configuration	Longest baseline	LST for best observing conditions
2023 October 1	C-8	8.5 km	~ 22—10 h
2023 October 20	C-7	3.6 km	~ 23—11 h
2023 November 10	C-6	2.5 km	~ 1—13 h
2023 December 1	C-5	1.4 km	~ 2—14 h
2023 December 20	C-4	0.78 km	~ 4—15 h
2024 January 10	C-3	0.50 km	~ 5—17 h
2024 February 1	<i>No observations due to maintenance</i>		
2024 March 1	C-1	0.16 km	~ 8—21 h
2024 March 26	C-2	0.31 km	~ 9—23 h
2024 April 20	C-3	0.50 km	~ 11—0 h
2024 May 10	C-4	0.78 km	~ 12—2 h
2024 May 31	C-5	1.4 km	~ 13—4 h
2024 June 23	C-6	2.5 km	~ 15—6 h
2024 July 28	C-5	1.4 km	~ 17—7 h
2024 August 18	C-4	0.78 km	~ 19—8 h
2024 September 10	C-3	0.50 km	~ 20—9 h

Band 5 (around 183GHz) and 7-10 are recommended within LST ranges (not Dec-March)

AR and MRS for C10 configurations

	Band		1	3	4	5	6	7	8	9	10
Config.	L _{max}	Freq. (GHz)	40	100	150	185	230	345	460	650	870
	L _{min}										
7-m	45 m	θ_{res} (arcsec)	31.5	12.5	8.35	6.77	5.45	3.63	2.72	1.93	1.44
	9 m	θ_{MRS} (arcsec)	167	66.7	44.5	36.1	29.0	19.3	14.5	10.3	7.67
C-1	161 m	θ_{res} (arcsec)	8.45	3.38	2.25	1.83	1.47	0.98	0.74	0.52	0.39
	15 m	θ_{MRS} (arcsec)	71.2	28.5	19.0	15.4	12.4	8.25	6.19	4.38	3.27
C-2	314 m	θ_{res} (arcsec)	5.75	2.30	1.53	1.24	1.00	0.67	0.50	0.35	0.26
	15 m	θ_{MRS} (arcsec)	56.5	22.6	15.0	12.2	9.81	6.54	4.90	3.47	2.59
C-3	500 m	θ_{res} (arcsec)	3.55	1.42	0.94	0.77	0.62	0.41	0.31	0.22	0.16
	15 m	θ_{MRS} (arcsec)	40.5	16.2	10.8	8.73	7.02	4.68	3.51	2.48	1.86
C-4	784 m	θ_{res} (arcsec)	2.30	0.92	0.61	0.50	0.40	0.27	0.20	0.14	0.11
	15 m	θ_{MRS} (arcsec)	28.0	11.2	7.50	6.08	4.89	3.26	2.44	1.73	1.29
C-5	1.4 km	θ_{res} (arcsec)	1.38	0.55	0.36	0.30	0.24	0.16	0.12	0.084	0.063
	15 m	θ_{MRS} (arcsec)	16.8	6.70	4.47	3.62	2.91	1.94	1.46	1.03	0.77
C-6	2.5 km	θ_{res} (arcsec)	0.78	0.31	0.20	0.17	0.13	0.089	0.067	0.047	0.035
	15 m	θ_{MRS} (arcsec)	10.3	4.11	2.74	2.22	1.78	1.19	0.89	0.63	0.47
C-7	3.6 km	θ_{res} (arcsec)		0.21	0.14	0.11	0.092	0.061	0.046	0.033	0.024
	64 m	θ_{MRS} (arcsec)		2.58	1.72	1.40	1.12	0.75	0.56	0.40	0.30
C-8	8.5 km	θ_{res} (arcsec)		0.096	0.064	0.052	0.042	0.028	0.021	0.015	0.011
	110 m	θ_{MRS} (arcsec)		1.42	0.95	0.77	0.62	0.41	0.31	0.22	0.16

Most Extended configuration	Allowed Compact configuration pairings	Extended 12-m Array Multiplier	Multiplier if compact 12-m Array needed	Multiplier if 7-m Array needed	Multiplier if TP Array needed and allowed
7-m Array	TP			1	1.7
C-1	7-m Array & TP	1		7.0	11.9
C-2	7-m Array & TP	1		4.7	7.9
C-3	7-m Array & TP	1		2.4	4.1
C-4	C-1 & 7-m Array & TP	1	0.34	2.4	4.0
C-5	C-2 & 7-m Array & TP	1	0.26	1.2	2.1
C-6	C-3 & 7-m Array & TP	1	0.25	0.6	1.0
C-7	C-4	1	0.23		
C-8	C-5	1	0.22		

Table A-2: Allowed Array Combinations and Time Multipliers. See Chapter 7 of the [Technical Handbook](#) for relevant equations and detailed considerations. If the array configuration that meets the AR request according to Table A-1 has a MRS that is smaller than the LAS request, the OT checks if adding more compact array configurations, following the restrictions of this Table, fulfills the LAS request. If so, the final setup consists of the selected combination of arrays. Otherwise, the OT returns a validation error. C-9 and C-10 are not offered in Cycle 10; please see Section 7.8 of the [Technical Handbook](#) for details on array combinations involving those configurations.

Important parameters II

- Expected Source properties
 - Position, source velocity
 - **Peak Flux Density per beam**
 - $\text{SNR} > 3$
 - **Polarization**
 - linear $> 0.1\%$ (< 0.3 FOV)
 - circular $> 1.8\%$ (< 0.1 FOV)
 - **Line width**
 - $> 3 \times$ spectral resolution

You should describe how to derive/adopt these values in Technical Justification

The screenshot shows a web browser window with the URL <https://help.almascience.org/kb/articles/how-can-i-estimate-the-peak-flux-density-per-synthesised-beam-using-flux-measurements-in-jy-or>. The page header includes the ALMA logo and 'Atacama Large Millimeter/submillimeter Array Observer Support'. A search bar with the text 'How can we help you today?' is present. The breadcrumb trail reads: 'Help... > Knowl... > ALMA Obse... > How can I estimate the Peak Flux Density per synthesised beam using flux measurements in Jy or K from other observatories?'. The article title is 'How can I estimate the Peak Flux Density per synthesised beam using flux measurements in Jy or K from other observatories?'. The author is Suzanna Randall, and the date created is Feb 27, 2015. The article content begins with: 'In the 'Expected Source Properties' section of the 'Field Setup' editor you are required to enter an estimate for the continuum and/or line peak flux density per synthesized beam for each source defined. These fluxes will guide your choice of requested...'

<https://help.almascience.org/kb/articles/how-can-i-estimate-the-peak-flux-density-per-synthesised-beam-using-flux-measurements-in-jy-or>

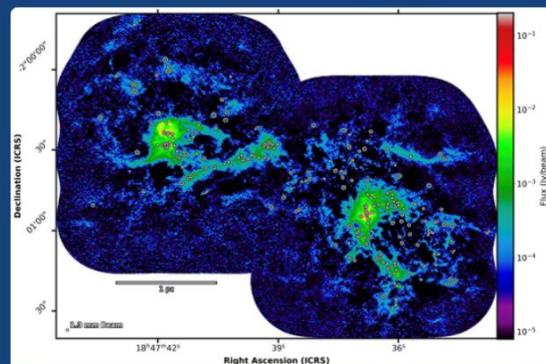


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Science Highlight

Top-heavy Core Mass function revealed by ALMA-IMF: a challenge to the IMF universality



The W43-MM2&MM3 protocluster cloud, as imaged at 1.3 mm by the ALMA 12 m array. White ellipses outline the size of the 208 compact cores of few thousand AU size extracted by the core extraction algorithm getsf.

The ALMA-IMF Large Program aims to answer the longstanding question on whether the Initial Mass Function (IMF) inherits its shape from its core content, and more precisely the Core Mass Function (CMF). To do that, ALMA-IMF has targeted and imaged 15 high-mass star-forming regions in the nearby Milky Way (W43, W49, W51, W52, W53, W54, W55, W56, W57, W58, W59, W60, W61, W62, W63, W64, W65, W66, W67, W68, W69, W70, W71, W72, W73, W74, W75, W76, W77, W78, W79, W80, W81, W82, W83, W84, W85, W86, W87, W88, W89, W90, W91, W92, W93, W94, W95, W96, W97, W98, W99, W100, W101, W102, W103, W104, W105, W106, W107, W108, W109, W110, W111, W112, W113, W114, W115, W116, W117, W118, W119, W120, W121, W122, W123, W124, W125, W126, W127, W128, W129, W130, W131, W132, W133, W134, W135, W136, W137, W138, W139, W140, W141, W142, W143, W144, W145, W146, W147, W148, W149, W150, W151, W152, W153, W154, W155, W156, W157, W158, W159, W160, W161, W162, W163, W164, W165, W166, W167, W168, W169, W170, W171, W172, W173, W174, W175, W176, W177, W178, W179, W180, W181, W182, W183, W184, W185, W186, W187, W188, W189, W190, W191, W192, W193, W194, W195, W196, W197, W198, W199, W200, W201, W202, W203, W204, W205, W206, 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Atacama Large Millimeter/submillimeter Array

Observer Support

ALMA Science

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Knowledgebase



General (1)

- What Cycle 9 proposal issues and clarifications should I ...



ALMA Observing Tool (OT) (44)

- What do the time estimates in the summary PDF page g...

- My project requires good uv-coverage. How should I set ...

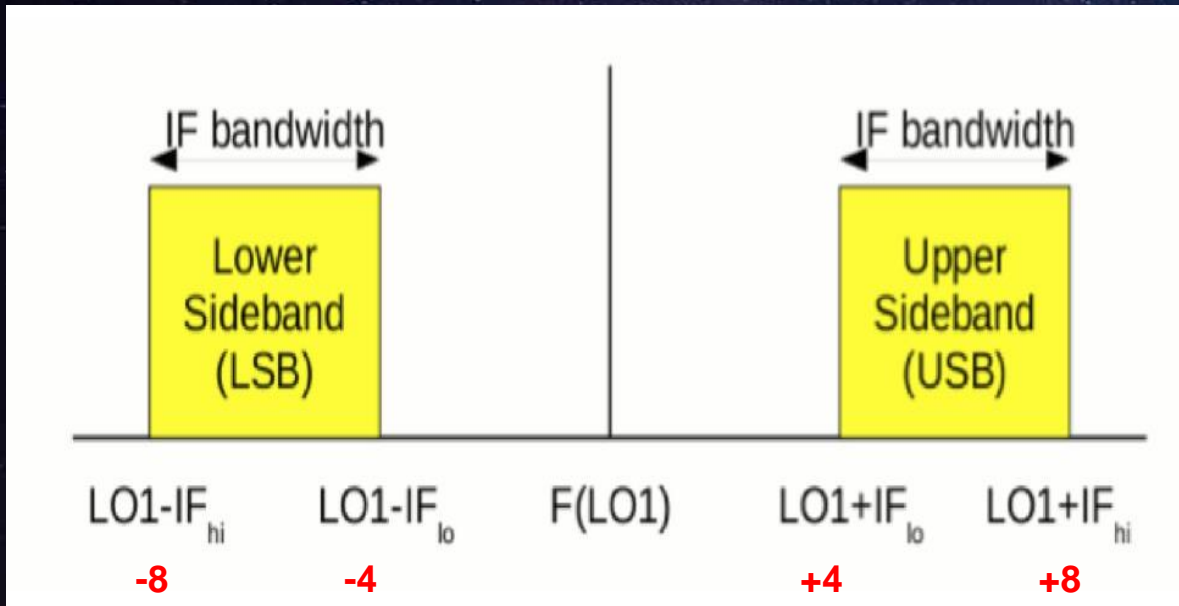
Important parameters III

- Spectral Setup
 - LSB and/or USB
 - 4 basebands (with 2GHz max. width)
 - 2 or 4 basebands in the one sideband

LSB/USB (<4GHz, ≤4 basebands)

Baseband (<2GHz, ≤4spws)

Spectral window(spw)



Band	Frequency range (GHz)	Wavelength range (mm)	IF range (GHz)	Type
1	35 – 50	8.5 – 6	4 – 12	SSB
3	84 – 116	3.6 – 2.6	4 – 8	2SB
4	125 – 163	2.4 – 1.8	4 – 8	2SB
5	158 – 211	1.9 – 1.4	4 – 8	2SB
6	211 – 275	1.4 – 1.1	4.5 – 10	2SB
7	275 – 373	1.1 – 0.8	4 – 8	2SB
8	385 – 500	0.78 – 0.60	4 – 8	2SB
9	602 – 720	0.50 – 0.42	4 – 12	DSB
10	787 – 950	0.38 – 0.32	4 – 12	DSB

Spws in a baseband

- one fraction 1
- two fraction $\frac{1}{2}$
- four fraction $\frac{1}{4}$
- one fraction $\frac{1}{2}$ + two fraction $\frac{1}{4}$

Spectral windows (SPW) should have the same resolution.

Bandwidth (MHz)	Channel spacing (MHz)	Spectral resolution (MHz)	Number of channels	Correlator mode	Bit Mode
1875	15.6	31.2	120	TDM	
938	0.976	1.952	1024	FDM	4x4 *
1875	0.488	0.976	3840	FDM	2x2
469	0.488	0.976	1024	FDM	4x4
938	0.244	0.488	3840	FDM	2x2
234	0.244	0.488	1024	FDM	4x4
469	0.122	0.244	3840	FDM	2x2
117	0.122	0.244	1024	FDM	4x4
234	0.061	0.122	3840	FDM	2x2
58.6	0.061	0.122	1024	FDM	4x4
117	0.0305	0.061	3840	FDM	2x2
58.6	0.0153	0.0305	3840	FDM	2x2

Table 5.1: Available spectral windows in multi-region mode (dual polarization). Each time the fraction is changed, the number of channels and bandwidth of a particular correlator mode is halved. Each row corresponds to a particular spectral resolution.

