An Introduction to the Cycle 5 ALMA Observing Tool

How to turn that great idea into an ALMA proposal...

Ke Zhang

Author: Harvey Liszt

Atacama Large Millimeter/submillimeter Array
Expanded Very Large Array
Very Long Baseline Array

Downloading the ALMA OT

About | Science | Proposing | Observing | Data | Processing | Tools | Documentation | Help | Search Site

Observing Tool

The ALMA Observing Tool (OT) is a Java application used for the preparation and submission of ALMA Phase 1 (observing proposal) and Phase 2 (telescope runfiles for accepted proposals) materials. It is also used for preparing and submitting Director's Discretionary Time (DDT) proposals. The current *Cycle 4* release of the OT is configured for the present capabilities of ALMA as described in the Cycle 4 Call For Proposals. Note that in order to submit proposals you will have to register with the ALMA Science Portal beforehand.

Note that preparation of Cycle 3 Phase 1 and DDT proposals needs to be done using the Cycle 3 version of the Observing Tool. This version of the OT can be found in the DDT page, or the Phase 2 menu.

Download & Installation

The OT will run on most common operating systems, as long as you have **Java 8** installed (see the troubleshooting page if you are experiencing Java problems). The ALMA OT is available in two flavours: Web Start and tarball.

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

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

Webstart | Tarball

Project - Observing Tool for ALMA, version Cycle2Test2

File Edit View Tool Search Help

Perspective 1

Project Structure

Proposal | Program

Unsubmitted Proposal

- Project
- Proposal

You can right-click and add blank Science Goals

Editors

Spectral | Spatial | Project

Principal Investigator

Select PI...

Main Project Information

Project

Assigned Priority

Project Code: None Assigned

Validation History | Log

Description	Suggestion

A clean slate. From here, you can:

- Start a new proposal
- Add blank Science Goals (SG)
- Load templates with example SG

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

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

The workflow of OT

- Proposal
  - Basic information (title, abstract, investigators, …)
  - Upload your science case description

  - Add a science goal (e.g. a group of sources with the same spectral setting and sensitivity requirement)
    - Field Setup
    - Spectral Setup
    - Calibration Setup (handled by ALMA in most of the cases)
    - Control and Performance
    - Technical Justification
  - More science goals…
  - Validate
  - Submit

ALMA Observing Tool (2015.8) - Project

File Edit View Tool Search Help

Perspective 1

Project Structure

Proposal | Program

Unsubmitted Proposal

- Title goes here
  - Proposal
    - Planned Observing

This is the J-tree

Editors

Spectral | Spatial | Proposal

Proposal Information

Proposal Title: Title goes here

Proposal Cycle: TEST.7

Abstract (max. 1200 characters): But not too abstract, please

Proposal Type

- Regular
- Target Of Opportunity
- VLBI
- Large Program

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

Keywords (max. 2 keywords)

- Lyman Alpha Emitters/Blobs (LAE/LAB)
- Lyman Break Galaxies (LBG)
- Starburst galaxies
- Sub-mm Galaxies (SMG)
- High-z Active Galactic Nuclei (AGN)

Student project

Related Proposals

Previous Proposals

Investigators

Further down, select PI/Co-I's from a search of registered ALMA users and attach the Science Case from a .pdf on disk

Science Case will be a PDF with a max of 4 pages, including figures.

ving Tool (Cycle3-RC2) – Really catchy title here

Perspective 1

Really catchy title here
Proposal
Planned Observing

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

Keywords (max. 2 keywords)
Lyman Alpha Emitters/Blobs (LAE/LAB)
Lyman Break Galaxies (LBG)
Starburst galaxies
Sub-mm Galaxies (SMG)
High-z Active Galactic Nuclei (AGN)

Student project
Continuation

Related Proposals

Previous Proposals

Investigators

Type	Full name	Email	Affiliation
PI	Not set	Not set	Not set

Select PI... | Add Col... | Remove Col | Add from Proposal...

Science Case (Mandatory, PDF, 4 pages max.) Attach... Detach View...

Investigator search constraints

ALMA ID is hliszt

Find Investigators

Full name	Email	Affiliation	ALMA ID
Harvey Liszt	hliszt@nrao.edu	North American ALMA ...	hliszt

Select PI Cancel

ALMA Observing Tool (FEB2017) - Project

File Edit View Tool Search Help

Perspective 1

Project Structure

Proposal Program

Unsubmitted Proposal

- Project
  - Proposal
    - Planned Observing

Editors

Spectral Spatial Proposal

Related Proposals

Previous Proposals

Investigators

Type	Full name	Email	Affiliation	ALMA ID	Executive
PI	Not set	Not set	Not set	Not set	Non-ALMA

Select PI | Add CoPI | Add CoI | Remove Collaborator | Add from Proposal

Science Case

Science Case (Mandatory, PDF, 4 pages max.) Attach... Detach View...

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.

Observatory Use Only

New! Concise (please) justfication when asking to duplicate previous observations or accepted proposals. Not for use when resubmitting rejected proposals

Science Case

- Must include:
  - Astronomical Importance
  - Estimated intensity, S/N
- May include:
  - Figures
  - Tables
  - References

- Free-form PDF document
  - 12+ font, English only
  - 20 MB file size
  - 4 pages (6 for Large Projects)

Table 1: Cycle 5 Configuration Schedule

Start date	Configuration	Longest baseline	LST for best observing conditions
2017 October 1	C43-7	3.7 km	~ 21h - 10h
2017 October 5	C43-8	6.8 km	~ 22h - 11h
2017 October 25	C43-9	12.8 km	~ 23h - 12h
2017 November 10	C43-10	16.5 km	~ 1h - 13h
2017 December 1-18	No observations due to large antenna reconfiguration		
2017 December 19	C43-6	1.8 km	~ 4h - 15h
2018 January 10	C43-5	1.1 km	~ 5h - 17h
2018 February 1-28	No observations due to February shutdown		
2018 March 1	C43-4	0.7 km	~ 8h - 21h
2018 March 30	C43-3	0.46 km	~ 10h - 0h
2018 May 15	C43-2	0.27 km	~ 12h - 3h
2018 June 15	C43-1	0.15 km	~ 14h - 5h
2018 July 15	C43-2	0.27 km	~ 17h - 7h
2018 August 15	C43-3	0.46 km	~ 18h - 8h
2018 August 30	C43-4	0.7 km	~ 19h - 9h
2018 September 15	C43-5	1.1 km	~ 20h - 10h

ALMA Observing Tool (2015.8) - Title goes here

File Edit View Tool Search Help

Perspective 1

- New Proposal ⌘-N
- New DDT Proposal ⌘-D
- Open Project
- Open Project as New Proposal
  - From ALMA Archive...
- Save ⌘-S
- Save As...
- Show ALMA Template Library
- Use Project as Template
- Validate ⌘-
- Submit Project
- Preferences
- Save Preferences
- Quit

Editors

Spectral | Spatial | Title goes here

al Investigator

Select PI...

Main Project Information

Project: Title goes here

Assigned Priority

Project Code: None Assigned

Since Cycle 4, a previously-submitted project can be opened as a new proposal from the science archive

Click here to load the standard templates that are distributed with the OT

Click here to load a project (perhaps an old one of yours) from disk as a template

Over

ntextual Help

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2. Create a new proposal by either:
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   - Or clicking on this link
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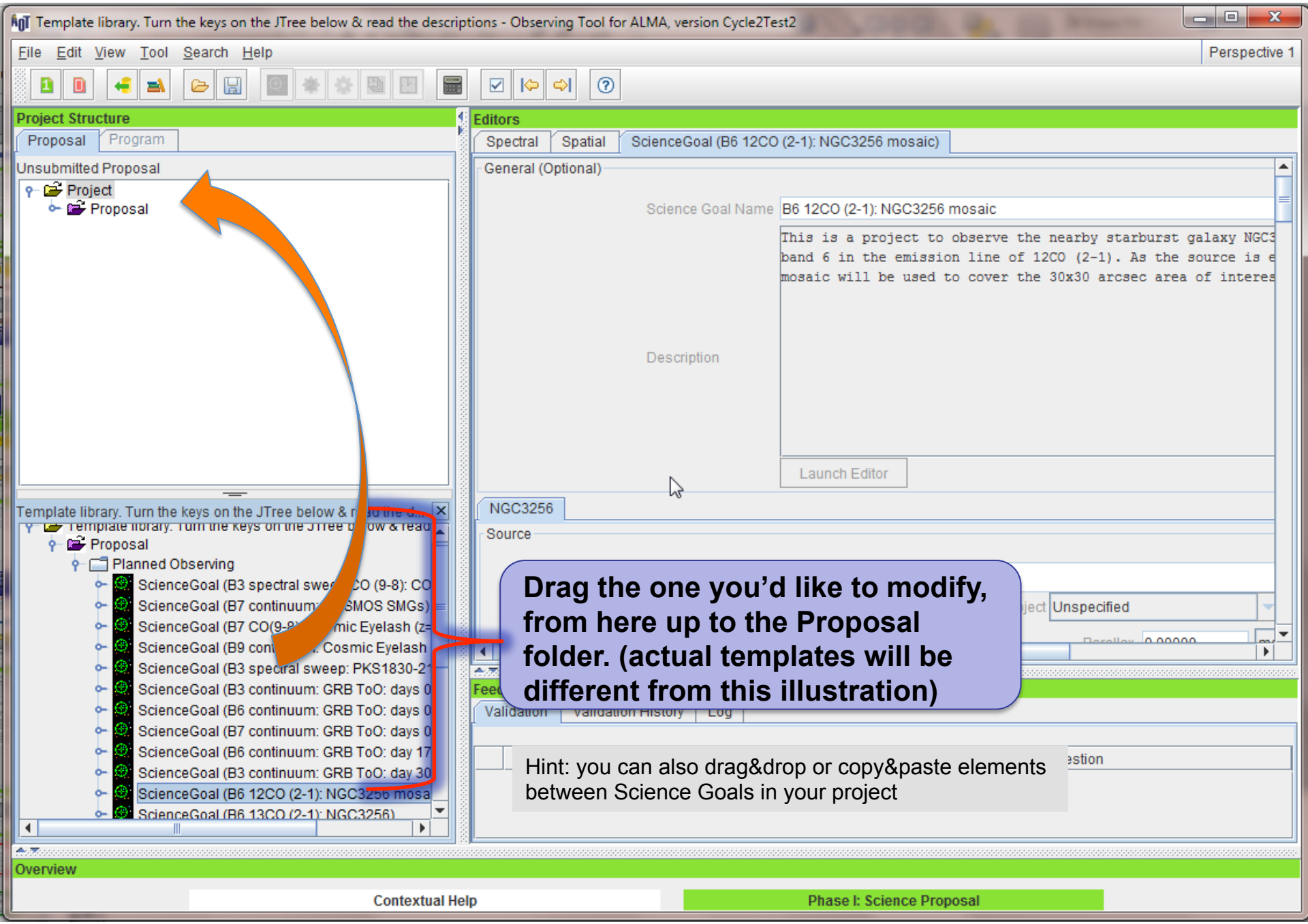
Phase I: Science Proposal

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



Drag the one you'd like to modify, from here up to the Proposal folder. (actual templates will be different from this illustration)

Hint: you can also drag&drop or copy&paste elements between Science Goals in your project