Spectral resolution $\propto 1/\text{fraction}$ for a given bandwidth

Fraction = 1		Fraction = 1/2		Fraction = 1/4	
Bandwidth (MHz)	# channels	Bandwidth (MHz)	# channels	Bandwidth (MHz)	# channels
1875	4096	937.5	2048	468.75	1024
937.5	4096	468.75	2048	234.375	1024
468.75	4096	234.375	2048	117.118	1024
234.375	4096	117.118	2048	58.594	1024
117.118	4096	58.594	2048	not available	
58.594	4096	not available		not available	



Procedures In OT

ALMA Observing Tool (Cycle 10 (Case1)) - Project

File Edit View Tool Search

1 D [Icons]

Project Structure

Editors

Proposal Program

Spectral Spatial Project

Unsubmitted Proposal

Project

Proposal

Principal Investigator

Select PI...

Main Project Information

Project


Assigned Priority

Project Code

None Assigned

Overview

Contextual Help

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

Phase I: Science Proposal

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graph LR; A[New Science Proposal] --> B[Create Science Goals]; B --> C[Validate Science Proposal]; C --> D[Submit Science Proposal]
```

Click on the overview steps to view the contextual help

```
graph LR; A[Importing And Exporting] --- B[Template Library] --- C[Need More Help?] --- D[View Phase 2 Steps]
```

ALMA Observing Tool (Cycle 10 (Phase1)) - Project

File Edit View Tool Search Help

1 D [Icons]

Project Structure

Proposal Program

Unsubmitted Proposal

Project

Proposal

Planned Observing

ScienceGoal (Science Goal)

General

Field Setup

Spectral Setup

Calibration Setup

Control and Performance

Technical Justification

Editors

Spectral Spatial Project

Principal Investigator

Select PI...

Main Project Information

Project

Assigned Priority

Project Code

None Assigned


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*
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Phase I: 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

Editors

	Spectral	Spatial	Proposal
1. Feature Extraction	Yes	Yes	Yes
2. Feature Fusion	Yes	Yes	Yes
3. Feature Refinement	Yes	Yes	Yes
4. Feature Aggregation	Yes	Yes	Yes
5. Feature Normalization	Yes	Yes	Yes
6. Feature Selection	Yes	Yes	Yes
7. Feature Visualization	Yes	Yes	Yes
8. Feature Interpretation	Yes	Yes	Yes
9. Feature Compression	Yes	Yes	Yes
10. Feature Augmentation	Yes	Yes	Yes
11. Feature Transfer	Yes	Yes	Yes
12. Feature Fusion	Yes	Yes	Yes
13. Feature Refinement	Yes	Yes	Yes
14. Feature Aggregation	Yes	Yes	Yes
15. Feature Normalization	Yes	Yes	Yes
16. Feature Selection	Yes	Yes	Yes
17. Feature Visualization	Yes	Yes	Yes
18. Feature Interpretation	Yes	Yes	Yes
19. Feature Compression	Yes	Yes	Yes
20. Feature Augmentation	Yes	Yes	Yes
21. Feature Transfer	Yes	Yes	Yes
22. Feature Fusion	Yes	Yes	Yes
23. Feature Refinement	Yes	Yes	Yes
24. Feature Aggregation	Yes	Yes	Yes
25. Feature Normalization	Yes	Yes	Yes
26. Feature Selection	Yes	Yes	Yes
27. Feature Visualization	Yes	Yes	Yes
28. Feature Interpretation	Yes	Yes	Yes
29. Feature Compression	Yes	Yes	Yes
30. Feature Augmentation	Yes	Yes	Yes
31. Feature Transfer	Yes	Yes	Yes
32. Feature Fusion	Yes	Yes	Yes
33. Feature Refinement	Yes	Yes	Yes
34. Feature Aggregation	Yes	Yes	Yes
35. Feature Normalization	Yes	Yes	Yes
36. Feature Selection	Yes	Yes	Yes
37. Feature Visualization	Yes	Yes	Yes
38. Feature Interpretation	Yes	Yes	Yes
39. Feature Compression	Yes	Yes	Yes
40. Feature Augmentation	Yes	Yes	Yes
41. Feature Transfer	Yes	Yes	Yes
42. Feature Fusion	Yes	Yes	Yes
43. Feature Refinement	Yes	Yes	Yes
44. Feature Aggregation	Yes	Yes	Yes
45. Feature Normalization	Yes	Yes	Yes
46. Feature Selection	Yes	Yes	Yes
47. Feature Visualization	Yes	Yes	Yes
48. Feature Interpretation	Yes	Yes	Yes
49. Feature Compression	Yes	Yes	Yes
50. Feature Augmentation	Yes	Yes	Yes
51. Feature Transfer	Yes	Yes	Yes
52. Feature Fusion	Yes	Yes	Yes
53. Feature Refinement	Yes	Yes	Yes
54. Feature Aggregation	Yes	Yes	Yes
55. Feature Normalization	Yes	Yes	Yes
56. Feature Selection	Yes	Yes	Yes
57. Feature Visualization	Yes	Yes	Yes
58. Feature Interpretation	Yes	Yes	Yes
59. Feature Compression	Yes	Yes	Yes
60. Feature Augmentation	Yes	Yes	Yes
61. Feature Transfer	Yes	Yes	Yes
62. Feature Fusion	Yes	Yes	Yes
63. Feature Refinement	Yes	Yes	Yes
64. Feature Aggregation	Yes	Yes	Yes
65. Feature Normalization	Yes	Yes	Yes
66. Feature Selection	Yes	Yes	Yes
67. Feature Visualization	Yes	Yes	Yes
68. Feature Interpretation	Yes	Yes	Yes
69. Feature Compression	Yes	Yes	Yes
70. Feature Augmentation	Yes	Yes	Yes
71. Feature Transfer	Yes	Yes	Yes
72. Feature Fusion	Yes	Yes	Yes
73. Feature Refinement	Yes	Yes	Yes
74. Feature Aggregation	Yes	Yes	Yes
75. Feature Normalization	Yes	Yes	Yes
76. Feature Selection	Yes	Yes	Yes
77. Feature Visualization	Yes	Yes	Yes
78. Feature Interpretation	Yes	Yes	Yes
79. Feature Compression	Yes	Yes	Yes
80. Feature Augmentation	Yes	Yes	Yes
81. Feature Transfer	Yes	Yes	Yes
82. Feature Fusion	Yes	Yes	Yes
83. Feature Refinement	Yes	Yes	Yes
84. Feature Aggregation	Yes	Yes	Yes
85. Feature Normalization	Yes	Yes	Yes
86. Feature Selection	Yes	Yes	Yes
87. Feature Visualization	Yes	Yes	Yes
88. Feature Interpretation	Yes	Yes	Yes
89. Feature Compression	Yes	Yes	Yes
90. Feature Augmentation	Yes	Yes	Yes
91. Feature Transfer	Yes	Yes	Yes
92. Feature Fusion	Yes	Yes	Yes
93. Feature Refinement	Yes	Yes	Yes
94. Feature Aggregation	Yes	Yes	Yes
95. Feature Normalization	Yes	Yes	Yes
96. Feature Selection	Yes	Yes	Yes
97. Feature Visualization	Yes	Yes	Yes
98. Feature Interpretation	Yes	Yes	Yes
99. Feature Compression	Yes	Yes	Yes
100. Feature Augmentation	Yes	Yes	Yes
101. Feature Transfer	Yes	Yes	Yes
102. Feature Fusion	Yes	Yes	Yes
103. Feature Refinement	Yes		

Proposal Information

Proposal Title

Proposal Cycle

Abstract
(max. 1200 characters)

Proposal Type

☐ Regular ☐ Target Of Opportunity ☐ VLBI
☐ Large Program ☐ Phased Array

Scientific Category

☐ Cosmology and the High Redshift Universe ☐ Galaxies and Galactic Nuclei ☐ ISM, star formation and astrochemistry
☐ Circumstellar disks, exoplanets and the solar system ☐ Stellar Evolution and the Sun

Please select one or two keywords

Student project ☐

Validation Validation History Log

Contextual Help

1. Please ensure you and your co-Is are registered with the [ALMA Science Portal](#)

Phase I: Science Proposal



ALMA Observing Tool (Cycle 10 (Phase1)) - Project

File Edit View Tool Search Help

Project Structure

- Proposal
- Program

Unsubmitted Proposal

- Project
 - Proposal
 - Planned Observing
 - ScienceGoal (Test)
 - General
 - Field Setup
 - Spectral Setup
 - Calibration Setup
 - Control and Performance
 - Technical Justification

Editors

Spectral Spatial Proposal

Proposal Information

Proposal Title

Proposal Cycle

2023.1

Display help from reference manual

ALMA Observing Tool Reference Manual

Contents Search Favourites

- Proposal Information
 - Investigators
 - Reviewer Information
 - Science Case
 - Management Plan
 - Duplicate observations
 - Observatory Use Only
- Phase 1 and Phase 2 Science Goals
 - General
 - Field Setup
 - Spectral Setup
 - Calibration Setup
 - Control and Performance
 - Technical Justification
- Phase 2 Program Scheduling Blocks

Next Up Previous Contents

Next: [Investigators](#) Up: [The Phase 1 Proposal](#) Previous: [Advanced Options](#) [Contents](#)

Proposal Information

- **Proposal Title:** The title of the project can be entered here and is limited to 120 characters.
- **Proposal Cycle:** This is formed from the proposal year and the submission period. If a non-submitted proposal created during a previous cycle is read into the OT the old proposal cycle will be shown, but this will be updated to the current cycle if the project is then submitted.
- **Abstract:** The abstract can be entered as plain text and is limited to 1200 characters.
- **Proposal Type:** Four projects types are currently available

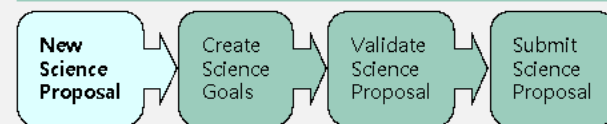
Please select one or two keywords

Overview

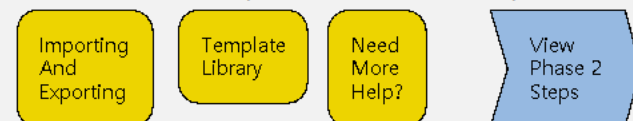
Contextual Help

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 I: Science Proposal



Click on the overview steps to view the contextual help



Editors

Spectral Spatial **Proposal**

Joint Proposals

Joint Proposals



 Main

Project Code



Remove Partner Observatory

Full name

Affiliation

Executive

Feedback

Validation History

	Description
--	-------------

Suggestion

Phase I: Science Proposal

- ```
graph LR; A[New Science Proposal] --> B[Create Science Goals]; B --> C[Validate Science Proposal]; C --> D[Submit Science Proposal]
```



## Editors

|                        | Spectral | Spatial | Proposal |
|------------------------|----------|---------|----------|
| 1. Feature Extraction  | ✓        | ✓       | ✓        |
| 2. Feature Fusion      | ✓        | ✓       | ✓        |
| 3. Feature Refinement  | ✓        | ✓       | ✓        |
| 4. Feature Aggregation | ✓        | ✓       | ✓        |
| 5. Feature Output      | ✓        | ✓       | ✓        |

## Joint Proposals

Joint Proposals ?

Is this a Joint Proposal? ☒ Yes ☐ No

Type of Joint Proposal ☒ Main ☐ Partner

| Observatory | Project Code | Requested Time |
|-------------|--------------|----------------|
| JWST        | N/A          | 0.00 h         |

Please provide the technical justification for the time requested on JWST as a joint proposal

Validation Validation History Log

[illegible]

### Phase I: Science Proposal

- 
- ```

graph LR
    A[New Science Proposal] --> B[Create Science Goals]
    B --> C[Validate Science Proposal]
    C --> D[Submit Science Proposal]
  
```

[Importing And Exporting](#)
[Template Library](#)
[Need More Help?](#)
[View Phase 2 Steps](#)

▼ Project

- Planned Observing

General

Field Setup

Spectral Setup

Calibration Setup

Control and Performance

- Technical Justification

Is this a Joint Proposal? ☒ Yes ☐ No

Type of Joint Proposal ☒ Main ☐ Partner

Observatory	Project Code	Requested Time
JWST	N/A	1.0

[Add Partner Observatory](#)

Remove Partner Observatory

Please provide the technical justification for the time requested on JWST as a joint proposal

Feedback

Validation

Validation History



Log

Description

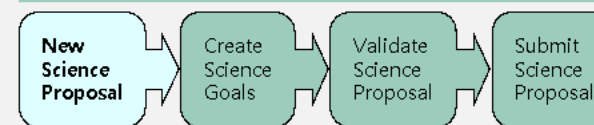
Suggestion

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

Phase I: Science Proposal



Click on the overview steps to view the contextual help

Importing And Exporting

Template
Library

Need
More
Help?

View
Phase 2
Steps

Editors

Spectral Spatial Proposal

Student project

1

Joint Proposals

Is this a Joint Proposal? ☒ Yes ☐ No

Type of Joint Proposal ☒ Main ☐ Partner

Observatory	Project Code	Requested Time
JWST	N/A	1.00 h

[Add Partner Observatory](#)

Remove Partner Observatory

Please provide the technical justification for the time requested on JWST as a joint proposal

over 50 characters!

Investigators

Feedback

Validation Validation History Log

Suggestion

Contextual Help

Phase I: Science Proposal


New Science Create Science Validate Science Submit Science

- Project
 - Proposal
 - Planned Observing
 - ScienceGoal (Science Goal)
 - General
 - Field Setup
 - Spectral Setup
 - Calibration Setup
 - Control and Performance
 - Technical Justification

☒ Yes ☐ No

☒ Main ☐ Partner

Observatory	Project Code	Requested Time
JWST	~ N/A	1.00 h
VLA	~ N/A	1.00 h



Remove Partner Observatory

Type	Full name	Email	Affiliation	ALMA ID	Executive	Reviewer
------	-----------	-------	-------------	---------	-----------	----------

Validation Validation History Log

ALMA Observing Tool (Cycle 10 (Phase1)) - Project

FileEditViewToolSearchHelp

1D

Project Structure

ProposalProgram

Unsubmitted Proposal

Project

Proposal

Planned Observing

ScienceGoal (Science Goal)

General

Field Setup

Spectral Setup

Calibration Setup

Control and Performance

Technical Justification

Editors

SpectralSpatialProposal

Reviewer Information

Please designate a reviewer who will participate in the distributed review process. The reviewer may be the PI of the proposal or one of the other investigators. A student (without a PhD) may serve as the reviewer only if they are the PI of the proposal and a mentor (with a PhD) is identified. The mentor does not need to be an investigator on the proposal.

Reviewers are requested to update their user profiles with combinations of scientific categories and keywords which describe their area(s) of expertise using the new 'Expertise' tab in <https://asa.alma.cl/UserRegistration/secure/updateAccount.jsp>. Available expertise information will be used in the distribution of proposal assignments.

Reviewer has a PhD? ☒ No ☐ Yes

Select Mentor

Mentor name

Mentor has a PhD? ☒ No ☐ Yes

Science Case

Please ensure that your science case is properly anonymized following instructions on the Science Portal

Science Case (Mandatory, PDF, 4 pages max.)

AttachDetachView

Duplicate observations

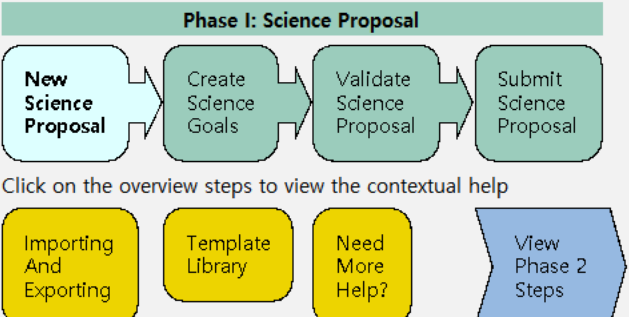
Briefly justify any new observations that duplicate archival data or accepted programs. Information regarding the ALMA Duplication Policy and how to search archival data and accepted programs can be found at: <http://almascience.org/proposing/duplications>

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.



Editors

Spectral	Spatial	Proposal

- Abide by the maximum number of Proposal Sets that are to be assigned for review to any individual (refer to the Proposer's Guide for more information).

- Update their user profiles with combinations of scientific categories and keywords which describe their area(s) or expertise using the new Expertise tab in the link below. Available expertise information will be used in the distribution of proposal assignments.

tab in the link below. Available expertise information will be used in the distribution of proposal assignments.

<https://asa.alma.cl/UserRegistration/secure/updateAccount.jsp>

Reviewer has a PhD? ☒ No ☐ Yes

	Mentor name		
--	-------------	--	--

Mentor has a PhD? ☒ No ☐ Yes

- Abide by the maximum number of Proposal Sets that are to be assigned for review to any individual (refer to the Proposer's Guide for more information).
- Update their user profiles with combinations of scientific categories and keywords which describe their area(s) of expertise using the new 'Expertise' tab in the link below. Available expertise information will be used in the distribution of proposal assignments.

<https://asa.alma.cl/UserRegistration/secure/updateAccount.jsp>

Reviewer has a PhD? ☒ No ☐ Yes

	Mentor name	
--	-------------	--

Mentor has a PhD? ☒ No ☐ Yes

Science Case	12 points (<15%)
--------------	------------------

Please ensure that your science case is properly anonymized following instructions on the Science Portal

Science Case (Mandatory, PDF, 4 pages max.)

Science Case (Mandatory, PDF, 4 pages max.)

Science Case (Mandatory, PDF, 4 pages max.)

Science Case (Mandatory, PDF, 4 pages max.)

Duplicate observations

Briefly justify any new observations that duplicate archival data or accepted programs.

Information regarding the ALMA Duplication Policy and how to search archival data and accepted programs can be found at:

<https://asa.alma.cl/UserRegistration/secure/updateAccount.jsp>

Observatory Use Only	
----------------------	--

Feedback

Validation Validation History Log

Validation Validation History Log

Validation Validation History Log

Contextual Help

Phase I: Science Proposal

1. Please ensure you and your co-Is are registered with the [ALMA Science Portal](#)

Contextual Help

Phase I: Science Proposal

1. Please ensure you and your co-Is are registered with the [ALMA Science Portal](#)

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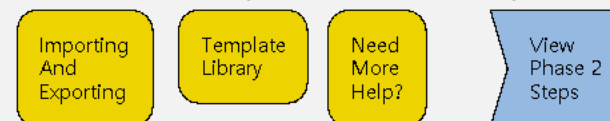
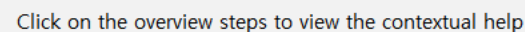
Editors

Spectral Spatial Planned Observing

Summary table of Science Goals. Double-clicking on a row will take you to that Science Goal

Contextual Help

- ### Phase I: Science Proposal





Project Structure

Proposal Program

Unsubmitted Proposal

- Project
 - Proposal
 - Planned Observing
 - ScienceGoal (Science Goal)
 - General
 - Field Setup
 - Spectral Setup
 - Calibration Setup
 - Control and Performance
 - Technical Justification

Editors

Spectral Spatial ScienceGoal (Science Goal)

General (Optional)

Science Goal Name Science Goal

Description

SinglePoint

Source

Source Name

Choose a Solar System Object? ☐

Name of object Unspecified

Resolve

System ICRS

Sexagesimal display? ☒

Parallax 0.00000

mas

Source Coordinates

RA 00:00:00.0000

PM RA 0.00000

mas/yr

Dec 00:00:00.000

PM Dec 0.00000

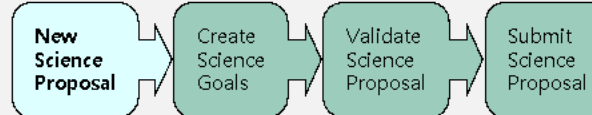
mas/yr

Overview

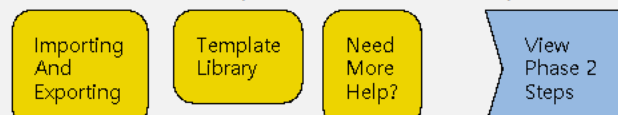
Contextual Help

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

Phase I: Science Proposal



Click on the overview steps to view the contextual help



ALMA Observing Tool (Cycle 10 (Phase1)) - Project

File Edit View Tool Search Help

1 D [Icons]

Project Structure

Unsubmitted Proposal

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Planned Observing

ScienceGoal

General

Field S

Spectr

Calibra

Contro

Techn

Editors

Spectral Spatial Planned Observing

Summary table of Science Goals. Double-clicking on a row will take you to that Science Goal

Science Goal	No. Sources	Band	Spec. Type	No. Spec. Win.	Pol.	Calibration Setup	Ang. Res.	Largest Scale	Rep. Freq.	Sens.
Test	1	7	Spectral line	3	Dual	System	0.015 arcsec	1.0 arcsec	345.795990 GHz	10 mJy

Cut Ctrl-X

Copy Ctrl-C

Paste Ctrl-V

New Science Goal

Clone node

Show Printable Summary of all Science Goals

Generate a PDF of Whole Proposal

Display Project Time Summary

Expand all Ctrl-Z

Collapse all

Find previous Alt-Up

Find next Alt-Down

Delete Delete

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 I: 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

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Need More Help?

View Phase 2 Steps



Project Structure

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 - ScienceGoal (Copy of Test)
 - General
 - Field Setup
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 - Calibration Setup
 - Control and Performance
 - Technical Justification



Overview



Editors

Spectral Spatial Planned Observing

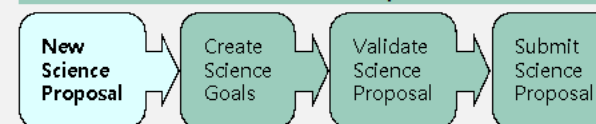
Summary table of Science Goals. Double-clicking on a row will take you to that Science Goal

Science Goal	No. Sources	Band	Spec. Type	No. Spec. Win.	Pol.	Calibration Setup	Ang. Res.	Largest Scale	Rep. Freq.	Sens.
Test	1	7	Spectral line	3	Dual	System	0.015 arcsec	1.0 arcsec	345.795990 GHz	10 mJy

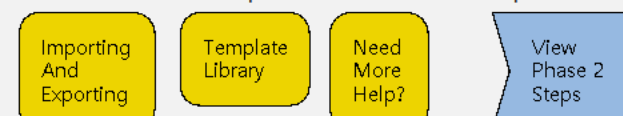
Contextual Help

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

Phase I: Science Proposal



Click on the overview steps to view the contextual help



ALMA Observing Tool (Cycle 10 (Phase1)) - Project

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Spectral Setup
Calibration Setup
Control and Performance
Technical Justification

Editors

Spectral
Spatial
Field Setup

Spatial Image

TW Hya

Source

Source Name
TW Hya

Resolve

Choose a Solar System Object?

Name of object
Unspecified

Get source details from SIMBAD or NED

Source Coordinates

System
ICRS
Sexagesimal display?

Parallax
0.00000
mas

PM RA
0.00000
mas/yr

PM Dec
0.00000
mas/yr

Source Radial Velocity
0.000
km/s
Isrk
z
0.000000000
Doppler Type
RADIO

Target Type

Individual Pointing(s)
1 Rectangular Field

Expected Source Properties

Peak Continuum Flux Density per Synthesized Beam
0.00000
Jy

Continuum Linear Polarization
0.0
per cent

Continuum Circular Polarization
0.0
per cent

Peak Line Flux Density per Synthesized Beam
0.00000
Jy

Line Width
0.00000
km/s

Line Linear Polarization
0.0
per cent

Line Circular Polarization
0.0
per cent

Overview

Contextual Help

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

Phase I: 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

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Need More Help?

View Phase 2 Steps

ALMA Observing Tool (Cycle 10 (Phase1)) - Project

File Edit View Tool Search Help

1 D [Icons]

Project Structure

Editors

Spectral Spatial Field Setup

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Search

Overview

Spatial Image

TW Hya

Source

Source Name

TW Hya

Choose a Solar System Object?

Name of object

Unspecified

Resolve

Name Resolver Results

simbad.u-strasbg.fr (SIMBAD) found 1 match for the object 'TW Hya'.

Name / Alias	Position		Proper Motion		Velocity
	RA	Dec	RA	Dec	
V* TW Hya	11:01:51.9053	-34:42:17.033	-68.309 mas/yr	-13.9 mas/yr	12.335 km/s

Cancel Select

Parallax

0.00000

mas

PM RA

0.00000

mas/yr

PM Dec

0.00000

mas/yr

z

0.000000000

Doppler Type

RADIO

Angular Field

ed Beam

0.00000

Jy

0.0

per cent

0.0

per cent

0.00000

Jy

0.00000

km/s

0.0

per cent

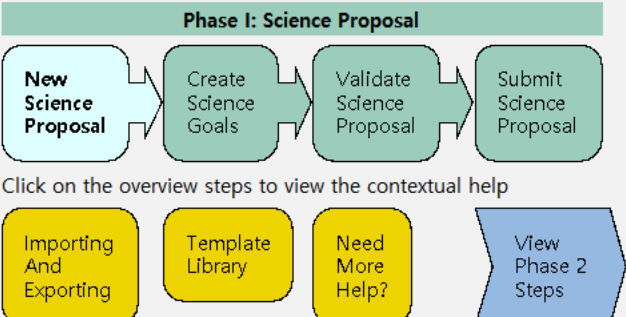
0.0

per cent

- 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.



You should check that the "Resolved information" is correct!!!

Editors

Spectral Spatial Field Setup

Source

Source Name TW Hya Resolve

Choose a Solar System Object? ☐ Name of object Unspecified

System ICRS Sexagesimal display? ☒

Source Coordinates

RA 11:01:52.0913

Dec -34:42:15.750

Parallax 16.62890 mas

PM RA -68.30900 mas/yr

PM Dec -13.90000 mas/yr

Source Radial Velocity 12.335 km/s hel z 0.000041146 Doppler Type RELATIVISTIC

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

Expected Source Properties

Peak Continuum Flux Density per Synthesized Beam 50.00000 mJy

Continuum Linear Polarization 0.0 per cent

Continuum Circular Polarization 0.0 per cent

Peak Line Flux Density per Synthesized Beam 10.00000 mJy

Line Width 1.00000 km/s

Line Linear Polarization 0.0 per cent

Line Circular Polarization 0.0 per cent

Field Centre Coordinates

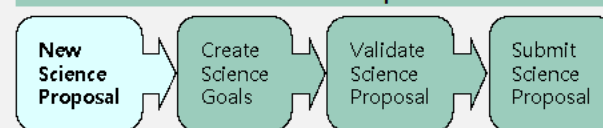
Image Filename unit1Wjsky3WcacheWjsky12077043586718440107.fits

FOV Parameters

Contextual Help

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

Phase I: Science Proposal



Click on the overview steps to view the contextual help



ALMA Observing Tool (Cycle 10 (Phase1)) - Project

File Edit View Tool Search Help

Project Structure

Editors

Proposal Program

Unsubmitted Proposal

Project

Proposal

Planned Observing

ScienceGoal (Test)

General

Field Setup

Spectral Setup

Calibration Setup

Control and Performance

Technical Justification

ScienceGoal (Copy of Test)

General

Field Setup

Spectral Setup

Calibration Setup

Control and Performance

Technical Justification

ScienceGoal (Copy of Test)

General

Field Setup

Spectral Setup

Calibration Setup

Control and Performance

Technical Justification

FOV Parameters

Source

Source Name TW Hya

Choose a Solar System Object? ☐

Name of object Unspecified

Resolve

ICRS

System ICRS

Sexagesimal display? ☒

Parallax 16.62890 mas

PM RA -68.30900 mas/yr

PM Dec -13.90000 mas/yr

RA 11:01:52.0913

Dec -34:42:15.750

12.335 km/s

hel

lsrk

bar

lsrk

topo

hel

Doppler Type RELATIVISTIC

Continuum Flux Density per Synthesized Beam 5

Continuum Linear Polarization 0

Continuum Circular Polarization 0.0 per cent

Peak Line Flux Density per Synthesized Beam 10.00000 mJy

Line Width 1.00000 km/s

Line Linear Polarization 0.0 per cent

Line Circular Polarization 0.0 per cent

Field Centre Coordinates

Image Filename unitW.jsky3WcacheWjsky12077043586718440107.fits

11:01:46.783, -34:43:09.24 (J2000)

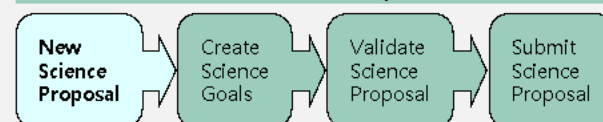
3x 361.2, 242.8 4039.0

Overview

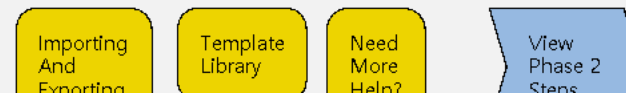
Contextual Help

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

Phase I: Science Proposal



Click on the overview steps to view the contextual help



ALMA Observing Tool (Cycle 10 (Phase1)) - Project

File Edit View Tool Search Help

Project Structure

Editors

Proposal Program

Unsubmitted Proposal

Project

Proposal

Planned Observing

ScienceGoal (Test)

General

Field Setup

Spectral Setup

Calibration Setup

Control and Performance

Technical Justification

ScienceGoal (Copy of Test)

General

Field Setup

Spectral Setup

Calibration Setup

Control and Performance

Technical Justification

ScienceGoal (Copy of Test)

General

Field Setup

Spectral Setup

Calibration Setup

Control and Performance

Technical Justification

Image File Name

unit1W.jsky3WcacheWjsky12077043586718440107.fits

FOV Parameters

Source

Source Name

TW Hya

Choose a Solar System Object?

Name of object

Unspecified

Resolve

System

ICRS

Sexagesimal display?

Parallax

16.62890

mas

Source Coordinates

RA

11:01:52.0913

Dec

-34:42:15.750

PM RA

-68.30900

mas/yr

PM Dec

-13.90000

mas/yr

Source Radial Velocity

12.335

km/s

hel

z

0.000041146

Doppler Type

RELATIVISTIC

Target Type

Individual Pointing(s)

1 Rectangular Field

Expected Source Properties

Peak Continuum Flux Density per Synthesized Beam

50.00000

mJy

Continuum Linear Polarization

0.0

per cent

Continuum Circular Polarization

0.0

per cent

Peak Line Flux Density per Synthesized Beam

10.00000

mJy

Line Width

1.00000

km/s

Line Linear Polarization

0.0

per cent

Line Circular Polarization

0.0

per cent

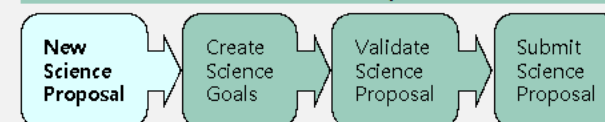
Field Centre Coordinates

You should describe how to get these values in T.J.

Contextual Help

- Please ensure you and your co-Is are registered with the [ALMA Science Portal](#)
- Create a new proposal by either:
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Phase I: Science Proposal







Click on the overview steps to view the contextual help



Editors

Spectral Spatial Field Setup

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				3x	359.5, 251.2	4124.0
---	---	---	---	----	--------------	--------

11:01:46.941 -34:43:00.91 (J2000)

Image Filename: unit\\Wick\\2\\W\\cache\\Wick\\12077043586718440107.fits

image filename	unltdw.jsky5wcdacnfwjsky12071045360710440107.mts
----------------	--

FOV Parameters

Representative Frequency (Sky)	345.782 GHz
--------------------------------	-------------

Array Type	<input checked="" type="radio"/> 12m
------------	--------------------------------------

Antenna Beamsize (HPBW)	16.840 arcsec
-------------------------	---------------

Show Antenna Beamsize ☒


SHOW Antenna Beamsize 

Image Query

Page 10 of 10

Image Server Digitized Sky (Version II) at ESO

Image Size(arcmin)	100	Query
--------------------	-----	-------

image size(px/min)	100	quality
--------------------	-----	---------

Phase I: Science Proposal