Let's work on a science goal together

- Suppose we want to observe molecular lines and continuum emission in NGC 3256

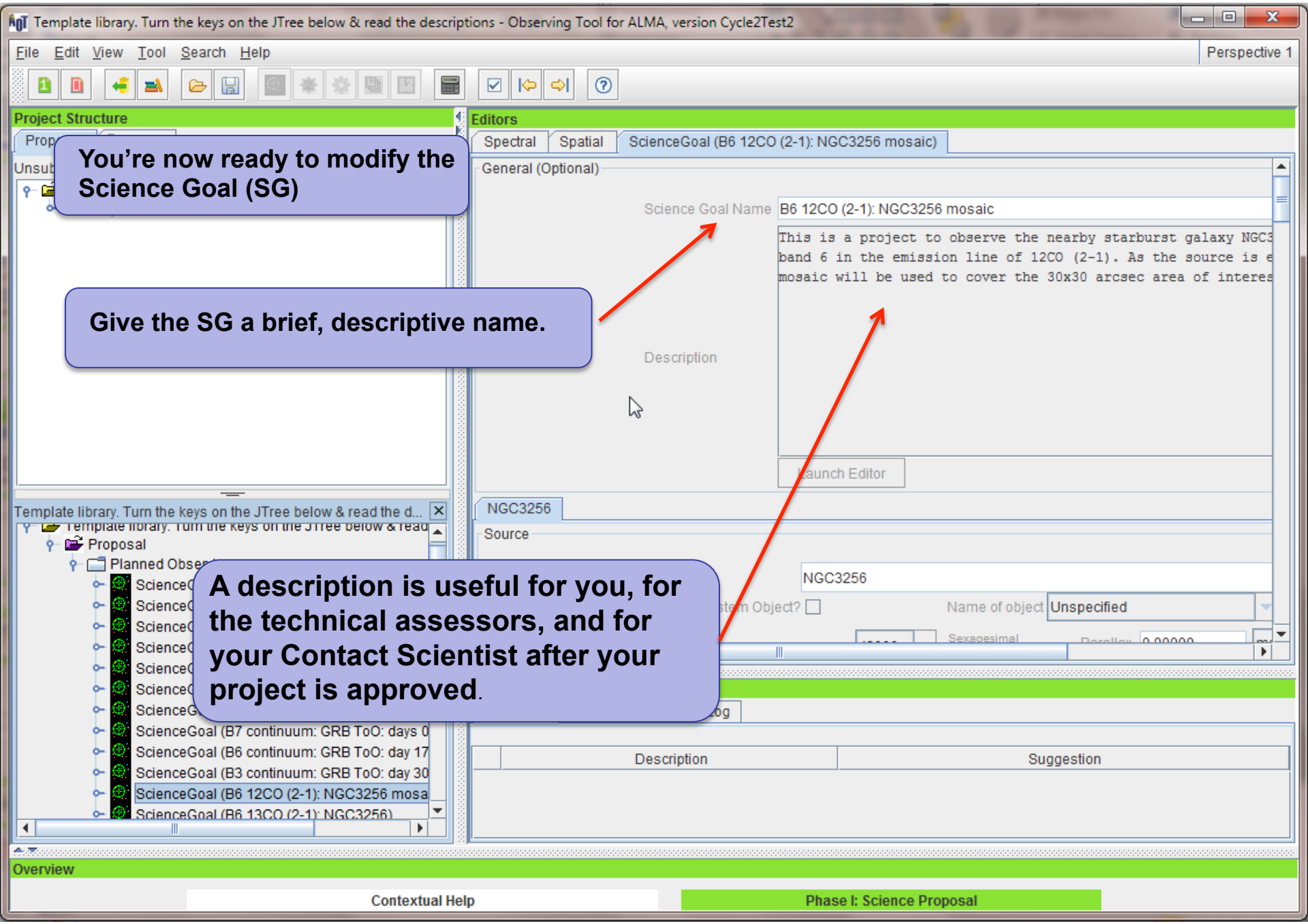
Field Setup

- Source Name: **NGC 3256**, then click on Resolve
- Target Type: **Rectangular Field**

- Expected Source Properties
  - Peak Continuum Flux Density per Beam: 0.174 Jy

- Rectangle
  - P length = 50 arcsec
  - q length = 50 arcsec

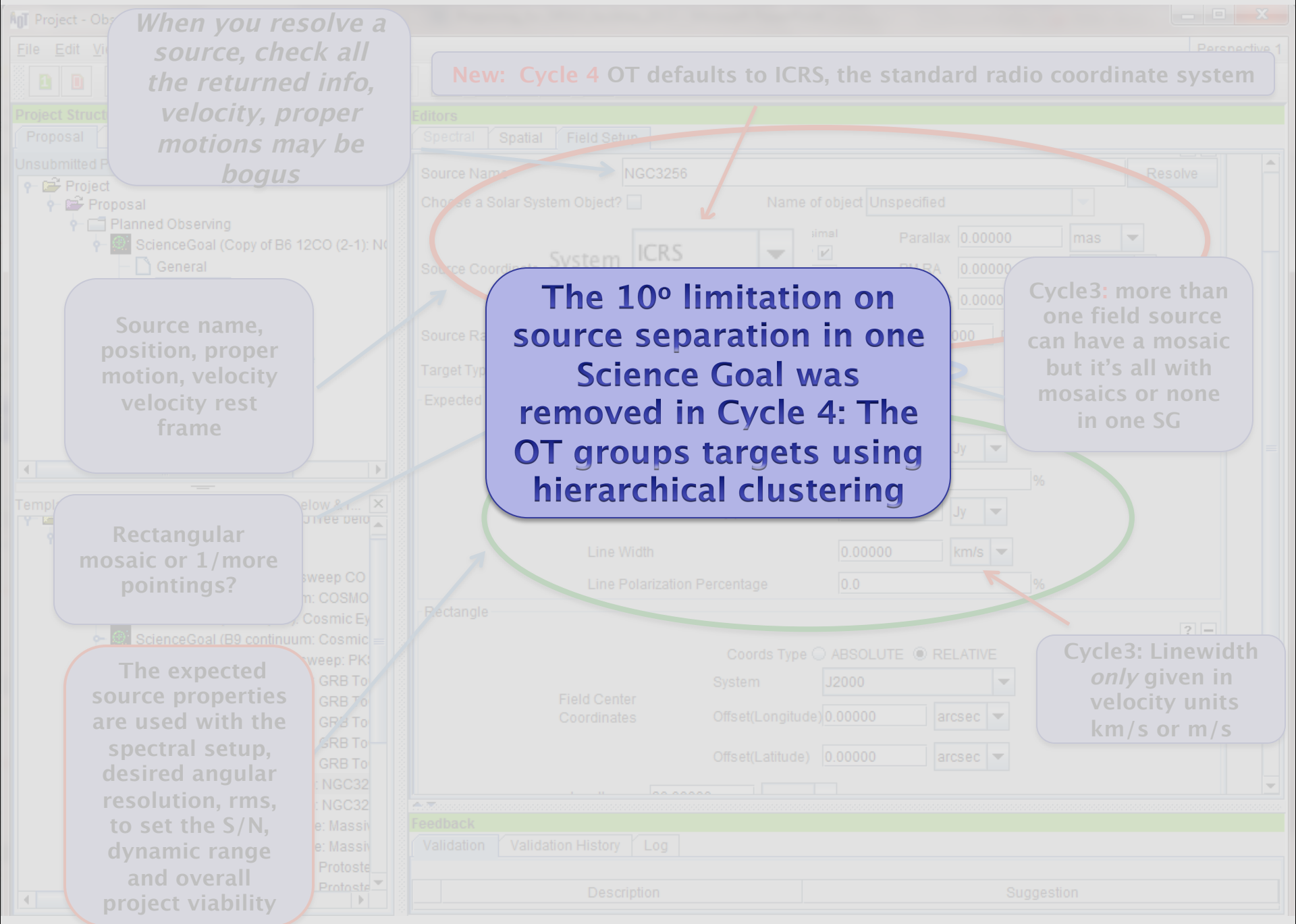
- On the lower left corner, there is an Image Query option
  - Use the Default setting and click on query

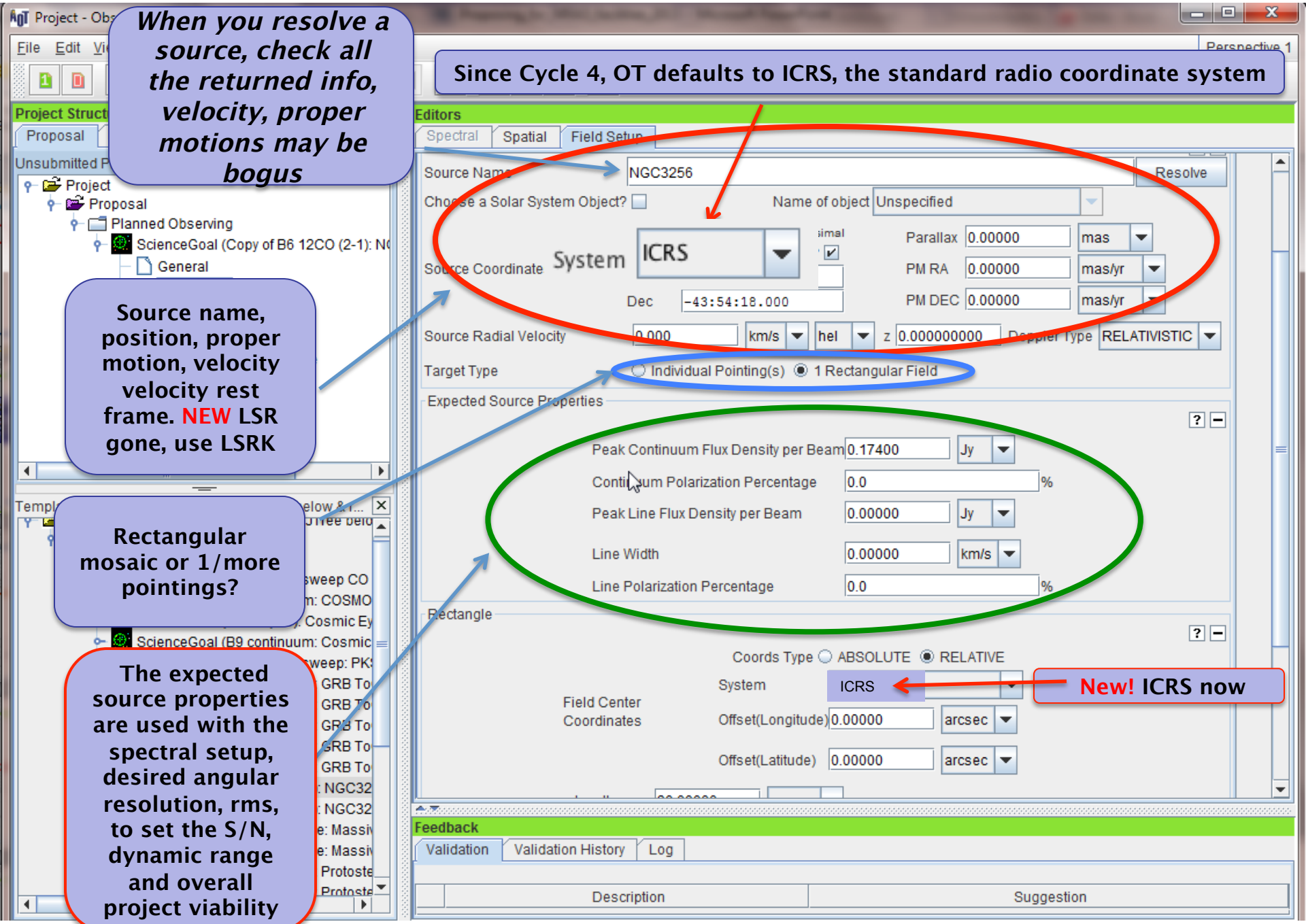


You're now ready to modify the Science Goal (SG)

Give the SG a brief, descriptive name.

A description is useful for you, for the technical assessors, and for your Contact Scientist after your project is approved.


When you resolve a source, check all the returned info, velocity, proper motions may be bogus
New: Cycle 4 OT defaults to ICRS, the standard radio coordinate system
Source name, position, proper motion, velocity velocity rest frame
The 10º limitation on source separation in one Science Goal was removed in Cycle 4: The OT groups targets using hierarchical clustering
Cycle3: more than one field source can have a mosaic but it's all with mosaics or none in one SG
Rectangular mosaic or 1/more pointings?
Cycle3: Linewidth *only* given in velocity units km/s or m/s
The expected source properties are used with the spectral setup, desired angular resolution, rms, to set the S/N, dynamic range and overall project viability
Project
Proposal
Planned Observing
ScienceGoal (Copy of B6 12CO (2-1): N
General
Editors
Spectral
Spatial
Field Setup
Source Name
NGC3256
Resolve
Name of object
Unspecified
ICRS
Parallax
0.00000
mas
Line Width
0.00000
km/s
Line Polarization Percentage
0.0
Rectangle
Coords Type
ABSOLUTE
RELATIVE
System
J2000
Field Center Coordinates
Offset(Longitude)
0.00000
arcsec
Offset(Latitude)
0.00000
arcsec
Feedback
Validation
Validation History
Log
Description
Suggestion


When you resolve a source, check all the returned info, velocity, proper motions may be bogus
Since Cycle 4, OT defaults to ICRS, the standard radio coordinate system
Source name, position, proper motion, velocity velocity rest frame. NEW LSR gone, use LSRK
Rectangular mosaic or 1/more pointings?
The expected source properties are used with the spectral setup, desired angular resolution, rms, to set the S/N, dynamic range and overall project viability
New! ICRS now
Project - Obs
File Edit
Perspective 1
Project Structure
Proposal
Unsubmitted P
Project
Proposal
Planned Observing
ScienceGoal (Copy of B6 12CO (2-1): N
General
Editors
Spectral
Spatial
Field Setup
Source Name
NGC3256
Resolve
Choose a Solar System Object?
Name of object
Unspecified
Source Coordinate System
ICRS
Parallax
0.00000
mas
PM RA
0.00000
mas/yr
Dec
-43:54:18.000
PM DEC
0.00000
mas/yr
Source Radial Velocity
0.000
km/s
hel
z
0.000000000
Doppler Type
RELATIVISTIC
Target Type
Individual Pointing(s)
1 Rectangular Field
Expected Source Properties
Peak Continuum Flux Density per Beam
0.17400
Jy
Continuum Polarization Percentage
0.0
%
Peak Line Flux Density per Beam
0.00000
Jy
Line Width
0.00000
km/s
Line Polarization Percentage
0.0
%
Rectangle
Coords Type
ABSOLUTE
RELATIVE
System
ICRS
Field Center Coordinates
Offset(Longitude)
0.00000
arcsec
Offset(Latitude)
0.00000
arcsec
Feedback
Validation
Validation History
Log
Description
Suggestion
ScienceGoal (B9 continuum: Cosmic
GRB To
NGC32
Protoste

ALMA Observing Tool (2014.6) – Observing Tool for ALMA Cycle3 Groundhog Day Test

File Edit View Tool Search Help

Perspective 1

Project Structure

Proposal | Program

Unsubmitted Proposal

- Observing Tool for ALMA Cycle3 Ground
  - Proposal
    - Planned Observing
      - ScienceGoal (Science Goal)
        - General
        - Field Setup
        - Spectral Setup
        - Calibration Setup
        - Control and Performance
        - Technical Justification

Template library. Turn the keys on the JTr...