- ```
graph LR; A[New Science Proposal] --> B[Create Science Goals]; B --> C[Validate Science Proposal]; C --> D[Submit Science Proposal];
```

[Importing And Exporting](#)
[Template Library](#)
[Need More Help?](#)
[View Phase 2 Steps](#)



## Project Structure

Proposal Program

## Unsubmitted Proposal

- ▼ Project
  - ▼ Proposal
    - ▼ Planned Observing
      - ▼ ScienceGoal (Test)
        - General
        - Field Setup
        - Spectral Setup**
        - Calibration Setup
        - Control and Performance
        - Technical Justification

## Editors

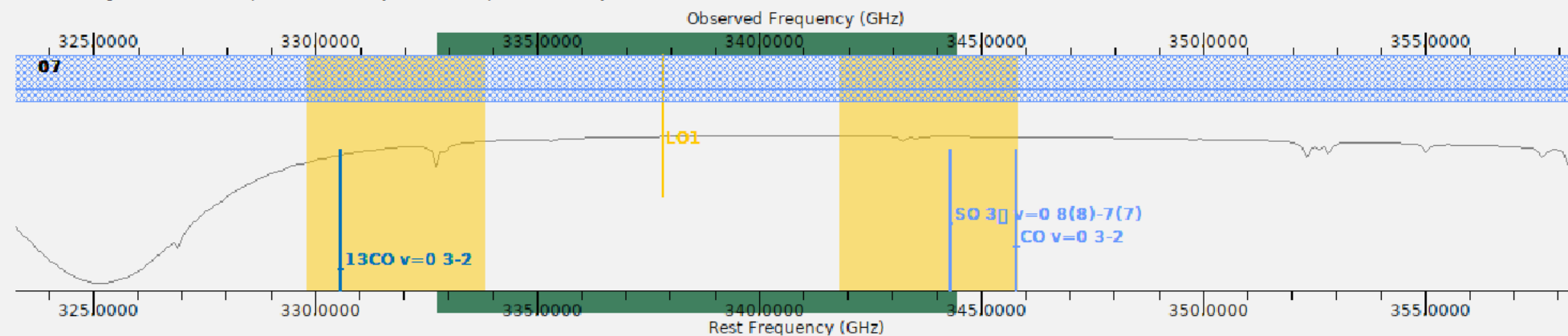
Spectral Spatial Spectral Setup

## Visualisation

In the table below, it is possible to define up to 16 spectral windows, 4 per baseband as long as the total Fraction per baseband is no more than 1. Each baseband is 2GHz wide and can be separately configured i.e. each spectral window can have a different bandwidth and resolution. Note that for bands 3 to 8, it is not possible to put 3 basebands in one sideband and the fourth one in the other.

Left/right click to zoom in/out, grab sliding bar to pan

Note: Moving LO1 here is for experimentation only - actual setup determined by the windows



Overlays: ☒ Receiver Bands ☒ Transmission ☒ DSB Image ☐ Spectral Lines Select Lines to Overlay

Water Vapour Column Density: ☒ Automatic Ch Toggle receiver bands overlay (4th Octile) ▼

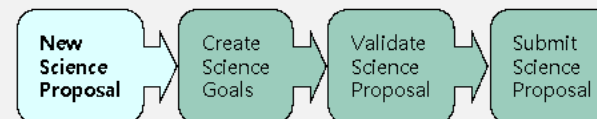
Viewport: Pan to Spectral Window Zoom to Band Reset

## Overview

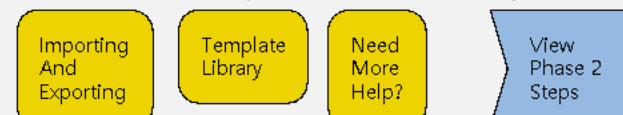
## Contextual Help

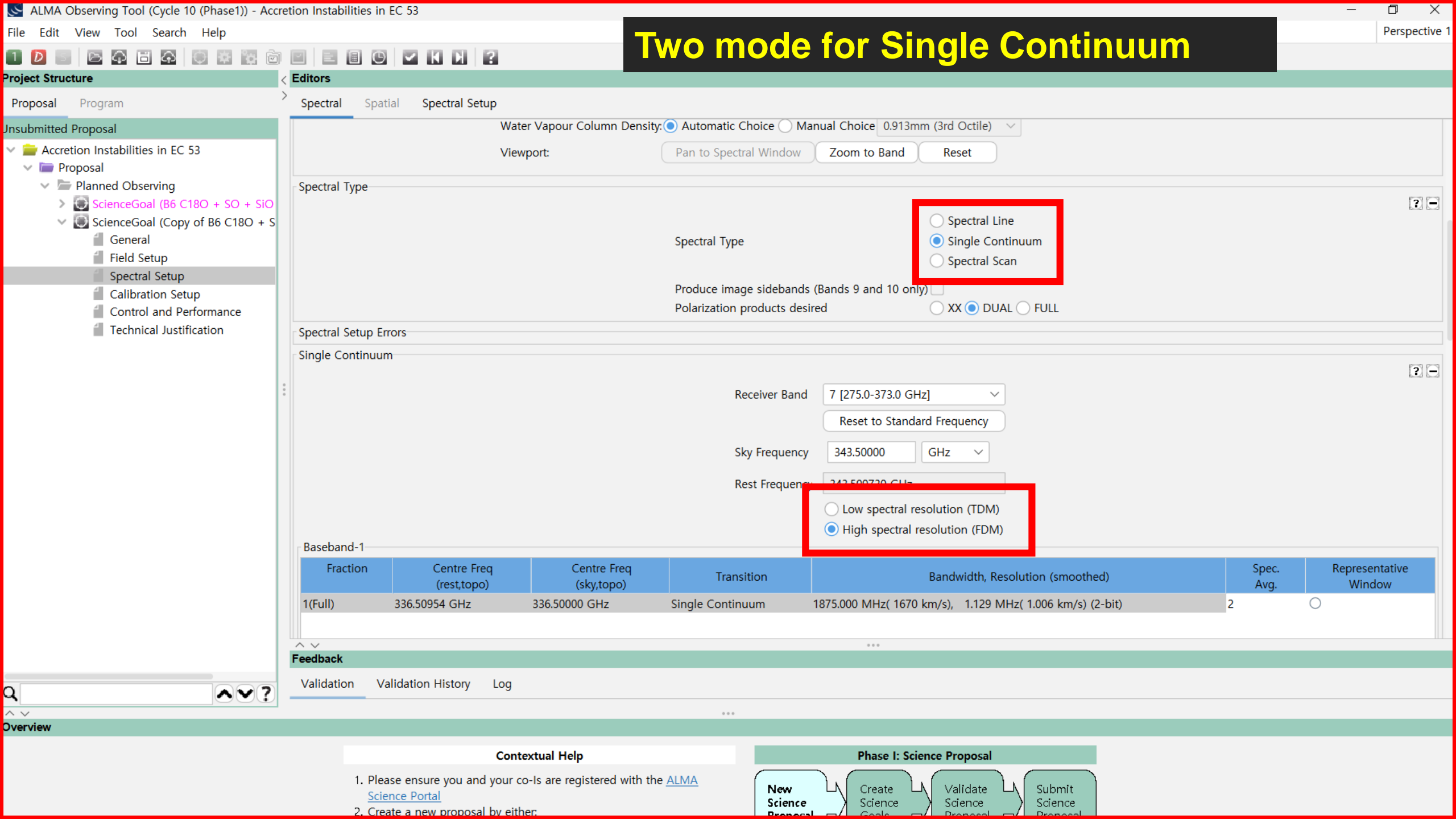
1. Please ensure you and your co-Is are registered with the [ALMA Science Portal](#)
2. Create a new proposal by either:
  - Selecting *File > New Proposal*
  - Clicking on the **1** icon in the toolbar
  - Or clicking on this [link](#)
3. Click on the **proposal** tree node and complete the relevant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

## Phase I: Science Proposal



Click on the overview steps to view the contextual help









Project Structure  
Proposal

Unsubmitted Projects  
Test

Frequency Filters

ALMA Band

Sky Frequency (GHz)

Min 31.3 Max 950

Receiver/Back End Configuration

All lines  
Potentially selectable lines  
Lines in defined spws

Filtering unobservable lines

Upper-state Energy (K)

Min 0 Max 0

Molecule Filter / Environment

Show all atoms and molecules

all atoms and molecules

most common molecules

hot cores  
dark clouds  
diffuse clouds  
AGBs, PPNs and PNs  
comets  
planets  
extra-Galactic

### Transitions matching your filter settings:

(double-click column header for primary sort, single-click subsequent columns for secondary sorting. Single clicks will reverse sort order of already selected columns.)

| Transition ▲                      | Description    | Rest Frequency ▲ | Sky Frequency  | Upper-state Energy | Lovas Intensity | Sij $\mu^2$             | Catalog |
|-----------------------------------|----------------|------------------|----------------|--------------------|-----------------|-------------------------|---------|
| CH3CN v=0 18(4)-17(4), F=17-16    | Methyl Cyanide | 330.969808 GHz   | 330.956190 GHz | 265.219 K          | 1.38            | 496.315 D <sup>2</sup>  | Offline |
| CH3CN v=0 18(4)-17(4), F=17-18    | Methyl Cyanide | 330.969812 GHz   | 330.956195 GHz | 265.219 K          | 1.38            | 0.001 D <sup>2</sup>    | Offline |
| CH3CN v=0 18(4)-17(4), F=19-18    | Methyl Cyanide | 330.969815 GHz   | 330.956198 GHz | 265.219 K          | 1.38            | 554.827 D <sup>2</sup>  | Offline |
| CH3CN v8=1 J =18-17, K = -12 --12 | Methyl Cyanide | 330.977817 GHz   | 330.964199 GHz | 1861.315 K         |                 | 286.041 D <sup>2</sup>  | Offline |
| CH3CN v8=1 J =38-38, K =10-8      | Methyl Cyanide | 330.988159 GHz   | 330.974541 GHz | 1758.834 K         |                 | 0.017 D <sup>2</sup>    | Offline |
| CH3CN v8=1 J =18-17, K =14-14     | Methyl Cyanide | 331.009015 GHz   | 330.995396 GHz | 1881.454 K         |                 | 203.422 D <sup>2</sup>  | Offline |
| CH3CN v=0 18(3)-17(3), F=18-17    | Methyl Cyanide | 331.014296 GHz   | 331.000677 GHz | 215.24 K           | 1.38            | 1073.219 D <sup>2</sup> | Offline |
| CH3CN v=0 18(3)-17(3), F=17-16    | Methyl Cyanide | 331.014306 GHz   | 331.000687 GHz | 215.24 K           | 1.38            | 1015.053 D <sup>2</sup> | Offline |
| CH3CN v=0 18(3)-17(3), F=19-18    | Methyl Cyanide | 331.014315 GHz   | 331.000695 GHz | 215.24 K           | 1.38            | 1134.981 D <sup>2</sup> | Offline |
| CH3CN v=0 18(3)-17(3), F=17-18    | Methyl Cyanide | 331.014315 GHz   | 331.000695 GHz | 215.24 K           | 1.38            | 0.003 D <sup>2</sup>    | Offline |
| CH3CN v=0 18(2)-17(2), F=18-17    | Methyl Cyanide | 331.046102 GHz   | 331.032481 GHz | 179.533 K          | 1.6             | 545.146 D <sup>2</sup>  | Offline |
| CH3CN v=0 18(2)-17(2), F=17-16    | Methyl Cyanide | 331.046104 GHz   | 331.032483 GHz | 179.533 K          | 1.6             | 515.6 D <sup>2</sup>    | Offline |
| CH3CN v=0 18(2)-17(2), F=19-18    | Methyl Cyanide | 331.046113 GHz   | 331.032492 GHz | 179.533 K          | 1.6             | 576.385 D <sup>2</sup>  | Offline |
| CH3CN v=0 18(2)-17(2), F=17-18    | Methyl Cyanide | 331.046115 GHz   | 331.032494 GHz | 179.533 K          | 1.6             | 0.001 D <sup>2</sup>    | Offline |
| CH3CN v=0 18(1)-17(1), F=17-16    | Methyl Cyanide | 331.065188 GHz   | 331.051566 GHz | 158.106 K          | 1.64            | 520.407 D <sup>2</sup>  | Offline |
| CH3CN v=0 18(1)-17(1), F=18-17    | Methyl Cyanide | 331.065191 GHz   | 331.051570 GHz | 158.106 K          | 1.64            | 550.355 D <sup>2</sup>  | Offline |
| CH3CN v=0 18(1)-17(1), F=19-18    | Methyl Cyanide | 331.065197 GHz   | 331.051576 GHz | 158.106 K          | 1.64            | 581.893 D <sup>2</sup>  | Offline |
| CH3CN v=0 18(1)-17(1), F=17-18    | Methyl Cyanide | 331.065201 GHz   | 331.051579 GHz | 158.106 K          | 1.64            | 0.001 D <sup>2</sup>    | Offline |
| CH3CN v=0 18(0)-17(0), F=17-18    | Methyl Cyanide | 331.071563 GHz   | 331.057942 GHz | 150.963 K          | 1.77            | 0.001 D <sup>2</sup>    | Offline |

Add to spectral window list

### Spectral windows in this baseband (maximum of four)

| Transition ▲ | Description | Rest Frequency ▲ | Sky Frequency |
|--------------|-------------|------------------|---------------|
|              |             |                  |               |
|              |             |                  |               |
|              |             |                  |               |

Remove spectral window(s)

Cancel Ok

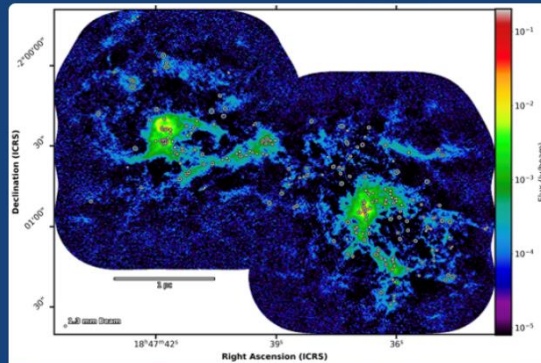


Atacama Large Millimeter/submillimeter Array  
In search of our Cosmic Origins

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

## Science Highlight

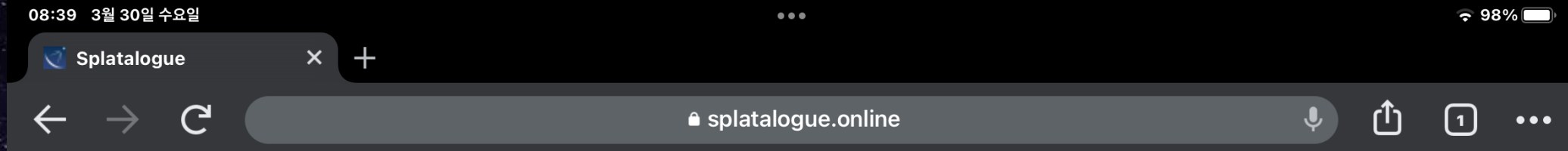
Top-heavy Core Mass function revealed by ALMA-IMF: a challenge to the IMF universality



The W43-MM2&MM3 protocluster cloud, as imaged at 1.3 mm by the ALMA 12 m array. White ellipses outline the size of the 208 compact cores of few thousand AU size extracted by the core extraction algorithm getsf.

The ALMA-IMF Large Program aims to answer the longstanding question on whether the Initial Mass Function (IMF) inherits its shape from its core content, and more precisely the Core Mass Function (CMF). To do that, ALMA-IMF has targeted and imaged 15 high-mass star-forming regions in the nearby Milky Way (W43, W49, W51, W52, W53, W54, W55, W56, W57, W58, W59, W60, W61, W62, W63, W64, W65, W66, W67, W68, W69, W70, W71, W72, W73, W74, W75, W76, W77, W78, W79, W80, W81, W82, W83, W84, W85, W86, W87, W88, W89, W90, W91, W92, W93, W94, W95, W96, W97, W98, W99, W100, W101, W102, W103, W104, W105, W106, W107, W108, W109, W110, W111, W112, W113, W114, W115, W116, W117, W118, W119, W120, W121, W122, W123, W124, W125, W126, W127, W128, W129, W130, W131, W132, W133, W134, W135, W136, W137, W138, W139, W140, W141, W142, W143, W144, W145, W146, W147, W148, W149, W150, W151, W152, W153, W154, W155, W156, W157, W158, W159, W160, W161, W162, W163, W164, W165, W166, W167, W168, W169, W170, W171, W172, W173, W174, W175, W176, W177, W178, W179, W180, W181, W182, W183, W184, W185, W186, W187, W188, W189, W190, W191, W192, W193, W194, W195, W196, W197, W198, W199, W200, W201, W202, W203, W204, W205, W206, 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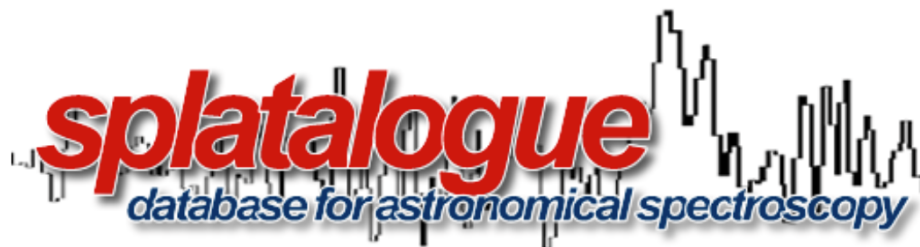


Basic

Advanced

## Quick Picker

- |                                                       |                                                       |
|-------------------------------------------------------|-------------------------------------------------------|
| <input type="checkbox"/> CO $v = 0$                   | <input type="checkbox"/> $^{13}\text{CO } v = 0$      |
| <input type="checkbox"/> C $^{17}\text{O}$            | <input type="checkbox"/> C $^{18}\text{O}$            |
| <input type="checkbox"/> $^{13}\text{C}^{17}\text{O}$ | <input type="checkbox"/> $^{13}\text{C}^{18}\text{O}$ |
| <input type="checkbox"/> HCN $v = 0$                  | <input type="checkbox"/> HNC $v = 0$                  |
| <input type="checkbox"/> H $^{13}\text{CN } v = 0$    | <input type="checkbox"/> HC $^{15}\text{N } v = 0$    |
| <input type="checkbox"/> DCN $v = 0$                  | <input type="checkbox"/> HCO $^+ v = 0$               |
| <input type="checkbox"/> CS                           | <input type="checkbox"/> CH $_3\text{OH } v_t = 0$    |
| <input type="checkbox"/> NH $_3$                      | <input type="checkbox"/> C I                          |
| <input type="checkbox"/> C II                         | <input type="checkbox"/> O I                          |
| <input type="checkbox"/> O III                        | <input type="checkbox"/> N II                         |
| <input type="checkbox"/> H $_2\text{O } v = 0$        | <input type="checkbox"/> xxxxHDO                      |



Search:

(ex: ammonia, carbon monoxide, ethynyl, hydroxyl, methanol, water, etc.)

Telescope Bands:

Any

...

Frequency:

Min

Max

☐ MHz
 ☒ GHz

Search

## Astronomical Filters

- ☐ 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:

**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 range in GHz or MHz.

**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



## Transition Filter

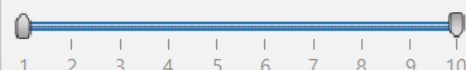
co v=0\*

e.g. CO\*2-1\* or \*oxide\*

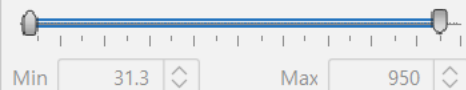
☒ Include description

## Frequency Filters

ALMA Band



Sky Frequency (GHz)



## Receiver/Back End Configuration

☐ All lines☒ Potentially selectable lines☐ Lines in defined spws☒ Filtering unobservable lines

## Upper-state Energy (K)

Min 0 Max 0

## Molecule Filter / Environment

Show all atoms and molecules

Can't find the transition you're looking for in the offline pool? Find more in the online Splatalogue.

Search Online

Reset Filters

## Transitions matching your filter settings:

(double-click column header for primary sort, single-click subsequent columns for secondary sorting. Single clicks will reverse sort order of already selected columns.)

| Transition ▲ | Description     | Rest Freque... ▲ | Sky Frequency  | Upper-state Ene... | Lovas Inten... | Sij $\mu^2$          | Catalo... |
|--------------|-----------------|------------------|----------------|--------------------|----------------|----------------------|-----------|
| CO v=0 3-2   | Carbon Monoxide | 345.795990 GHz   | 345.781762 GHz | 33.192 K           | 70             | 0.036 D <sup>2</sup> | Offline   |

click 1

Add to spectral window list

click 2

## Spectral windows in this baseband (maximum of four)

| Transition ▲ | Description     | Rest Frequency ▲ | Sky Frequency  |
|--------------|-----------------|------------------|----------------|
| CO v=0 3-2   | Carbon Monoxide | 345.795990 GHz   | 345.781762 GHz |

Remove spectral window(s)

click 3

Cancel

Ok

3. Click on the [proposal](#) tree node and complete the relevant fields.

Importing And Exporting

Template Library

Need More Help?

View Phase 2 Steps

Accept selected lines and close the dialog



## Project Structure

Proposal Program

## Unsubmitted Proposal

- Project
  - Proposal
    - Planned Observing
      - ScienceGoal (Test)
        - General
        - Field Setup
        - Spectral Setup
        - Calibration Setup
        - Control and Performance
        - Technical Justification

## Editors

Spectral Spatial Spectral Setup

Spectral type ☐ Single Continuum ☐ Spectral Scan

Produce image sidebands (Bands 9 and 10 only) ☐

Polarization products desired ☐ XX ☒ DUAL ☐ FULL

## Spectral Setup Errors

## Spectral Line

## Baseband-1

| Fraction | Centre Freq (rest, hel) | Centre Freq (sky, hel) | Transition | Bandwidth, Resolution (smoothed)                | Spec. Avg. | Representative Window |
|----------|-------------------------|------------------------|------------|-------------------------------------------------|------------|-----------------------|