- Template library. Turn the keys on th
  - Proposal
    - Planned Observing
      - ScienceGoal (B3 spectral sv
      - ScienceGoal (B7 continuum
      - ScienceGoal (B7 CO(9-8): (
      - ScienceGoal (B9 continuum
      - ScienceGoal (B3 spectral sv
      - ScienceGoal (B3 continuum
      - ScienceGoal (B6 continuum
      - ScienceGoal (B7 continuum
      - ScienceGoal (B6 continuum
      - ScienceGoal (B3 continuum
      - ScienceGoal (B6 12CO (2-1
      - ScienceGoal (B6 13CO (2-1
      - ScienceGoal (B6 spectral lir
      - ScienceGoal (B9 spectral lir
      - ScienceGoal (B3 continuum
      - ScienceGoal (B6 continuum

Editors

Spectral | Spatial | Field Setup

anti-bllac

Source

Source Name: anti-bllac — Resolve

Choose a Solar System Object? — Name of object: Unspecified

Source Coordinates — System: J2000 — Sexagesimal display? ✓

RA: 22:02:43.2912 — Dec: -42:16:39.978

Parallax: 0.0 mas — PM RA: 0.00000 mas/yr — PM DEC: 0.00000 mas/yr

Source Radial Velocity: 0.000 km/s hel — z: 0.000000000 — Doppler Type: RELATIVISTIC

Target Type: Individual Pointing(s) — 1 Rectangular Field

Expected Source Properties

Peak Continuum Flux Dens

Continuum Polarization Per %

Peak Line Flux Density per

Line Width

Line Polarization Percentag %

Field Center Coordinates

Custom Mosaic:

Pointing Pattern: Offset

Offset Unit: arcsec

#Pointings: 2

RA
22:02:44.2910
22:02:43.2910

Add | Delete | Import | Export

Add Source | Load from File... | Export to File... | Delete Source | Delete All Sources

NEW! CUSTOM MOSAICS ARE GONE! ALL OFFSET POINTINGS MUST OVERLAP

NEW! And they must lie with 5° of the source

ALMA Observing Tool (FEB2017) - Project

File Edit View Tool Search Help

Perspective 1

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 | Field Setup

SinglePoint

Source

Source Name | Resolve

Choose a Solar System Object? | Name of object: Unspecified

Source Coordinates — System: ICRS | Sexagesimal display? ☑ | Parallax: 0.00000 mas

RA: 00:00:00.0000 | PM RA: 0.00000 mas/yr

Dec: 00:00:00.000 | PM DEC: 0.00000 mas/yr

Source Radial Velocity: 0.000 km/s lsrk | z: 0.000000000 | Doppler Type: RADIO

Target Type: Individual Pointing(s) / 1 Rectangular Field

Expected Source Properties

Peak Continuum Flux Density per Synthesized

Continuum Polarization Percentage

Peak Line Flux Density per Synthesized Beam

Line Width

Line Polarization Percentage

Coord Type: Relative / Absolute

Offset Unit: arcsec

#Pointings: 1

RA [arcsec]	Dec [arcsec]
0.00000	0.00000

Add | Delete | Import | Export

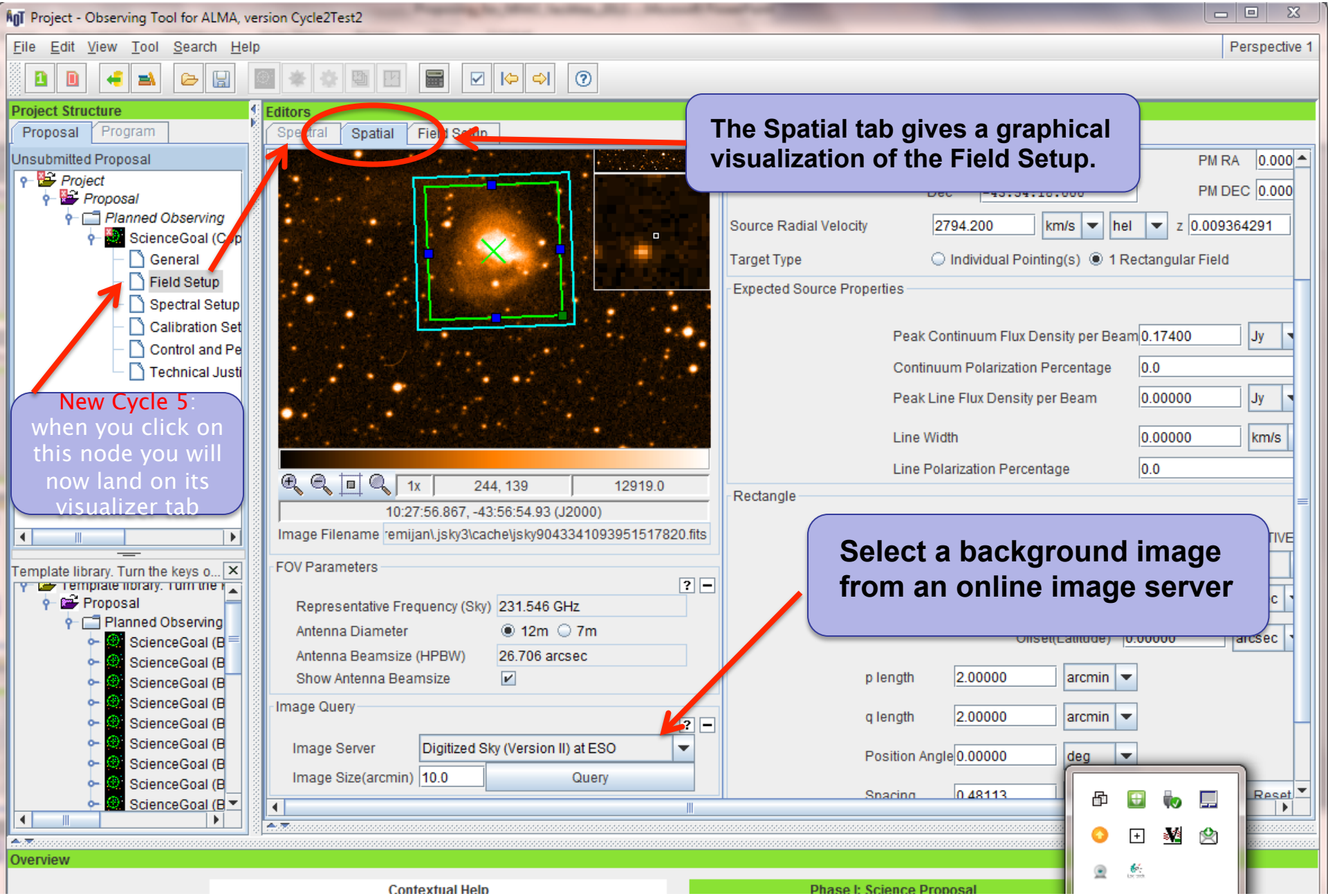
Add Source | Load from File... | Export to File... | Clone Source | Delete Source | Delete All Sources

Individual offset pointings, must overlap in Cycle 5
Can be offsets or absolute positions. The OT will convert if you check/uncheck Coord Type

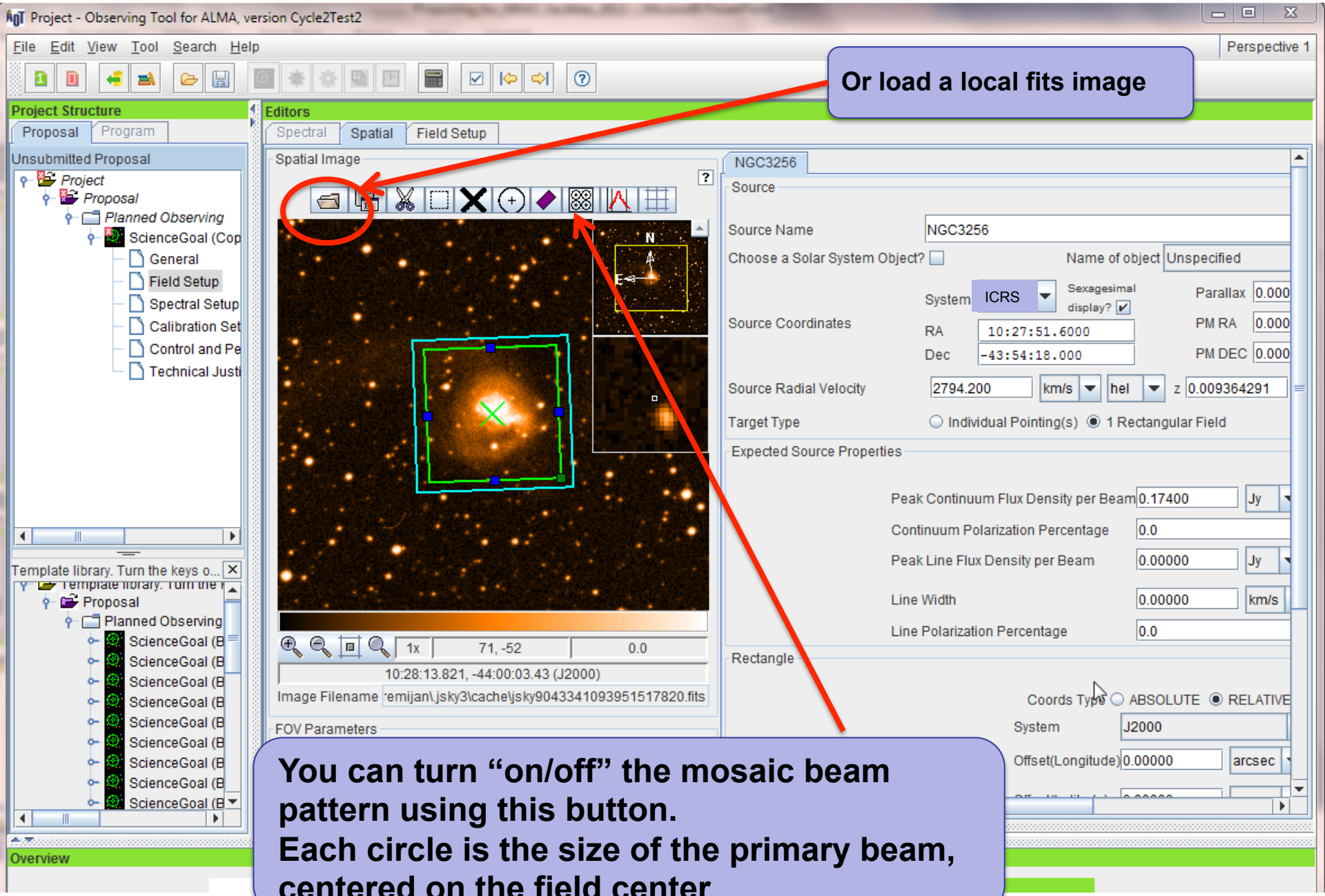
Read/write the offset pointings from/to a text file

NEW!! Option to clone an entire Field Source in addtion to add, load, export ..

Crafting mosaics



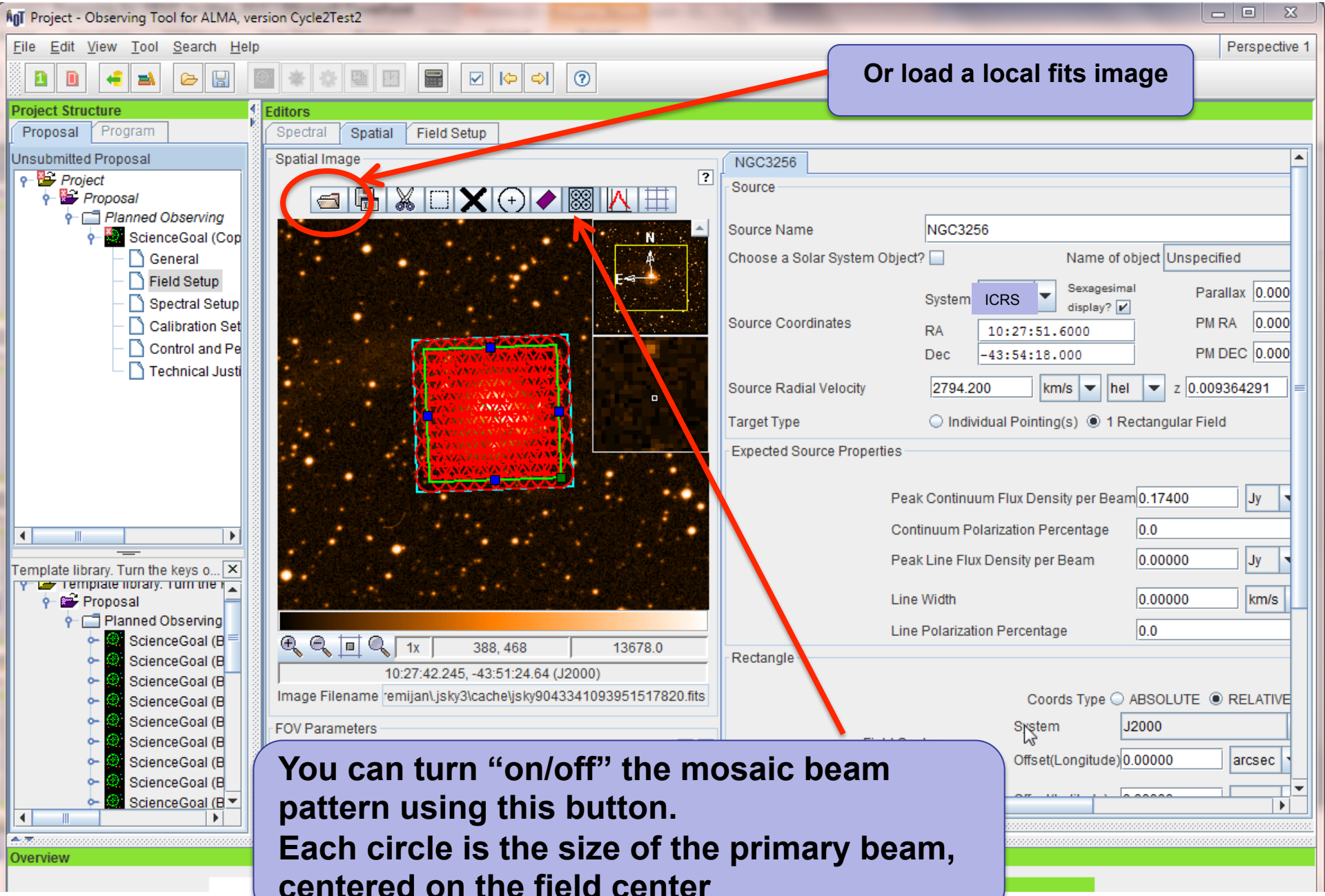
Crafting mosaics



Or load a local fits image

You can turn "on/off" the mosaic beam pattern using this button.
Each circle is the size of the primary beam, centered on the field center

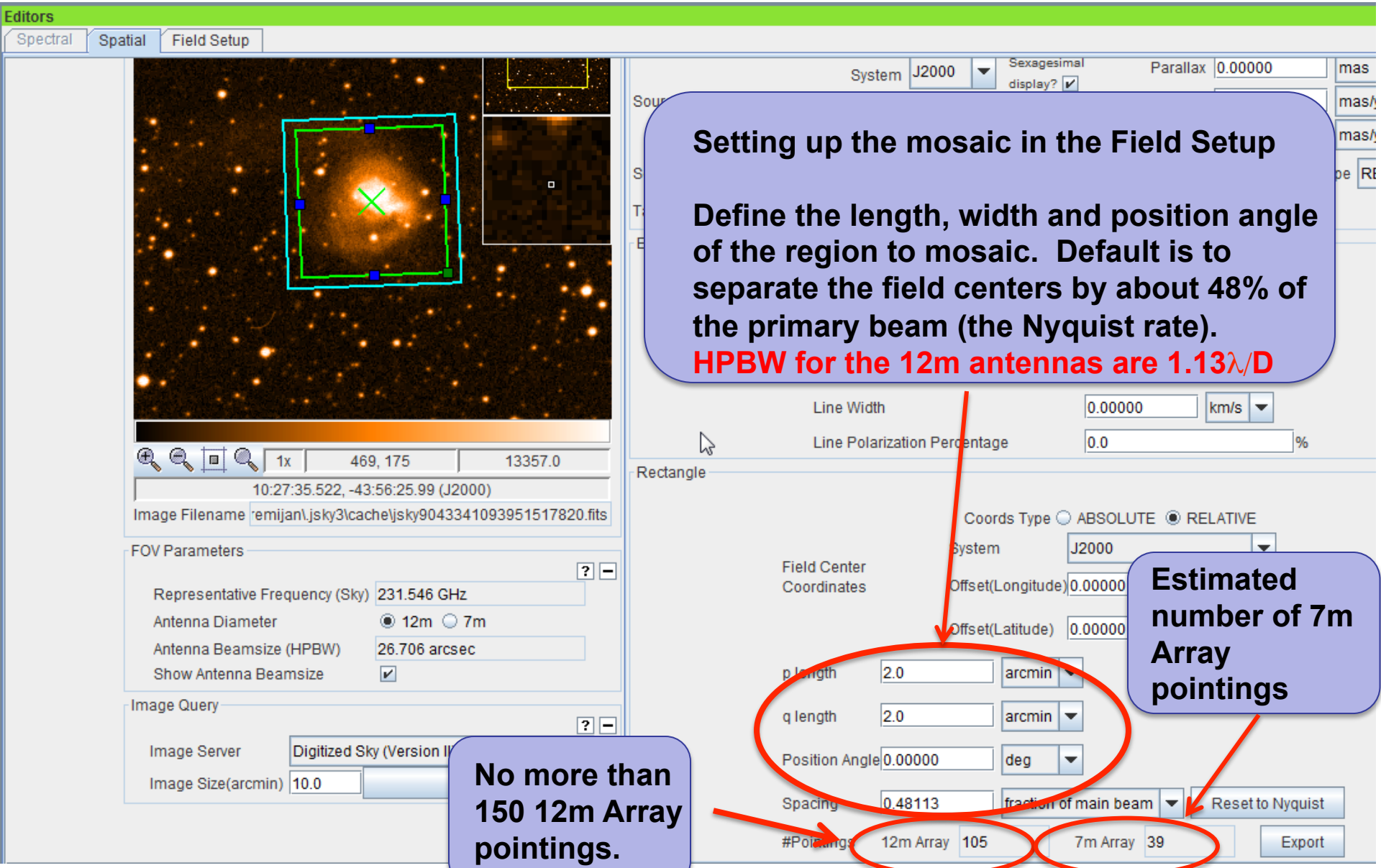
Crafting mosaics



Or load a local fits image

You can turn "on/off" the mosaic beam pattern using this button.
Each circle is the size of the primary beam, centered on the field center

Crafting mosaics



Setting up the mosaic in the Field Setup

Define the length, width and position angle of the region to mosaic. Default is to separate the field centers by about 48% of the primary beam (the Nyquist rate).

HPBW for the 12m antennas are 1.13λ/D

Estimated number of 7m Array pointings

No more than 150 12m Array pointings.

Spectral Setup

- CO lines and continuum observations

Baseband-1

Fraction	Centre Freq (rest,hel)	Centre Freq (sky,hel)	Transition	Bandwidth, Resolution (smoothed)	Spec. Avg.	Representative Window
1(Full)	98.70000 GHz	97.78432 GHz	continuum	1875.000 MHz(5748 km/s), 31.250 MHz(95.808 km/s)	1	◉

Add spectral window centred on a spectral line | Add spectral window manually | Delete | ☐ Show image spectral windows

Baseband-2

1/2	97.98095 GHz	97.07194 GHz	CS v=0 2-1	117.188 MHz(362 km/s), 141.113 kHz(0.436 km/s)	2	○
1/2	99.73096 GHz	98.80571 GHz	CH3OH v t=1 6(...	117.188 MHz(356 km/s), 141.113 kHz(0.428 km/s)	2	○

Add spectral window centred on a spectral line | Add spectral window manually | Delete | ☐ Show image spectral windows

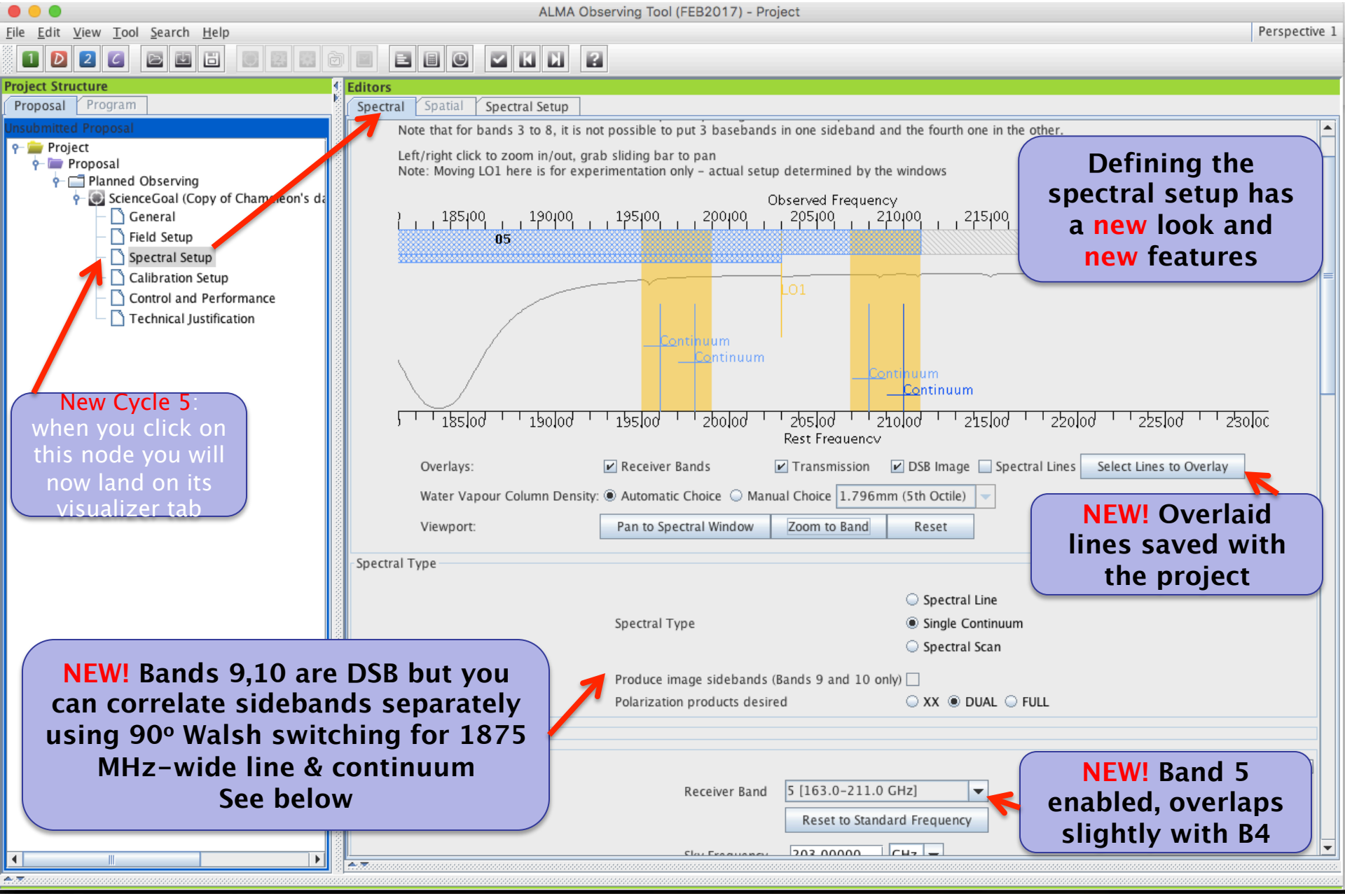
Baseband-3

1(Full)	113.17238 GHz	112.12243 GHz	CO v=2 1-0	234.375 MHz(627 km/s), 141.113 kHz(0.377 km/s)	2	○

Add spectral window centred on a spectral line | Add spectral window manually | Delete | ☐ Show image spectral windows

Baseband-4

1(Full)	110.20135 GHz	109.17897 GHz	13CO v=0 1-0	234.375 MHz(644 km/s), 141.113 kHz(0.387 km/s)	2	○