| 1(Full)  | 345.79599 GHz           | 345.78176 GHz          | CO v=0 3-2 | 117.188 MHz( 102 km/s), 70.557 kHz( 0.061 km/s) | 2          |                       |
| 1(Full)  |                         |                        |            |                                                 |            |                       |
| 1/2      |                         |                        |            |                                                 |            |                       |
| 1/4      |                         |                        |            |                                                 |            |                       |

Add spectral window centred on a spectral line

Add spectral window manually

Delete

☐ Show image spectral windows

## Baseband-2

Add spectral window centred on a spectral line

Add spectral window manually

Delete

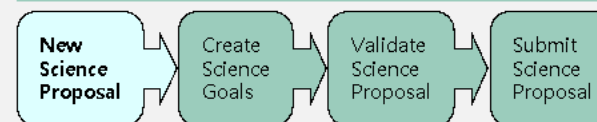
☐ Show image spectral windows

## Overview

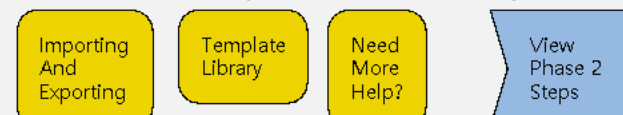
## Contextual Help

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

## Phase I: Science Proposal












Click on the overview steps to view the contextual help





## Editors

| Spectral                                                                          | Spatial                                                                           | Spectral Setup                                                                    |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|  |  |  |
|  |  |  |
|  |  |  |

9. 1. 4

- Baseband-4

1(Full) 230.53800 GHz 230.54486 GHz CO v=0 2-1

Add spectral window centred on a spectral line

Representative Frequency

The representative frequency is used in conjunction with observing time and to set the size of the antenna beam so that it does not fall in the centre of the chosen spectral window, its frequency is shown in the targets table below.

234.375 MHz( 305 km/s), 141.113 kHz( 0.183 km/s) (2-bit) 2

58.594 MHz( 76 km/s), 141.113 kHz( 0.183 km/s) (4-bit)

117.188 MHz( 152 km/s), 70.557 kHz( 0.092 km/s) (2-bit)

117.188 MHz( 152 km/s), 282.227 kHz( 0.367 km/s) (4-bit)

234.375 MHz( 305 km/s), 141.113 kHz( 0.183 km/s) (2-bit)

234.375 MHz( 305 km/s), 564.453 kHz( 0.734 km/s) (4-bit)

468.750 MHz( 610 km/s), 282.227 kHz( 0.367 km/s) (2-bit)

468.750 MHz( 610 km/s), 1.129 MHz( 1.468 km/s) (4-bit)

937.500 MHz( 1219 km/s), 564.453 kHz( 0.734 km/s) (2-bit)

937.500 MHz( 1219 km/s), 2.258 MHz( 2.936 km/s) (4-bit)

1875.000 MHz( 2438 km/s), 1.129 MHz( 1.468 km/s) (2-bit)

1875.000 MHz( 2438 km/s), 36.125 MHz(46.976 km/s) (2-bit)

Rest Frequencies

Please set the rest frequencies of spectral lines that will be observed. These will be used during data reduction to set the velocity scale and will enhance the ALMA Science Archive. We recommend that this be done once the spectral setup is fully defined.

## Feedback

Validation    Validation History    Log

|  | Description | Suggestion |
|--|-------------|------------|
|  |             |            |

### Phase I: Science Proposal

## Project Structure

Proposal

Unsubmitted Projects

Project

Proposals

Frequency Filters

ALMA Band

Sky Frequency (GHz)

Min

Max

Receiver/Back End Configuration

All lines

Potentially selectable lines

Lines in defined spws

Filtering unobservable lines

Upper-state Energy (K)

Min

Max

Molecule Filter / Environment

Show

all atoms and molecules

Can't find the transition you're looking for in the offline pool? Find more in the online Splatalogue.

Search Online

Reset Filters

Overview

## Transition Filter

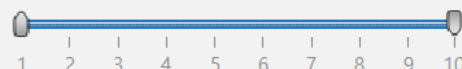
\*

e.g. CO\*2-1\* or \*oxide\*

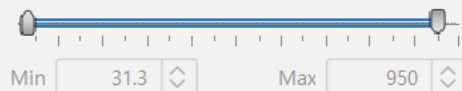
☒ Include description

## Frequency Filters

ALMA Band



Sky Frequency (GHz)



## Receiver/Back End Configuration

☐ All lines☒ Potentially selectable lines☐ Lines in defined spws☒ Filtering unobservable lines

## Upper-state Energy (K)

☐ Min 0 Max 0

## Molecule Filter / Environment

Show all atoms and molecules

Can't find the transition you're looking for in the offline pool? Find more in the online Splatalogue.

Search Online

Reset Filters

## Transitions matching your filter settings:

(double-click column header for primary sort, single-click subsequent columns for secondary sorting. Single clicks will reverse sort order of already selected columns.)

| Transition ▲          | Description    | Rest Frequency ▼ | Sky Frequency ▲ | Upper-state Energy | Lovas Intensity ▼ | Sij $\mu^2$             | Catalog |
|-----------------------|----------------|------------------|-----------------|--------------------|-------------------|-------------------------|---------|
| 13CH3OH v t=0 5 (...) | Methanol       | 349.222565 GHz   | 349.208196 GHz  | 56.339 K           |                   | 0 D <sup>2</sup>        | Offline |
| CH3CN v=0 19(6)-1...  | Methyl Cyanide | 349.212338 GHz   | 349.197970 GHz  | 424.7 K            | 0.71              | 1106.34 D <sup>2</sup>  | Offline |
| CH3CN v=0 19(6)-1...  | Methyl Cyanide | 349.212332 GHz   | 349.197964 GHz  | 424.7 K            | 0.71              | 995.379 D <sup>2</sup>  | Offline |
| CH3CN v=0 19(6)-1...  | Methyl Cyanide | 349.212321 GHz   | 349.197953 GHz  | 424.7 K            | 0.71              | 0.002 D <sup>2</sup>    | Offline |
| CH3CN v=0 19(6)-1...  | Methyl Cyanide | 349.212285 GHz   | 349.197917 GHz  | 424.7 K            | 0.71              | 1049.515 D <sup>2</sup> | Offline |
| CH3CN v8=1 J =19...   | Methyl Cyanide | 349.208926 GHz   | 349.194558 GHz  | 2089.502 K         |                   | 204.763 D <sup>2</sup>  | Offline |
| CH3CN v8=1 J =19...   | Methyl Cyanide | 349.174395 GHz   | 349.160028 GHz  | 2068.707 K         |                   | 289.09 D <sup>2</sup>   | Offline |
| CH3CN v=0 19(7)-1...  | Methyl Cyanide | 349.125319 GHz   | 349.110955 GHz  | 517.407 K          | 0.5               | 531.025 D <sup>2</sup>  | Offline |
| CH3CN v=0 19(7)-1...  | Methyl Cyanide | 349.125315 GHz   | 349.110950 GHz  | 517.407 K          | 0.5               | 477.876 D <sup>2</sup>  | Offline |
| CH3CN v=0 19(7)-1...  | Methyl Cyanide | 349.125298 GHz   | 349.110934 GHz  | 517.407 K          | 0.5               | 0.001 D <sup>2</sup>    | Offline |
| CH3CN v=0 19(7)-1...  | Methyl Cyanide | 349.125249 GHz   | 349.110884 GHz  | 517.407 K          | 0.5               | 503.75 D <sup>2</sup>   | Offline |
| CH3OH v t=0 14(1,...) | Methanol       | 349.107020 GHz   | 349.092656 GHz  | 260.203 K          | 3.52              | 25.799 D <sup>2</sup>   | Offline |
| 13CH3OH v t=0 4 (...) | Methanol       | 349.097921 GHz   | 349.083558 GHz  | 45.01 K            |                   | 0 D <sup>2</sup>        | Offline |
| 13CH3OH v t=0 3 (...) | Methanol       | 349.034424 GHz   | 349.020063 GHz  | 35.947 K           |                   | 0 D <sup>2</sup>        | Offline |
| CH3CN v=0 19(8)-1...  | Methyl Cyanide | 349.025009 GHz   | 349.010648 GHz  | 624.32 K           | 1.03              | 505.523 D <sup>2</sup>  | Offline |
| CH3CN v=0 19(8)-1...  | Methyl Cyanide | 349.025006 GHz   | 349.010646 GHz  | 624.32 K           | 1.03              | 454.821 D <sup>2</sup>  | Offline |
| CH3CN v=0 19(8)-1...  | Methyl Cyanide | 349.024983 GHz   | 349.010623 GHz  | 624.32 K           | 1.03              | 0.001 D <sup>2</sup>    | Offline |
| CH3CN v=0 19(8)-1...  | Methyl Cyanide | 349.024918 GHz   | 349.010558 GHz  | 624.32 K           | 1.03              | 479.558 D <sup>2</sup>  | Offline |
| CH3CN v8=1 J =19...   | Methyl Cyanide | 349.016636 GHz   | 349.002276 GHz  | 2294.548 K         |                   | 316.133 D <sup>2</sup>  | Offline |

Add to spectral window list

## Spectral windows in this baseband (maximum of four)

| Transition ▲        | Description      | Rest Frequency ▲ | Sky Frequency  |
|---------------------|------------------|------------------|----------------|
| SO 3Σ v=0 8(8)-7(7) | Sulfur Monoxide  | 344.310612 GHz   | 344.296446 GHz |
| CO v=0 3-2          |                  | 345.795990 GHz   | 345.781762 GHz |
| SiO v=0 8-7         | Silicon Monoxide | 347.330579 GHz   | 347.316288 GHz |

Remove spectral window(s)

Cancel

Ok



## Editors

Spectral    Spatial    Spectral Setup

Produce image sidebands (Bands 9 and 10 only) ☐




Polarization products desired ☐ XX ☒ DUAL ☐ FULL

### Spectral Setup Errors

The spectral window range exceeds the baseband width : 3.051092345699999 GHz

Spectral Line

Baseband-1

| Fraction | Centre Freq<br>(rest, hel) | Centre Freq<br>(sky, hel) | Transition          | Bandwidth, Resolution (smoothed) | Spec.<br>Avg. | Representative<br>Window                                                            |
|----------|----------------------------|---------------------------|---------------------|----------------------------------|---------------|-------------------------------------------------------------------------------------|
| 1/2      | 345.79599 GHz              | 345.78176 GHz             | CO v=0 3-2          | 58.594 MHz, 70.557 kHz           | 2             |  |
| 1/4      | 344.31061 GHz              | 344.29645 GHz             | SO 3Σ v=0 8(8)-7(7) | 58.594 MHz, 141.113 kHz          | 2             |  |
| 1/4      | 347.33058 GHz              | 347.31628793178334 GHz    | SiO v=0 8-7         | Please select a correlator mode  | 1             |  |



☐ Show image spectral windows

Baseband-2

Error : over the width of the baseband

☐ Show image spectral windows

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.

### 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

Project

▼  Proposal

ScienceGoal (Test)

Field Setup

Calibration Setup



- Control and Performance
- Technical Justification

Polarization products desired ☐ XX ☒ DUAL ☐ FULL

## Spectral Setup Errors

Baseband-1 : Spectral window resolution mismatch in spectral set-up. All windows must be allocated the same resolution.

Spectral Line

| Fraction | Centre Freq<br>(rest, hel) | Centre Freq<br>(sky, hel) | Transition          | Bandwidth, Resolution (smoothed)               | Spec.<br>Avg. | Representative<br>Window                                                            |
|----------|----------------------------|---------------------------|---------------------|------------------------------------------------|---------------|-------------------------------------------------------------------------------------|
| 1/2      | 345.79599 GHz              | 345.78176 GHz             | CO v=0 3-2          | 58.594 MHz( 51 km/s), 70.557 kHz( 0.061 km/s)  | 2             |  |
| 1/4      | 344.31061 GHz              | 344.29645 GHz             | SO 3Σ v=0 8(8)-7(7) | 58.594 MHz( 51 km/s), 141.113 kHz( 0.123 km/s) | 2             |  |

Add spectral window centred on a spectral line

Add spectral window manually

Delete

☐ Show image spectral windows

## Baseband-2

Error : different spectral resolution within the baseband



Add spectral window centred on a spectral line

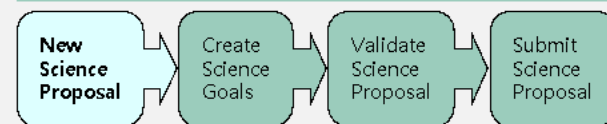
Add spectral window manually

Delete

☐ Show image spectral windows

### Phase I: Science Proposal

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.



Click on the overview steps to view the contextual help

## Importing And Exporting

Template  
Library

Need  
More  
Help?

View  
Phase 2  
Steps

## Editors



Spectral      Spatial      Spectral Setup

Processed image stacks (bands 3 and 10 only)

☐ XX ☒ DUAL ☐ FULL

Can not configure LOs for these spectral windows

**?** **-**

| Fraction | Centre Freq<br>(rest, hel) | Centre Freq<br>(sky, hel) | Transition          | Bandwidth, Resolution (smoothed) | Spec.<br>Avg. | Representative<br>Window                                                            |
|----------|----------------------------|---------------------------|---------------------|----------------------------------|---------------|-------------------------------------------------------------------------------------|
| 1/2      | 345.79599 GHz              | 345.78176 GHz             | CO v=0 3-2          | 117.188 MHz, 141.113 kHz         | 2             |  |
| 1/4      | 344.31061 GHz              | 344.29645 GHz             | SO 3Σ v=0 8(8)-7(7) | 58.594 MHz, 141.113 kHz          | 2             |  |

☐ Show image spectral windows

|     |               |               |          |                                 |   |                                                                                     |
|-----|---------------|---------------|----------|---------------------------------|---|-------------------------------------------------------------------------------------|
| 1/2 | 229.33055 GHz | 229.31700 GHz | C18O 3-2 | Please select a correlator mode | 1 |  |
|-----|---------------|---------------|----------|---------------------------------|---|-------------------------------------------------------------------------------------|

Error : Outside of IF bandwidth




☐ Show image spectral windows

### Phase I: Science Proposal

- ```
graph LR; A[New Science Proposal] --> B[Create Science Goals]; B --> C[Validate Science Proposal]; C --> D[Submit Science Proposal];
```

View
Phase 2
Steps

Editors

Spectral	Spatial	Spectral Setup
		



☐ Reduce image blackbands (bands 0 and 10 only)

Polarization products desired

☐ XX ☒ DUAL ☐ FULL

Spectral Setup Errors

Spectral Line

Fraction	Centre Freq (rest, hel)	Centre Freq (sky, hel)	Transition	Bandwidth, Resolution (smoothed)	Spec. Avg.	Representative Window
1/2	345.79599 GHz	345.78176 GHz	CO v=0 3-2	117.188 MHz(102 km/s), 141.113 kHz(0.122 km/s)	2	
1/4	344.31061 GHz	344.29645 GHz	SO 3Σ v=0 8(8)-7(7)	58.594 MHz(51 km/s), 141.113 kHz(0.123 km/s)	2	

Add spectral window centred on a spectral line

Add spectral window manually

Delete

☐ Show image spectral windows

Baseband-2

1(Full)	330.58797 GHz	330.57436 GHz	13CO v=0 3-2	117.188 MHz(106 km/s), 70.557 kHz(0.064 km/s)	2	
---------	---------------	---------------	--------------	---	---	---

Add spectral window centred on a spectral line

Add spectral window manually

Delete

☐ Show image spectral windows

Baseband-3

Contextual Help

Phase I: Science Proposal

1. Please ensure you and your co-Is are registered with the [ALMA Science Portal](#)
2. Create a new proposal
- Selecting a new proposal type
 - Clicking on the "New" button
 - Or clicking on the "New" button
3. Click on the "New" button
- Representative work to estimate beam size**

Representative window (frequency) is used to estimate beam size and sensitivity

Importing And Exporting

Template
Library

Need
More
Help?

view
Phase 2
Steps

Editors

Spectral Spatial Spectral Setup

Representative Frequency

Representative Frequency

The representative frequency is used in conjunction with the sensitivity entered on the 'Control and Performance' page to estimate the required

observing time and to set the size of the antenna beam shown in the 'Spatial Visual' editor. If the transition you are most interested in does

not fall in the centre of the chosen spectral window, its frequency can be changed here. The sky equivalents of the representative frequency are shown in the targets table below:

shown in the targets table below.

345.79599 GHz

Rest Frequencies

Please set the rest frequencies of spectral lines that will be observed. These will be used during data reduction.

Please set the rest frequencies of spectral lines that will be observed. These will be used during data reduction to set the velocity scale and will enhance the AIMA Science Archive. We recommend that this be done

once the spectral setup is fully defined.

Source Name	Velocity	Frame	Representative Frequency (Observed)
-------------	----------	-------	-------------------------------------

Source Name	Velocity	Name	Representative Frequency (Observed)
TW H ₂	12.225 km/s	hd	245.7010 GHz

1W Hya	12.335 km... nel	345.7818 GHz
--------	------------------	--------------

...

	Contextual Help	Phase I: Science Proposal
--	-----------------	---------------------------

1. Please ensure you and your co-Is are registered with the [ALMA](#)

2. Create a new window with the following properties:

- **Selective window (frequency)** is used to

- Clicking **estimate beam size and conductivity** will take you to the **Estimate Beam Size and Conductivity** page.

● Or click **estimate beam size and sensitivity**

3. Click on the **proposal tree node** and complete the relevant fields.


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[Help](#)
[Feedback](#)

Exporting Help? Steps

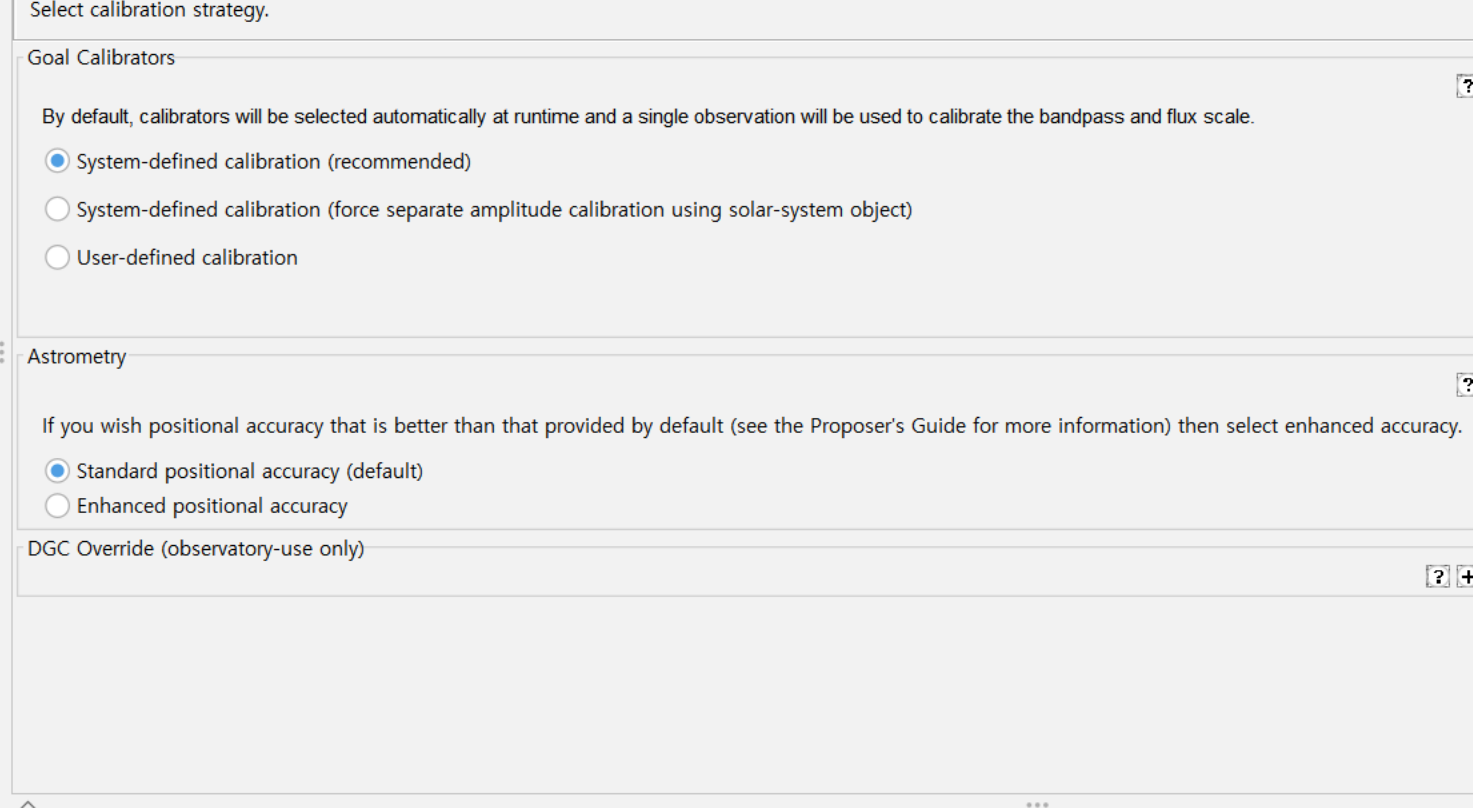
Phase I: Science Proposal

- # Window (frequency) is e and sensitivity

Representative window (frequency) is used to estimate beam size and sensitivity

Editors

Spectral Spatial Calibration Setup

[illegible]

Phase I: Science Proposal