ALMA Observing Tool (FEB2017) - Project
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Perspective 1
Project Structure
Proposal Program
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ScienceGoal (Copy of Chameleon's da
General
Field Setup
Spectral Setup
Calibration Setup
Control and Performance
Technical Justification
Editors
Spectral Spatial Spectral Setup
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
Observed Frequency
05
LO1
Continuum
Continuum
Continuum
Continuum
Rest Frequency
Overlays: Receiver Bands Transmission DSB Image Spectral Lines Select Lines to Overlay
Water Vapour Column Density: Automatic Choice Manual Choice 1.796mm (5th Octile)
Viewport: Pan to Spectral Window Zoom to Band Reset
Spectral Type
Spectral Type
Spectral Line
Single Continuum
Spectral Scan
Produce image sidebands (Bands 9 and 10 only)
Polarization products desired XX DUAL FULL
Receiver Band 5 [163.0-211.0 GHz]
Reset to Standard Frequency
Defining the spectral setup has a new look and new features
New Cycle 5: when you click on this node you will now land on its visualizer tab
NEW! Overlaid lines saved with the project
NEW! Bands 9,10 are DSB but you can correlate sidebands separately using 90° Walsh switching for 1875 MHz-wide line & continuum See below
NEW! Band 5 enabled, overlaps slightly with B4

ALMA Observing Tool (FEB2017) - Project

File Edit View Tool Search Help

Perspective 1

Project Structure

Proposal | Program

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        - General
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        - Calibration Setup
        - Control and Performance
        - Technical Justification

Editors

Spectral | Spatial | Spectral Setup

Spectral Line

Baseband-1

Fraction	Centre Freq (rest,lsrk)	Centre Freq (sky,bar)	Transition	Bandwidth, Resolutio	presentative Window
1(Full)	98.70000 GHz	98.69607 GHz	continuum	1875.000 MHz(5695 km/s), 31.250 MH	

Add spectral window centred on a spectral line | Add spectral window manually | Delete | Show image spectral windows

Baseband-2

1/2	97.99517 GHz	97.99127 GHz	l-C3H v=0 J=9...	58.594 MHz(179 km/s), 7 .557 kHz(0.216 km/s)	2	
1/2	97.98095 GHz	97.97705 GHz	CS v=0 2-1	58.594 MHz(179 km/s), 6 .035 kHz(0.187 km/s)	1	

Add spectral window centred on a spectral line | Add spectral window manually | Delete | Show image spectral windows

Baseband-3

1/2	86.67076 GHz	86.66731 GHz	HCO 1(0,1)-0(...	58.594 MHz(203 km/s), 61.035 kHz(0.211 km/s)	1	
1/2	87.31690 GHz	87.31342 GHz	CCH v=0 N=1-...	58.594 MHz(201 km/s), 61.035 kHz(0.210 km/s)	1	

Add spectral window centred on a spectral line | Add spectral window manually | Delete | Show image spectral windows

Baseband-4

			1-0	58	1	
			-0	58	1	

Add spe ... tral windows

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

1) ADD spectral windows to get started!

This option will call up a version of the spectral line picker. Windows added this way retain line id and other info from the splatalog

Frequencies may also be entered by hand

Select Spectral Lines

Transition Filter

CO*

☑ Include description

Frequency Filters

ALMA Band

1 2 3 4 5 6 7 8 9 10

Sky Frequency (GHz)

Min 31.3 Max 950

Receiver/Back End Configuration

☐ Hide unobservable lines

Filtering unobservable lines

Maximum Upper-state Energy (K)

0 20 40 60 80 100 ∞

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.

Find More...

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 alread

Transition	Description	Rest Frequency	Sky Frequency	Upper-state Energy	Lovas Intensity	
CO v=2 1-0	Carbon Monoxide	113.172 GHz	113.172 GHz	6134.675 K		0.01
CO v=1 1-0	Carbon Monoxide	114.222 GHz	114.222 GHz	3089.154 K		0.01
CO v=0 1-0	Carbon Monoxide	115.271 GHz	115.271 GHz	5.532 K	60	0.01
CO v=2 2-1	Carbon Monoxide	226.34 GHz	226.34 GHz	6145.538 K		0.02
CO v=1 2-1	Carbon Monoxide	228.439 GHz	228.439 GHz	3100.118 K	0.62	0.02
CO v=0 2-1	Carbon Monoxide	230.538 GHz	230.538 GHz	16.596 K	70	0.02
CO+ J=2-1, F=3/2-1/2	Carbon Monoxide Ion	235.79 GHz	235.79 GHz		0.1	0.66
CO+ J=2-1, F=5/2-3/2	Carbon Monoxide Ion	236.063 GHz	236.063 GHz		0.1	1.2
CO v=2 3-2	Carbon Monoxide	339.5 GHz	339.5 GHz	6161.831 K		0.03
CO v=1 3		342.648 GHz	342.648 GHz	3116.561 K	0.71	0.03
CO v=0 3		345.796 GHz	345.796 GHz	33.192 K	70	0.03
CO+ J=3		353.741 GHz	353.741 GHz		0.1	1.2
CO+ J=3-2, F=7/2-5/2	Carbon Monoxide Ion	354.014 GHz	354.014 GHz		0.18	1.71
CO v=2 4-3	Carbon Monoxide	452.645 GHz	452.645 GHz	6183.555 K		0.04
CO v=1 4-3	Carbon Monoxide	456.843 GHz	456.843 GHz	3138.486 K		0.04
CO v=0 4-3	Carbon Monoxide	461.041 GHz	461.041 GHz	55.317 K	60	0.04
CO v=2 5-4	Carbon Monoxide	565.774 GHz	565.774 GHz	6210.707 K		0.06
CO v=1 5-4	Carbon Monoxide	571.021 GHz	571.021 GHz	3165.891 K		0.06
CO v=0 5-4	Carbon Monoxide	576.268 GHz	576.268 GHz	82.974 K		0.06
CO			678.88 GHz	6243.288 K		0.07
CO			685.176 GHz	3198.774 K		0.07
CO			691.473 GHz	116.159 K	100	0.07
CO			791.96 GHz	6281.296 K		0.08
CO v=1 7-6	Carbon Monoxide	799.306 GHz	799.306 GHz	3237.134 K		0.08
CO v=0 7-6	Carbon Monoxide	806.652 GHz	806.652 GHz	154.872 K	110	0.08
CO v=2 8-7	Carbon Monoxide	905.009 GHz	905.009 GHz	6324.729 K		0.09

Add to Selected Transitions

Selected transitions

Transition	Description	Rest Frequency	Sky Fre
CO v=0 2-1		230.538 GHz	230.538 GHz

Remove from Selected Transitions

Select a line from the list

Filters can be used to narrow the search

ALMA Observing Tool (FEB2017) - Project

File Edit View Tool Search Help

Perspective 1

Project Structure

Proposal | Program

Unsubmitted Proposal

- Project
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        - Spectral Setup
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        - Control and Performance
        - Technical Justification

Editors

Spectral | Spatial | Spectral Setup

Spectral Line

Baseband-1

Fraction	Centre Freq (rest,lsrk)	Centre Freq (sky,bar)	Transition	Bandwidth, Resolution (smoothed)	Spec. Avg.	Representative Window
1(Full)	98.70000 GHz	98.69637 GHz	continuum	1875.000 MHz(5695 km/s), 31.250 MHz(94.923 km/s)	1	

Add spectral window manually | Delete | Show image spectral windows

				58.594 MHz(179 km/s), 70.557 kHz(0.216 km/s)	2	
				58.594 MHz(179 km/s), 61.035 kHz(0.187 km/s)	1	

Add spectral window centred on a spectral line | Add spectral window manually | Delete | Show image spectral windows

Baseband-3

1/2	86.67076 GHz	86.66731 GHz	HCO 1(0,1)-0(...	58.5	1	
1/2	87.31690 GHz	87.31342 GHz	CCH v=0 N=1-...	58.5	1	

Add spectral window centred on a spectral line | Add spectral window manually | Delete | Show image spectral windows

Baseband-4

			1-0	58.594 MHz(198 km/s), 61.035 kHz(0.206 km/s)	1	◉
			-0	58.594 MHz(197 km/s), 61.035 kHz(0.205 km/s)	1	

Add spectral window manually | Delete | Show image spectral windows

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

NEW!! Sky frequency shown in barycentric frame so rest and sky frequency differ even when $V_{lsrk}=0$

NEW!! Default spectral binning is 2

NEW! Once a window is defined with a rest frequency within, the window must always thereafter contain that rest frequency or the OT will complain

ALMA Observing Tool (FEB2017) - Project

File Edit View Tool Search Help

Perspective 1

Project Structure

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Editors

Spectral | Spatial | Spectral Setup

Polarization products desired: XX, DUAL, FULL

Spectral Setup Errors

No suitable receiver band for the range :[0.0 GHz, 98.02251613655123 GHz]

Spectral Line

Baseband-1

Fraction	Centre Freq (rest,lsrk)	Centre Freq (sky,bar)	Transition	Bandwidth, Resolution (smoothed)	Spec. Avg.	Representative Window
1(Full)	0.00000 GHz	0.00000 GHz	...Enter Name ...	58.594 MHz, 30.518 kHz	1	

58.594 MHz, 30.518 kHz
117.188 MHz, 61.035 kHz
234.375 MHz, 122.070 kHz
468.750 MHz, 244.141 kHz
937.500 MHz, 488.281 kHz
1875.000 MHz, 976.563 kHz
1875.000 MHz, 31.250 MHz

Add spectral window centred on a spectral line | Add

Baseband-2

1/2	97.99517 GHz	97.99127 GHz	l-C3H v=0 J=9...	58.594 MHz, 70.557 kHz	2	
1/2	97.98095 GHz	97.97705 GHz	CS v=0 2-1	58.594 MHz, 61.035 kHz	1	

Add spectral window centred on a spectral line | Add spectral window manually | Delete | Show image spectral windows

Baseband-3

1/2	86.67076 GHz	86.66731 GHz	HCO 1(0,1)-0(...	58.594 MHz, 61.035 kHz	1	
1/2	87.31690 GHz	87.31342 GHz	CCH v=0 N=1-...	58.594 MHz, 61.035 kHz	1	

Add spectral window centred on a spectral line | Add spectral window manually | Delete | Show image spectral windows

Baseband-4

1/2	88.63160 GHz	88.62807 GHz	HCN v=0 J=1-0	58.594 MHz, 61.035 kHz	1	
1/2	89.18853 GHz	89.18498 GHz	HCO+ v=0 1-0	58.594 MHz, 61.035 kHz	1	

Add spectral window centred on a spectral line | Add spectral window manually | Delete | Show image spectral windows

Double click this field to select the desired bandwidth/resolution from a dropdown list

ALMA Observing Tool (FEB2017) - Project

File Edit View Tool Search Help

Perspective 1

Failing to rename a new spw brings a validation error

Channel binning = spectral averaging
New! default is 2

Spectral specs share a baseband, sum of shares can't exceed 1

Project Structure

Proposal | Program

Unsubmitted Proposal

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Editors

Spectral | Spatial | Spectral Setup

Polarization products desired

Spectral Setup Errors

No suitable receiver band for the range :[0.0 GHz, 98.02251613655123 G

Spectral Line

Baseband-1

Fraction	Centre Freq (rest,lsrk)	Centre Freq (sky,bar)	Transition	Bandwidth, Resolution (smoothed)	Spec. Avg.	Representative Window
1(Full)	0.00000 GHz	0.00000 GHz	...Enter Name ...	58.594 MHz, 30.518 kHz	1	

58.594 MHz, 30.518 kHz
117.188 MHz, 61.035 kHz
234.375 MHz, 122.070 kHz
468.750 MHz, 244.141 kHz
937.500 MHz, 488.281 kHz
1875.000 MHz, 976.563 kHz
1875.000 MHz, 31.250 MHz

Add spectral window centred on a spectral line | Add

Baseband-2

1/2	97.99517 GHz	97.99127 GHz	l-C3H v=0 J=9...	58.594 MHz, 70.557 kHz	2	
1/2	97.98095 GHz	97.97705 GHz	CS v=0 2-1	58.594 MHz, 61.035 kHz	1	