- ```
graph LR; A[New Science Proposal] --> B[Create Science Goals]; B --> C[Validate Science Proposal]; C --> D[Submit Science Proposal]
```

Click on the overview steps to view the contextual help



## Project Structure

Proposal Program

## Unsubmitted Proposal

- Accretion Instabilities in EC 53
  - Proposal
    - Planned Observing
      - ScienceGoal (B6 C18O + SO + SiO)
      - ScienceGoal (Copy of B6 C18O + S
        - General
        - Field Setup
        - Spectral Setup
        - Calibration Setup
        - Control and Performance
        - Technical Justification

## Editors

Spectral Spatial Control and Performance

These parameters are used to control various aspects of the observations, including the required antenna configurations and integration times.

## Configuration Information

|                                           |     |                      |                                |                                 |      |
|-------------------------------------------|-----|----------------------|--------------------------------|---------------------------------|------|
| Antenna Beamsize ( $1.13 * \lambda / D$ ) | 12m | 16.613 arcsec        | 7m                             | 28.480 arcsec                   |      |
| Number of Antennas                        | 12m | 43                   | 7m                             | 10                              | TP 3 |
|                                           |     | ACA 7m configuration | Most compact 12m configuration | Most extended 12m configuration |      |
| Longest baseline                          |     | 0.049 km             | 0.161 km                       | 8.548 km                        |      |
| Synthesized beamsize                      |     | 3.801 arcsec         | 1.010 arcsec                   | 0.029 arcsec                    |      |
| Shortest baseline                         |     | 0.009 km             | 0.015 km                       | 0.113 km                        |      |
| Maximum recoverable scale                 |     | 19.694 arcsec        | 8.619 arcsec                   | 0.425 arcsec                    |      |

## Desired Performance

Desired Angular Resolution (Synthesized Beam) ☐ Single ☒ Range ☐ Any ☐ Standalone ACA

0.05000 arcsec to 0.15000 arcsec

Largest Angular Structure in source 1.20000 arcsec

Desired mosaic sensitivity 3.30000 mJy equivalent to 1.4597 K @ 0.150 " and 13.138 K @ 0.0500 "

## Feedback

Validation Validation History Log

## Overview

## Contextual Help

- Please ensure you and your co-Is are registered with the [ALMA Science Portal](#)
- Create a new proposal by either:

## Phase I: Science Proposal



ALMA Observing Tool (Cycle 10 (Phase1)) - Accretion Instabilities in EC 53

File Edit View Tool Search Help

Project Structure

Unsubmitted Proposal

Accretion Instabilities in EC 53

Proposal

Planned Observing

ScienceGoal (B6 C18O + SO + SiO)

General

Field Setup

Spectral Setup

Calibration Setup

Control and Performance

Technical Justification

Editors

Spectral Spatial Control and Performance

ACA 7m configuration Most compact 12m configuration Most extended 12m configuration

Longest baseline0.049 km0.161 km8.548 km

Synthesized beamsize6.068 arcsec1.612 arcsec0.047 arcsec

Shortest baseline0.009 km0.015 km0.113 km

Maximum recoverable scale31.438 arcsec13.759 arcsec0.678 arcsec

Desired Performance

Desired Angular Resolution (Synthesized Beam)SingleRangeAnyStandalone ACA

0.05arcsecto0.15000arcsec

Largest Angular Structure in source1.20000arcsec

Desired sensitivity per pointing3.30000mJyequivalent to8.3695 K@ 0.100 "

and33.478 K@ 0.0500 "

Bandwidth used for SensitivityRepWindowEffectiveChannelWidthFrequency Width0.097656 MHz

Override OT's sensitivity-based time estimate (must be justified)YesNo

Science Goal Breakdown: time estimate, clustering, beam and configurationsPlanning and Time Estimate

Simultaneous 12-m and ACA observationsYesNo

Feedback

Validation Validation History Log

Overview

Contextual Help

Phase I: Science Proposal

New Science Proposal

Create Science Goals

Validate Science Proposal

Submit Science Proposal

1. Please ensure you and your co-Is are registered with the ALMA Science Portal

2. Create a new proposal by either:

Range is recommended (single ~ < 20% )

Flux unit is used although K can be chosen.

$$\left(\frac{T}{1\text{ K}}\right) = \left(\frac{S_{\nu}}{1\text{ Jy}}\right) \left[13.6 \left(\frac{300\text{ GHz}}{\nu}\right)^2 \left(\frac{1''}{\theta_{max}}\right) \left(\frac{1''}{\theta_{min}}\right)\right]$$



## Editors

Spectral    Spatial    Control and Performance

[illegible]

|                           |               |               |              |
|---------------------------|---------------|---------------|--------------|
| Longest baseline          | 0.049 km      | 0.161 km      | 8.548 km     |
| Synthesized beamsizes     | 6.068 arcsec  | 1.612 arcsec  | 0.047 arcsec |
| Shortest baseline         | 0.009 km      | 0.015 km      | 0.113 km     |
| Maximum recoverable scale | 31.438 arcsec | 13.759 arcsec | 0.678 arcsec |

Desired Performance

Desired Angular Resolution (Synthesized Beam) ☐ Single ☒ Range ☐ Any ☐ Standalone ACA

0.05 arcsec to 0.15 arcsec

|                                     |         |        |
|-------------------------------------|---------|--------|
| Largest Angular Structure in source | 1.20000 | arcsec |
|-------------------------------------|---------|--------|

Desired sensitivity per pointing  mJy  equivalent to  @ 0.150 " and  @ 0.0500 "

Bandwidth used for Sensitivity RepWindowEffectiveChannelWidth Frequency Width 0.097656 MHz

Override OT's sensitivity-based time estimate (must be justified)

Science Goal Breakdown:  
time estimate, clustering, beam and configurations  
Simultaneous 12-m and ACA observations

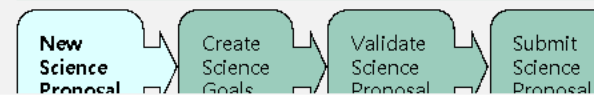
**Feedback**

Validation Validation History Log

### Contextual Help

1. Please ensure you and your co-Is are registered with the [ALMA Science Portal](#)
2. Create a new proposal by either:

### Phase I: Science Proposal



Note: The time in brackets is that required to reach the sensitivity.  
Operational requirements often mean that the actual observed time is longer, especially for mosaics. Please see the User Manual for more details.

Input Parameters

Requested sensitivity3.300 mJy

Bandwidth used for sensitivity0.098 MHz

Representative frequency (sky, first source)219.567 GHz

Estimated Total time for Science Goal

2.98 h

Cluster 1

| Source Name | RA            | Dec          | Velocity   |
|-------------|---------------|--------------|------------|
| EC_53       | 18:29:51.1768 | 01:16:40.389 | 8.500 km/s |

Possible Configuration Combinations

| 12-m (1) | 12-m (2) | 7-m | TP | Nominal Beam(") | Max expected axial ratio |
|----------|----------|-----|----|-----------------|--------------------------|
| C-6      | None     | No  | No | 0.132 x 0.169   | 1.5                      |

Input Parameters

Precipitable water vapour (all sources)1.796mm (5th Octile)

Time required for 12m (1) [C-6]

Time on source per pointing (first source)1.55 h [ 1.54 h]

Total number of pointings (all sources)1

Number of tunings1

Total time on source1.55 h [1.54 h]

Total calibration time1.30 h

Other overheads7.93 min

Total time for 1 SB execution1.49 h

Number of SB executions2

Total time to complete SB2.98 h

Calibration Breakdown per SB execution

| uration | Most compact 12m configuration | Most extended 12m configuration |
|---------|--------------------------------|---------------------------------|
|         | 0.161 km                       | 8.548 km                        |
|         | 1.612 arcsec                   | 0.047 arcsec                    |
|         | 0.015 km                       | 0.113 km                        |
|         | 13.759 arcsec                  | 0.678 arcsec                    |

☐ Single ☒ Range ☐ Any ☐ Standalone ACA

0.05arcsecto0.15arcsec

1.20000arcsec

3.30000mJyequivalent to3.7198 K@ 0.150 "

and33.478 K@ 0.0500 "

RepWindowEffectiveChannelWidthFrequency Width0.097656 MHz

☐ Yes ☒ No

Planning and Time Estimate

☐ Yes ☒ No

Help

registered with the [ALMA](#)

Phase I: Science Proposal

New  
Science  
Proposal

Create  
Science  
Goals

Validate  
Science  
Proposal

Submit  
Science  
Proposal

1

NE 6

For a peak flux density of 100.00 mJy , the S/N is 10.0

For a continuum flux density of 50.00 mJy, 568.12 K-2272.49 K, the achieved S/N is 305.6

18.7

9.45



5.27

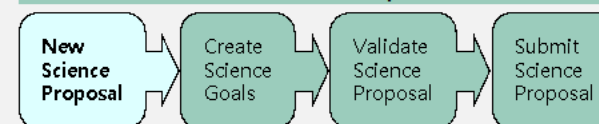


aaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaa

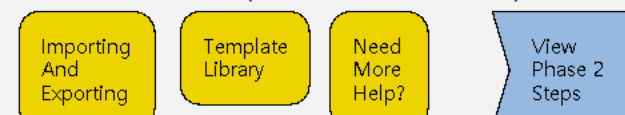
Spectral dynamic range is related with the bandpass accuracy. It is 1000 (3-6), 400 (7), 250 (8) , 170 (9), and 150 (10).

### Phase I: Science Proposal

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.

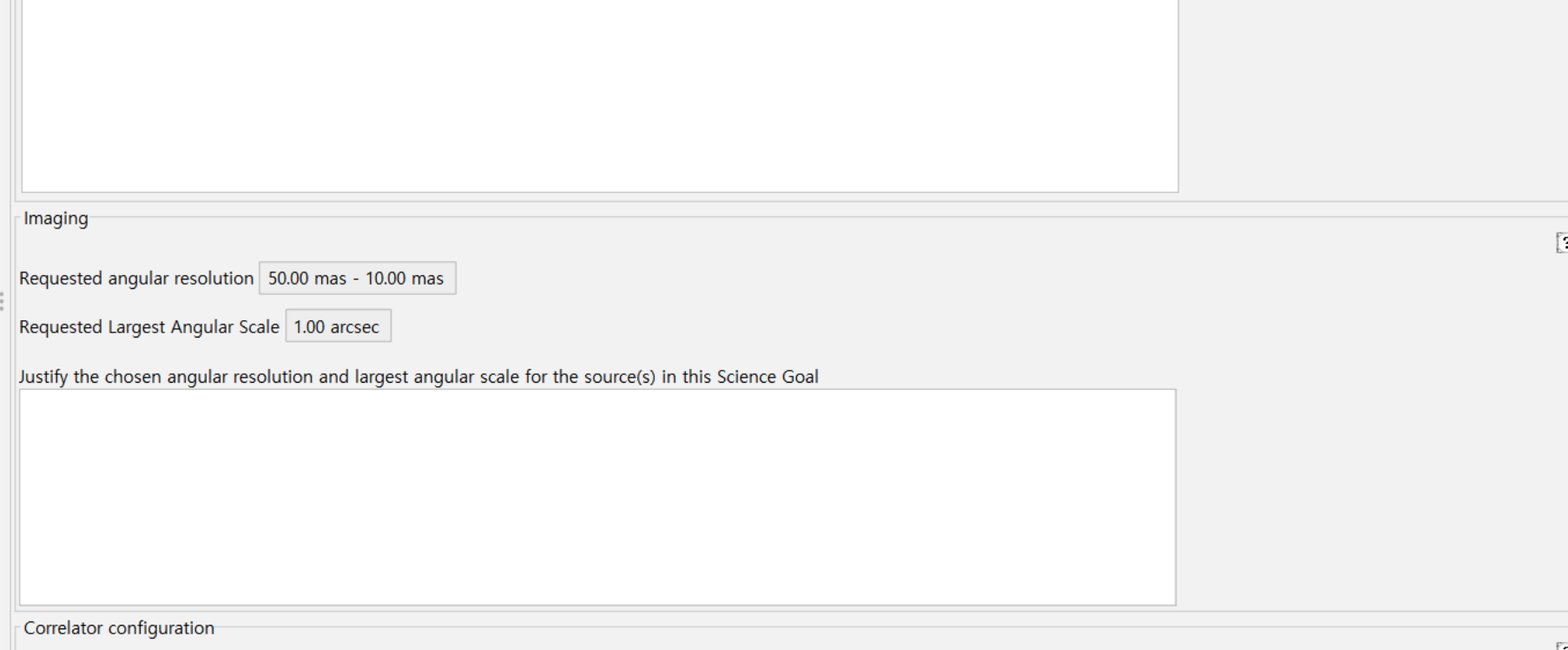


Click on the overview steps to view the contextual help



## Editors

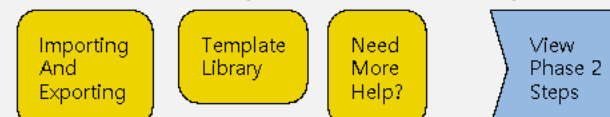
| Spectral | Spatial | Technical Justification |
|----------|---------|-------------------------|
|----------|---------|-------------------------|

[illegible]

### Phase I: Science Proposal