Add spectral window centred on a spectral line | Add spectral window m

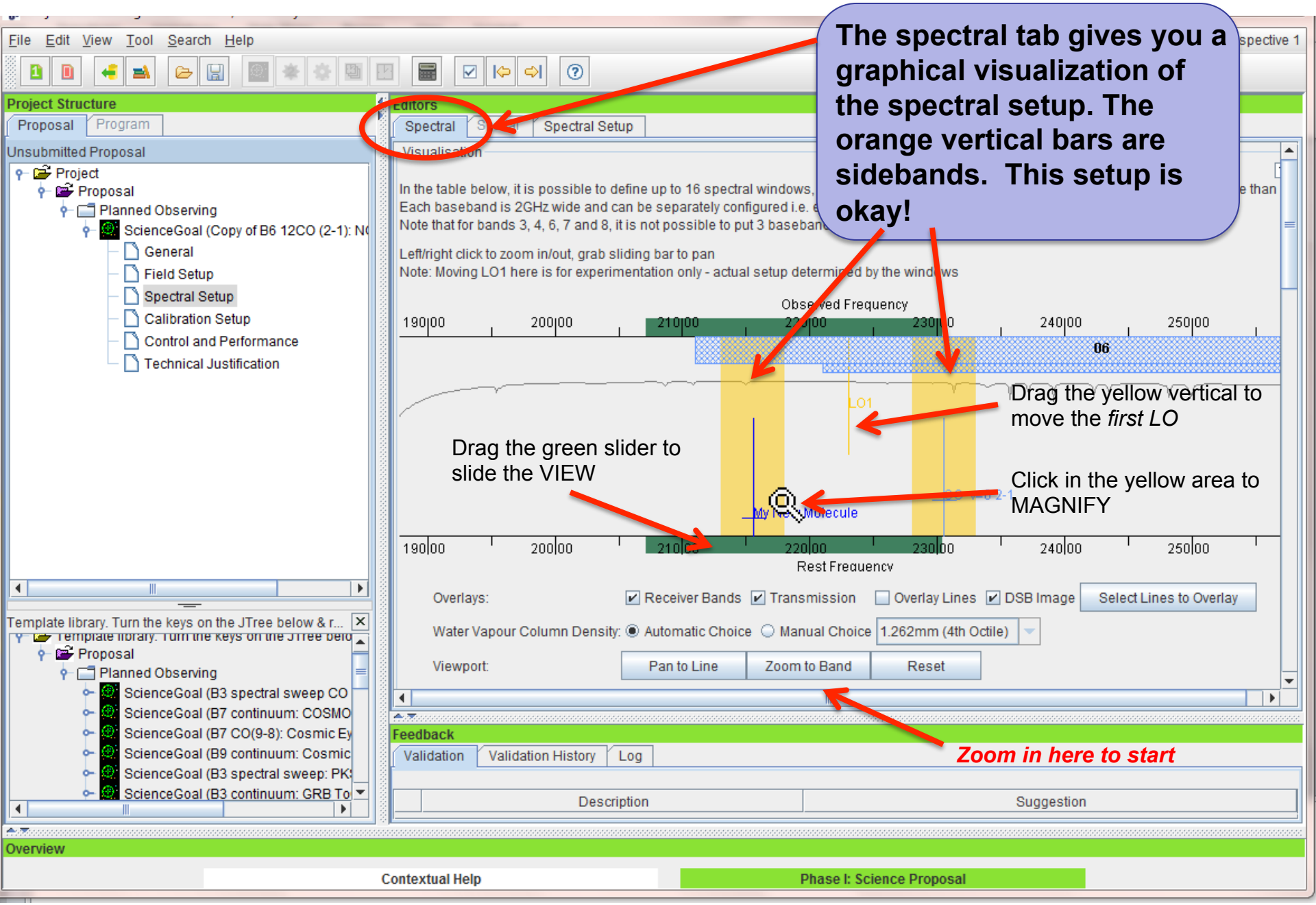
Baseband-3

1/2	86.67076 GHz	86.66731 GHz	HCO 1(0,1)-0(...	58.594 MHz, 61.035 kHz	1	
1/2	87.31690 GHz	87.31342 GHz	CCH v=0 N=1-...	58.594 MHz, 61.035 kHz	1	

ectral window manually | Delete | Show image spectral windows

58.594 MHz, 61.035 kHz	1	
58.594 MHz, 61.035 kHz	1	

Add spectral window centred on a spectral line | Add spectral window manually | Delete | Show image spectral windows


The spectral tab gives you a graphical visualization of the spectral setup. The orange vertical bars are sidebands. This setup is okay!
Drag the yellow vertical to move the first LO
Drag the green slider to slide the VIEW
Click in the yellow area to MAGNIFY
Zoom in here to start
File Edit View Tool Search Help
Project Structure
Proposal
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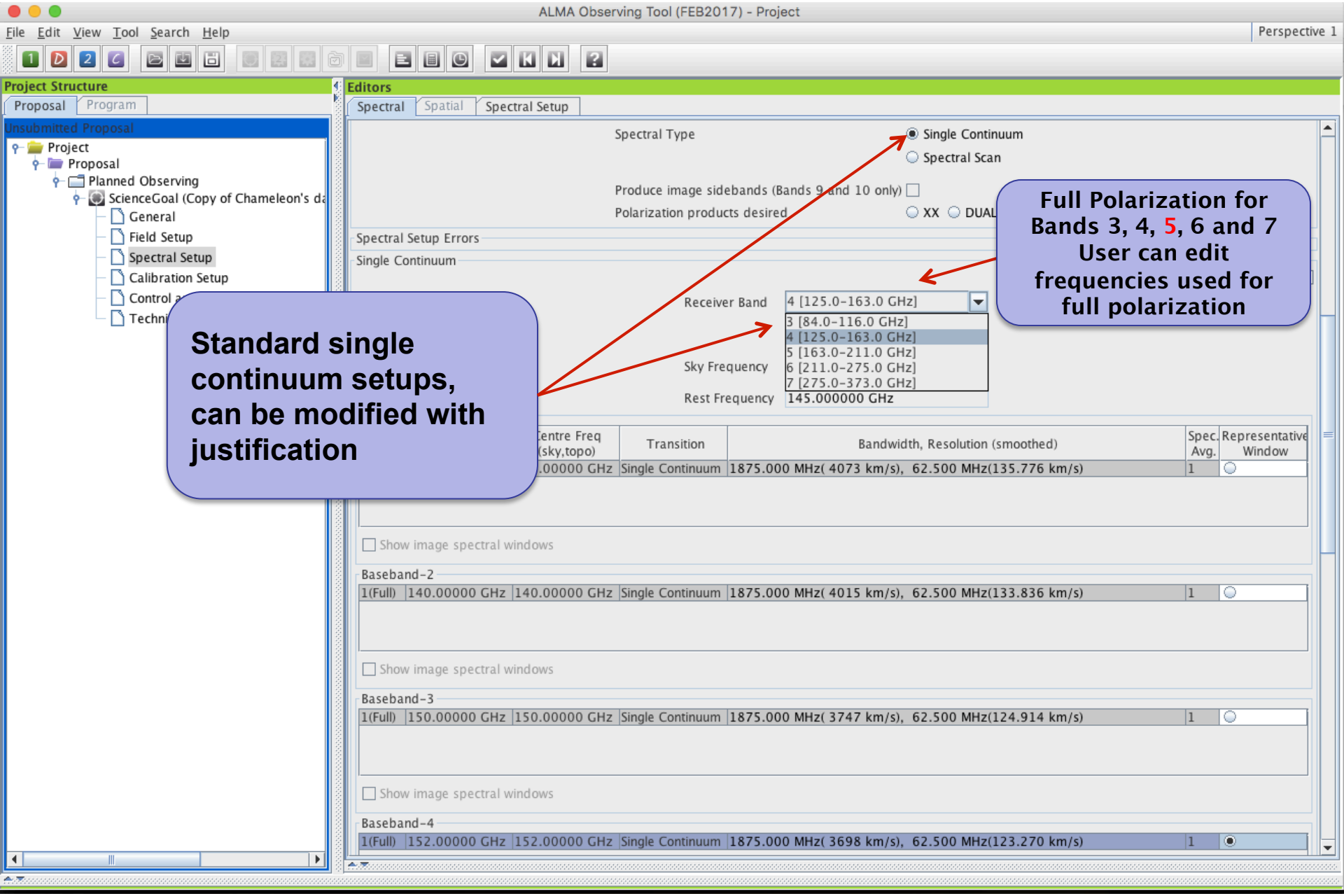
Project
Proposal
Planned Observing
ScienceGoal (Copy of B6 12CO (2-1): N
General
Field Setup
Spectral Setup
Calibration Setup
Control and Performance
Technical Justification
Editors
Spectral
Spectral Setup
Visualisation
Observed Frequency
190|00
200|00
210|00
220|00
230|00
240|00
250|00
06
LO1
Rest Frequency
Overlays:
Receiver Bands
Transmission
Overlay Lines
DSB Image
Select Lines to Overlay
Water Vapour Column Density:
Automatic Choice
Manual Choice
1.262mm (4th Octile)
Viewport:
Pan to Line
Zoom to Band
Reset
Feedback
Validation
Validation History
Log
Description
Suggestion
Template library. Turn the keys on the JTree below & r...
Proposal
Planned Observing
ScienceGoal (B3 spectral sweep CO
ScienceGoal (B7 continuum: COSMO
ScienceGoal (B7 CO(9-8): Cosmic Ey
ScienceGoal (B9 continuum: Cosmic
ScienceGoal (B3 spectral sweep: PK
ScienceGoal (B3 continuum: GRB To
Overview
Contextual Help
Phase I: Science Proposal

Full Continuum & Polarization



Automated spectral scan - I

Project - Observing Tool for ALMA, version Cycle2Test2

File Edit View Tool Search Help

Perspective 1

Project Structure

Proposal | Program

Unsubmitted Proposal

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        - Control and Perf
        - Technical Justifi

Template library. Turn the keys on...

- Proposal
  - Planned Observing
    - ScienceGoal (B3
    - ScienceGoal (B7
    - ScienceGoal (B7
    - ScienceGoal (B9
    - ScienceGoal (B3
    - ScienceGoal (B3
    - ScienceGoal (B6
    - ScienceGoal (B7
    - ScienceGoal (B6
    - ScienceGoal (B3
    - ScienceGoal (B6

Editors

Spectral | Spatial | Spectral Setup

Spectral Type: Spectral Line / Single Continuum / Spectral Scan

Polarization products desired: XX / DUAL / FULL

Spectral Setup Errors

Spectral Scan

Requested start frequency (sky)	95.0	GHz
Requested end frequency (sky)	107.0	GHz
Requested range (rest)	95.8896 GHz - 108.0020 GHz	
Achieved scan range (sky)	95.0 GHz - 110.0 GHz	
Bandwidth, Resolution (Hanning smoothed)	1875.000 MHz, 976.563 kHz	
Spectral averaging	1	
Representative frequency (sky)	102.50000	GHz

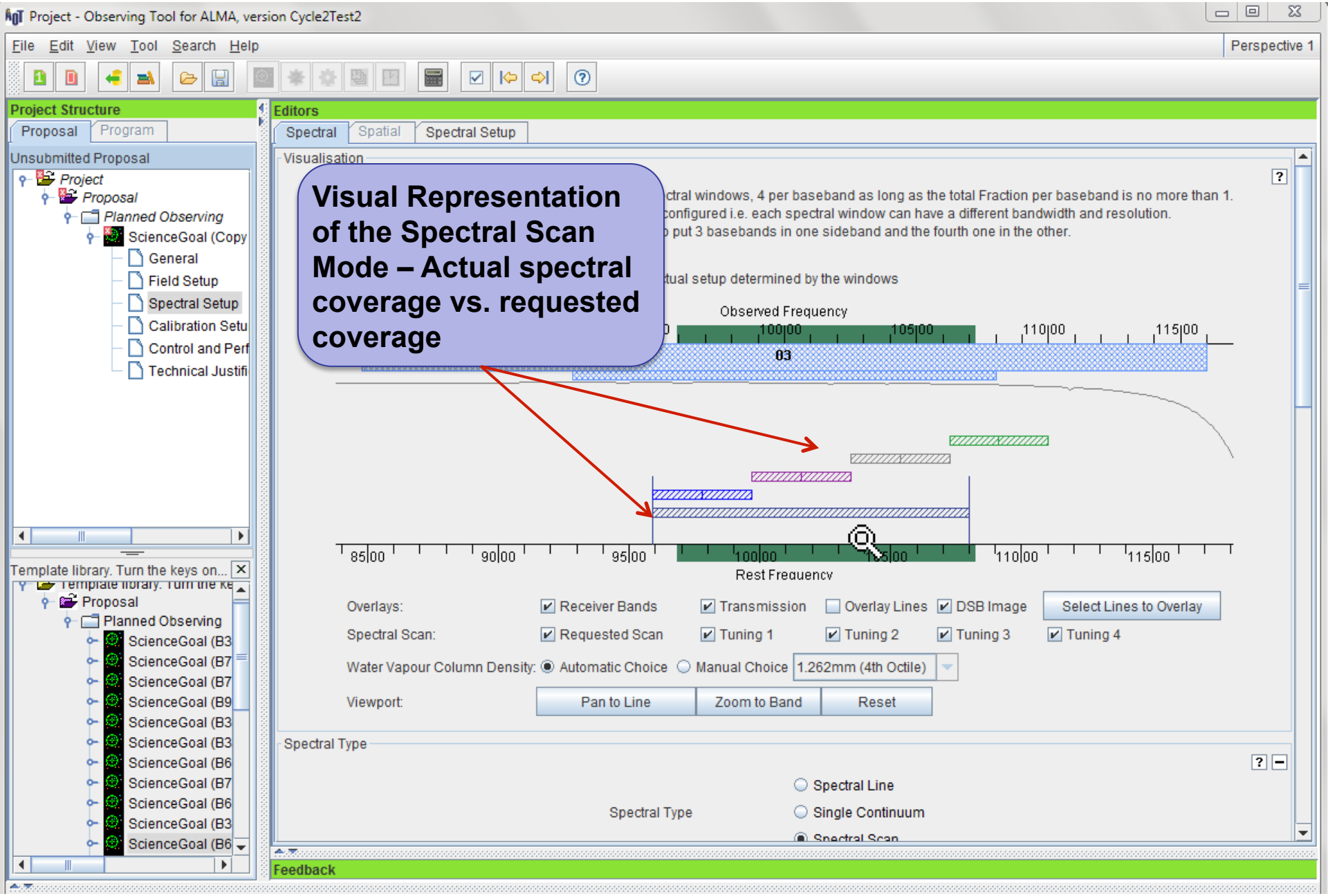
The representative frequency defined in the observed frame is used in conjunction with the sensitivity entered on the 'Control and Performance' page to estimate the required observing time and to set the size of the antenna beam shown in the 'Spatial Visual' editor. The representative frequency defaults to the average mid-frequency of the achieved scan range but may be subsequently set by the user to any frequency within the achieved scan range.

Tuning (Max. 5)	SPW 1 (GHz)	SPW 2 (GHz)
1	95.9375 GHz	97.8125 GHz
2	99.6875 GHz	101.5625 GHz
3	103.4375 GHz	105.3125 GHz
4	107.1875 GHz	109.0625 GHz

Automated Spectral Scan mode and tunings

Feedback

Automated spectral scan - II



Saving spw & line rest frequencies

ALMA Observing Tool (FEB2017) - Project

File Edit View Tool Search Help

Perspective 1

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Editors

Spectral | Spatial | Spectral Setup

Representative Frequency

The representative frequency is used in conjunction with the sensitivity entered on the 'Control an observing time and to set the size of the antenna beam shown in the 'Spatial Visual' editor. If the not fall in the centre of the chosen spectral window, its frequency can be changed here. The sky shown in the targets table below.

152.00000 GHz

Rest Frequencies

Please set the rest frequencies of spectral lines that will be observed. These will to set the velocity scale and will enhance the ALMA Science Archive. We recomme once the spectral setup is fully defined.

Define Rest Frequencies

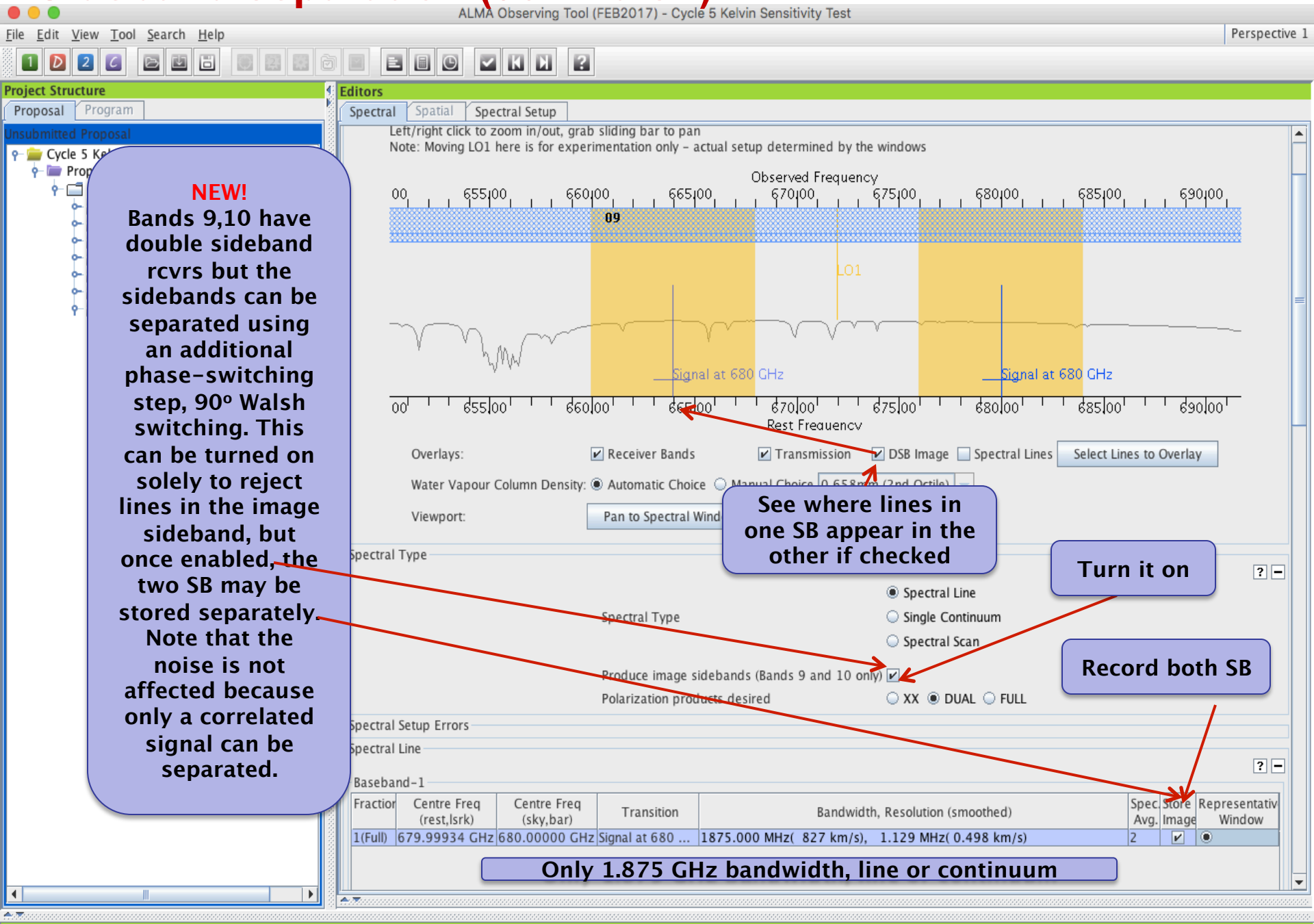
Targets

Source Name	Velocity		System	Representative Frequency (Sky)
J0942-7731...	0.0	km/s	lsrk	152.0000 GHz
J1058-8003...	0.0	km/s	lsrk	152.0000 GHz
J1136-6827...	0.0	km/s	lsrk	152.0000 GHz
J1145-6954...	0.0	km/s	lsrk	152.0000 GHz
J1147-6753...	0.0	km/s	lsrk	152.0000 GHz
J1152-8344...	0.0	km/s	lsrk	152.0000 GHz
J1224-8313...	0.0	km/s	lsrk	152.0000 GHz
B1251-713...	0.0	km/s	lsrk	152.0000 GHz
J1312-7724...	0.0	km/s	lsrk	152.0000 GHz
J1550-8258...	0.0	km/s	lsrk	152.0000 GHz
J1617-7717...	0.0	km/s	lsrk	152.0000 GHz
J1723-7713...	0.0	km/s	lsrk	152.0000 GHz
J1733-7935...	0.0	km/s	lsrk	152.0000 GHz

NEW! This will call up a version of the spec. line picker to add rest frequencies that may fall in spectral windows. This can be used later in data reduction to set velocity scales for lines that fall within a spectral window

List of saved rest frequencies including:
+ spw centers
+ Saved overlaid lines (if desired)
+ Defined Rest Frequencies

Sideband separation (90º Walsh)



NEW!
Bands 9,10 have double sideband rcvrs but the sidebands can be separated using an additional phase-switching step, 90º Walsh switching. This can be turned on solely to reject lines in the image sideband, but once enabled, the two SB may be stored separately. Note that the noise is not affected because only a correlated signal can be separated.

See where lines in one SB appear in the other if checked

Turn it on

Record both SB

Only 1.875 GHz bandwidth, line or continuum

Control and Performance

- Desired Angular Resolution
  - Try the Single option first, with 1 arcsec resolution
  - Largest Angular Structure : 29 arcsec
  - Desired mosaic sensitivity: 0.0034 Jy

  - Click on Time Estimate

  - Try the Range option, and see how the time estimation and configuration options change

ALMA Observing Tool (FEB2017) - Project

File Edit View Tool Search Help

Control and Performance defines the required angular resolution, sensitivity, largest angular scale, etc.

Project Structure

Proposal | Program

Unsubmitted Proposal

- Project
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Editors

Spectral | Spatial | Control and Performance

These parameters are used to control various aspects of the observat

Control and Performance

Configuration Information

Antenna Beamsize (1.13 * λ / D)	12m	38.309 arcsec	7m	65.672 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	16.197 km
Synthesized beamsize	10.103 arcsec	2.906 arcsec	0.033 arcsec
Shortest baseline	0.009 km	0.015 km	0.256 km
Maximum recoverable scale	47.725 arcsec	24.192 arcsec	0.409 arcsec

Array properties summarized

Desired Performance

Desired Angular Resolu

Largest Angular Structure in source: 0.00000 arcsec

Desired sensitivity per pointing: 0.00350 Jy equivalent to 20.581 mK

Bandwidth used for Sensitivity: AggregateBandWidth Frequency Width 7.500000 GHz

Science goal integration time estimate: Time Estimate

Override OT's sensitivity-based time estimate (must be justified): Yes No

Are the observations time-constrained? Yes No

ALMA Observing Tool (FEB2017) - Cycle 5 Kelvin Sensitivity Test

File Edit View Tool Search Help

Perspective 1

Project Structure

Proposal | Program

Unsubmitted Proposal

- Cycle 5 Kelvin Sensitivity Test
  - Proposal
    - Planned Observing
      - ScienceGoal (Range 1.05" .. 3" las
        - General
        - Field Setup
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        - Calibration Setup
        - Control and Performance
        - Technical Justification
      - ScienceGoal (Single at 1.053" las=
        - General
        - Field Setup
        - Spectral Setup
        - Calibration Setup
        - Control and Performance
        - Technical Justification
      - ScienceGoal (Single at 2" las=29")
        - General
        - Field Setup
        - Spectral Setup
        - Calibration Setup
        - Control and Performance
        - Technical Justification
      - ScienceGoal (Single at 3" las=29")
        - General
        - Field Setup
        - Spectral Setup
        - Calibration Setup
        - Control and Performance
        - Technical Justification
      - ScienceGoal (Range 1.05" .. 2.63"
        - General
        - Field Setup
        - Spectral Setup
        - Calibration Setup

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.

Control and Performance

Configuration Information

Antenna Beamsize (1.13 * λ / D)	12m	65.288 ar	
Number of Antennas	12m	43	
	ACA 7m configura		
Longest baseline	0.049 km	0.161 km	16.197 km
Synthesized beamsize	14.158 arcsec	3.882 arcsec	0.048 arcsec
Shortest baseline	0.009 km	0.015 km	0.256 km
Maximum recoverable scale	75.610 arcsec	33.005 arcsec	0.568 arcsec

Desired Performance

Desired Angular Resolution (Synthesized Beam) ○ Single ◉ Range ○ Any ○ Standalone ACA

1.05000 arcsec to 3.00000 arcsec

Largest Angular Structure in source 29.00000 arcsec

Desired sensitivity per pointing 0.10000 K equivalent to 721.13 uJy @ 1.05 "

will provide 12.316 mK @ 3.00 "

Resolu

Are the observations time-constrained? ○ Yes ◉ No

Control and Performance defines the required angular resolution, sensitivity, largest angular scale, etc.

Specify the desired rms Jy/beam noise level and the bandwidth over which that should be measured

the bandwidth for sensitivity must not be less than the channel spacing in the representative spw

ALMA Observing Tool (FEB2017) - Project

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Perspective 1

Project Structure

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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.

Control and Performance

Configuration Information

Antenna Beamsize (1.13 * λ / D)	12m	38.309 arcsec	7m	65.672 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	16.197 km
Synthesized beamsize	10.103 arcsec	2.906 arcsec	0.033 arcsec
Shortest baseline	0.009 km	0.0	
Maximum recoverable scale	47.725 arcsec	24	

Desired Performance

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

3.00000 arcsec

Largest Angular Structure in source 2.0 arcsec

Desired sensitivity per pointing 0.00350 Jy equivalent to 20.581 mK

Bandwidth used for Sensitivity AggregateBandWidth Frequency Width 7.500000 GHz

Science goal integration time estimate Time Estimate

Override OT's sensitivity-based time estimate (must be justified) Yes No

Are the observations time-constrained? Yes No

New! angular resolution options

Single is like before

at desired resolution

ALMA Observing Tool (FEB2017) - Project

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Perspective 1

Project Structure

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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.