- ```
graph LR; A[New Science Proposal] --> B[Create Science Goals]; B --> C[Validate Science Proposal]; C --> D[Submit Science Proposal]
```

Click on the overview steps to view the contextual help





Project Structure

Proposal Program

Unsubmitted Proposal

- Project
 - Proposal
 - Planned Observing
 - ScienceGoal (Test)
 - General
 - Field Setup
 - Spectral Setup
 - Calibration Setup
 - Control and Performance
 - Technical Justification
 - ScienceGoal (Copy of Test)
 - General
 - Field Setup
 - Spectral Setup
 - Calibration Setup
 - Control and Performance
 - Technical Justification
 - ScienceGoal (Copy of Test)
 - General
 - Field Setup
 - Spectral Setup
 - Calibration Setup
 - Control and Performance
 - Technical Justification



Overview

Editors

Spectral Spatial Technical Justification



Correlator configuration

line width / representative spectral window resolution: / =

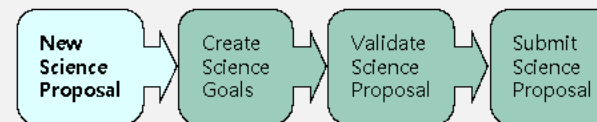
Representative spectral window width :

Justify your correlator set-up with particular reference to the number of spectral resolution elements per line width.
You may want to consider spectral averaging to lower the data rate

Contextual Help

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

Phase I: Science Proposal



Click on the overview steps to view the contextual help



ALMA Observing Tool - Cycle 10 (Phase1) - Project

FileEditViewToolsSearchHelp

1D

Project Structure

ProposalProgram

Unsubmitted Proposal

- Test
 - Proposal
 - Planned Observing
 - ScienceGoal (Test)
 - General
 - Field Setup
 - Spectral Setup
 - Calibration Setup
 - Control and Performance
 - Technical Justification

Editors

SpectralSpatialProposal

reviewers are requested to update their user profiles with combinations of scientific categories and keywords which describe their area(s) of expertise using the new 'Expertise' tab in <https://asa.alma.cl/UserRegistration/secure/updateAccount.jsp>. Available expertise information will be used in the distribution of proposal assignments.

Reviewer has a PhD? ☒ No ☐ Yes

Select Mentor

Mentor name

Mentor has a PhD? ☒ No ☐ Yes

Science Case

Please ensure that your science case is properly anonymized following instructions on the Science Portal

Science Case (Mandatory, PDF, 4 pages max.)

Duplicate observations

Briefly justify any new observations that duplicate archival data or accepted programs. Information regarding the ALMA Duplication Policy and how to search archival data and accepted programs can be found at:

Feedback

ValidationValidation HistoryLog

10 errors, 3 warnings : double-click on each row to be taken to the problem

	Description	Suggestion
✖	No document found - you must add a Science Case to your proposal	Select the proposal node in the Proposal tab and add your document
✖	No mentor has been defined	Please select a mentor (must be a registered ALMA user)
✖	Neither the reviewer or mentor have a PhD	Please select a reviewer or mentor with a PhD

Overview

Contextual Help

Phase I: Science Proposal

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ALMA Observing Tool (Cycle 10 (Phase1)) - Project

FileEditViewToolSearchHelp

1D

ALMA LO Configuration Tool...

Sensitivity Calculator...

Generate SBs from the Selected GoalCtrl-B

Display Project Time Summary

Generate Phase 2 SBs from all the Science GoalsCtrl-B

Generate a PDF of Whole Proposal

Disable Edit PGenerate a PDF of Whole Proposal

Project Structure

Proposal

Program

Unsubmitted Proposals

Test

Proposal

Planning

Science Goal

General

Field Setup

Spectral Setup

Calibration Setup

Control and Performance

Technical Justification

Technical Justification

Requested angular resolution50.00 mas - 10.00 mas

Requested Largest Angular Scale1.00 arcsec

Justify the chosen angular resolution and largest angular scale for the source(s) in this Science Goal

aaaaaaaaaaaaaaaaaaaaaaaaaaaa

Feedback

ValidationValidation HistoryLog

7 errors, 3 warnings : double-click on each row to be taken to the problem

Description	Suggestion
neither the reviewer or mentor have a PhD	Please select a reviewer or mentor with a PhD
Spectral setup has low aggregate bandwidth	Calibration will use bandwidth switching. Increase the bandwidth if possible
Desired angular resolution is outside the range allowed by the available arrays and	Select the Control Parameters in the Science Goal and enter a valid value
Part of spw CO v=0 3-2 in BB 2 lies within 30 MHz of the baseband edge. This could result in	Move the spw away from the baseband edge to avoid this problem.

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 I: 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

ALMA Observing Tool (Cycle 10 (Phase1)) - Project

File

Edit

View

Tool

Search

Help

1

New ProposalCtrl-N

D

New DDT ProposalCtrl-D

New Supplemental Call Proposal

Open Project>

Open Project as New Proposal>

Save

Ctrl-S

Save As...

Show ALMA Template Library

Use Project as Template>

Validate

Ctrl-L

Submit Project

Submit Project to ALMA

Preferences

Save Preferences

Quit

Editors

Spectral

Spatial

Technical Justification

Imaging

Requested angular resolution50.00 mas - 10.00 mas

Requested Largest Angular Scale1.00 arcsec

Justify the chosen angular resolution and largest angular scale for the source(s) in this Science Goal

aaaaaaaaaaaaaaaaaaaaaaaaaaaaa

Feedback

Validation

Validation History

Log

7 errors, 3 warnings : double-click on each row to be taken to the problem

Description	Suggestion
<div>⚠️</div> neither the reviewer or mentor have a PhD	Please select a reviewer or mentor with a PhD
<div>⚠️</div> Spectral setup has low aggregate bandwidth	Calibration will use bandwidth switching. Increase the bandwidth if possible
<div>⚠️</div> Desired angular resolution is outside the range allowed by the available arrays and	Select the Control Parameters in the Science Goal and enter a valid value
<div>⚠️</div> Part of spw CO v=0 3-2 in BB 2 lies within 30 MHz of the baseband edge. This could result in	Move the spw away from the baseband edge to avoid this problem.

Overview

Contextual Help

Phase I: Science Proposal

1

Please ensure you and your co-Is are registered with the [ALMA Science Portal](#)

2

Create a new proposal by either:

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 icon in the toolbar
- Or clicking on this [link](#)

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Click on the

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[proposal](#) tree node and complete the relevant fields.

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



Q&A