Control and Performance

Configuration Information

Antenna Beamsize (1.13 * λ / D)	12m	38.309 arcsec	7m	65.672 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	2.517 km
Synthesized beamsize	10.103 arcsec	2.906 arcsec	0.236 arcsec
Shortest baseline	0.009 km	0.015 km	0.015 km
Maximum recoverable scale	47.725 arcsec	24.192 arcsec	3.555 arcsec

Desired Performance

Desired Angular Resolution (Synthesized Beam) ○ Single ○ Range ◉ Any ○ Standalone ACA

Desired sensitivity per pointing

Bandwidth used for Sensitivity

Science goal integration time estimate [Time Estimate]

Override OT's sensitivity-based time estimate (must be justified) ○ Yes ◉ No

Are the observations time-constrained? ○ Yes ◉ No

With "ANY" there is no largest angular scale (0 by definition) or angular resolution

ALMA Observing Tool (FEB2017) - Project

File Edit View Tool Search Help

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Project Structure

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        - 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.

Control and Performance

Configuration Information

Antenna Beamsize (1.13 * λ / D)	12m	38.309 arcsec	7m	65.672 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	16.197 km
Synthesized beamsize	10.103 arcsec	2.906 arcsec	0.033 arcsec
Shortest baseline	0.009 km	0.015 km	0.256 km
Maximum recoverable scale	47.725 arcsec	24.192 arcsec	0.409 arcsec

Desired Performance

Desired Angular Resolution (Synthesized Beam) ○ Single ○ Range ○ Any ◉ Standalone ACA

Largest Angular Structure in source 3.0 arcsec

Desired sensitivity per poi

Bandwidth used for Sensi

Science goal integration t

Override OT's sensitivity-based time estimate (must be justified) ○ Yes ◉ No

Are the observations time-constrained? ○ Yes ◉ No

Standalone ACA is more convenient than before. There is a largest angular scale but the angular resolution is fixed

Time Estimate

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 sensitivity	3.500 mJy
Bandwidth used for sensitivity	7.500 GHz
Representative frequency (sky, first source)	152.00 GHz

Estimated Total time for Science Goal **24.00 h**

Cluster 1 | Cluster 2 | Cluster 3 | Cluster 4

Source Name	RA	Dec	Velocity
J1723-7713-350	17:23:50.8450	-77:13:50.540	0.000 km/s
J1617-7717-1600	16:17:49.2760	-77:17:18.460	0.000 km/s
J1550-8258-405	15:50:59.1420	-82:58:06.840	0.000 km/s
J1733-7935-1130	17:33:40.7000	-79:35:55.710	0.000 km/s

Possible Configuration Combinations

12-m (1)	12-m (2)	7-m	TP
C43-1	None	No	No
C43-2	None	No	No
C43-3	None	No	No

Input Parameters

Precipitable water vapour (all sources)	2.748mm (6th Octile)

Time required for 12m (1)

Time on source per pointing (first source)	18.14 min [70.69 ms]
Total number of pointings (all sources)	4
Number of tunings	1
Total time on source	1.21 h [295.66 ms]
Total calibration time	33.15 min
Other overheads	13.60 min
Total time for 1 SB execution	1.50 h
Number of SB executions	2
Total time to complete SB	3.00 h

Calibration Breakdown per SB execution*

2 x Pointing	4.00 min
1 x Amplitude/bandpass	5.00 min
2 x Polarization	4.00 min

Close

ng Tool (FEB2017) - Project

Perspective 1

aspects of the observations, including the required antenna configurations and integration times.

.309 arcsec | 7m | 65.672 arcsec

7m | 10 | TP | 3

configuration	Most compact 12m configuration	Most extended 12m configuration
n	0.161 km	16.197 km
rcsec	2.906 arcsec	0.033 arcsec
n	0.015 km	0.256 km
rcsec	24.192 arcsec	0.409 arcsec

d Beam) Singl Range Any Standalone ACA

1.0 arcsec to 3.0 arcsec

3.0 arcsec

0.00350 Jy

AggregateBandWidth

Time Estimate

Yes No

Yes No

RANGE:
You can specify an acceptable range of angular resolution. This implies a set of configuration possibilities, use the time estimate to see them

Project Summary

Total and Calibration Times

Science Goal	12-m (1)		12-m (2)		12-m (1+2)		ACA 7-m		ACA TP		Overall		Non-standard Mode
	Tot.	Cal.	Tot.	Cal.	Tot.	Cal.	Tot.	Cal.	Tot.	Cal.	Tot.	Cal.	
At ar 1"	1.03 d	8.21 h	9.92 h	2.48 h	1.45 d	8.70 h	-	-	-	-	1.45 d	8.70 h	No
Overall	1.03 d	8.21 h	9.92 h	2.48 h	1.45 d	8.70 h	-	-	-	-	1.45 d	8.70 h	

Project Summary

Total and Calibration Times

Science Goal	12-m (1)		12-m (2)		12-m (1+2)		ACA 7-m		ACA TP		Overall		Non-standard Mode
	Tot.	Cal.	Tot.	Cal.	Tot.	Cal.	Tot.	Cal.	Tot.	Cal.	Tot.	Cal.	
At ar 3"	31.53 min	13.83 min	-	-	31.53 min	13.83 min	2.63 h	1.15 h	-	-	3.15 h	1.38 h	No
Overall	31.53 min	13.83 min	-	-	31.53 min	13.83 min	2.63 h	1.15 h	-	-	3.15 h	1.38 h	

Use Tool->display project time summary to see these

When using RANGE:
Rules are operating under the hood to choose among the possible configuration choices and they may be biased toward the low resolution end of a range because less 12m time is needed. See above for an example where is a factor 50 difference in 12m time for ar = 1" vs. ar = 3"

Be careful that the OT is not making choices for you that you would not make for yourself. Before submitting with a range, narrow it and use the project time summary to examine the choices the OT is making

Time Estimate

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 sensitivity	3.500 mJy
Bandwidth used for sensitivity	7.500 GHz
Representative frequency (sky, first source)	152.00 GHz
Estimated Total time for Science Goal	**24.00 h**

Cluster 1 | Cluster 2 | Cluster 3 | Cluster 4

Source Name	RA	Dec	Velocity
J1723-7713-350	17:23:50.8450	-77:13:50.540	0.000 km/s
J1617-7717-1600	16:17:49.2760	-77:17:18.460	0.000 km/s
J1550-8258-405	15:50:59.1420	-82:58:06.840	0.000 km/s
J1733-7935-1130	17:33:40.7000	-79:35:55.710	0.000 km/s

Possible Configuration Combinations

12-m (1)	12-m (2)	7-m	TP
C43-1	None	No	No
C43-2	None	No	No
C43-3	None	No	No

Input Parameters

Precipitable water vapour (all sources)	2.748mm (6th Octile)

Time required for 12m (1)

Time on source per pointing (first source)	18.14 min [70.69 ms]
Total number of pointings (all sources)	4
Number of tunings	1
Total time on source	1.21 h [295.66 ms]
Total calibration time	33.15 min
Other overheads	13.60 min
Total time for 1 SB execution	1.50 h
Number of SB executions	2
Total time to complete SB	3.00 h

Calibration Breakdown per SB execution*

2 x Pointing	4.00 min
1 x Amplitude/bandpass	5.00 min
2 x Polarization	4.00 min

Close

ng Tool (FEB2017) - Project

Perspective 1

aspects of the observations, including the required antenna configurations and integration times.

.309 arcs

configurati

rcsec

0.015 km | 0.256 km

rcsec | 24.192 arcsec | 0.409 arcsec

d Beam) Single Range Any Standalone ACA

1.0 arcsec to 3.0 arcsec

3.0 arcsec

0.00350 Jy equivalent to 20.581 mK @ 3.00 "

and 0.18522 K @ 1.00 "

AggregateBandWidth Frequency Width 7.500000 GHz

Time Estimate

Yes No

Yes No

The time estimate is where you can see how the OT has grouped your targets into clusters, each of which will be in a different schedule block

SG Time Estimates

ALMA Observing Tool (2015.8) - Debris Disk Structure around Nearby Sun-like Stars (2015.

File Edit View Tool Search Help

Project Structure

Proposal | Program

Debris Disk Structure around Nearby Sun-like Stars

- Debris Disk Structure around Nearby Sun-
  - Science Plan
    - ScienceGoal (HD 10647) - generat
      - General
      - Field Setup
      - Spectral Setup
      - Calibration Setup
      - Control and Performance
      - Technical Justification
    - SG OUS (HD 10647)
      - Group OUS
        - Member OUS (HD_1064
          - HD_10647_a_06_T
            - Group 1 : Calib
            - Group 2 : Scier
            - 6 Targets
              - query Pointi
              - query Pointi
              - query Ampl

Cycle3 Template Library (read-only)

- Cycle3 Template Library
  - Science Plan

Editors

Spectral | Spatial | Control and Performance

These parameters are used to control various aspects of the observations, including th

Control and Performance

Configuration Information

Antenna Beamsize (1.13 * λ / D)	12m	25.260 arcsec	7m	43.3
Number of Antennas	12m	40	7m	10
	ACA 7m configuration		Most compact	
Longest baseline	0.049 km		0.157 km	
Synthesized beamsize	5.712 arcsec		1.721 arcsec	
			0.015 km	
			12.765 arcsec	

0.60000 arcse

9.0 arcse

0.00001 Jy

AggregateBandWidth

Science goal integration time estimate — Time Estimate

Override OT's sensitivity-based time estimate (must be justified) ○ Yes ◉ No

Are the observations time-constrained? ○ Yes ◉ No

Feedback

Validation | Validation History | Log

Description

Click the time estimate to see how much time you need and get a breakdown by array and on-source vs. overhead for the 12m synthesis

Time Estimate

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 sensitivity	0.01400 mJy
Bandwidth used for sensitivity	7.500 GHz
Representative frequency (sky, first source)	230.52 GHz
Estimated Total time for Science Goal	**6.02 h**

SB-1

Input Parameters

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

Time required for C40-3

Time on source per pointing (first source)	1.44 h [1.43 h]
Total number of pointings (all sources)	1
Number of tunings	1
Total time on source	1.44 h [1.43 h]
Total calibration time	49.50 min
Other overheads	14.30 min
Total time for 1 SB execution	1.25 h
Number of SB executions	2
Total time to complete SB	2.51 h

Calibration Breakdown per SB execution

5 x Pointing	35.00 s
1 x SidebandRatio	1.58 min
1 x Amplitude	2.50 min
1 x Bandpass	5.00 min
6 x Phase	3.00 min
2 x CheckSource	2.00 min
7 x Atmospheric	4.67 min
Calibration overheads	5.40 min

Additional Arrays

ACA 7-m time (t_12m x 1.40)	3.51 h
Total ACA time (max[t_7-m,t_TP])	3.51 h
Estimated total time for SB-1	**6.02 h**

Close

SG Time Estimates

ALMA Observing Tool (2015.8) - Debris Disk Structure around Nearby Sun-like Stars (2015.

File Edit View Tool Search Help

Project Structure

Proposal Program

Debris Disk Structure around Nearby Sun-like Stars

- Debris Disk Structure around Nearby Sun-
  - Science Plan
    - ScienceGoal (HD 10647) - generat
      - General
      - Field Setup
      - Spectral Setup
      - Calibration Setup
      - Control and Performance
      - Technical Justification
    - SG OUS (HD 10647)
      - Group OUS
        - Member OUS (HD_1064
          - HD_10647_a_06_T
            - Group 1 : Calib
            - Group 2 : Scier
            - 6 Targets
              - query Pointi
              - query Pointi
              - query Ampl

Cycle3 Template Library (read-only)

- Cycle3 Template Library
  - Science Plan

Editors

Spectral Spatial Control and Performance

These parameters are used to control various aspects of the observations, including th

Control and Performance

Configuration Information

Antenna Beamsize (1.13 * λ / D)	12m	25.260 arcsec	7m	43.3
Number of Antennas	12m	40	7m	10
	ACA 7m configuration		Most compact	
Longest baseline	0.049 km		0.157 km	
Synthesized beamsize	5.712 arcsec		1.721 arcsec	
			0.015 km	
			12.765 arcsec	

0.60000 arcse

9.0 arcse

0.00001 Jy

AggregateBandWidth

Science goal integration time estimate — Time Estimate

Override OT

Are the ob

Feedback

Validation

Time Estimate

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 sensitivity	0.01400 mJy
Bandwidth used for sensitivity	7.500 GHz
Representative frequency (sky, first source)	230.52 GHz
Estimated Total time for Science Goal	**6.02 h**

SB-1

Input Parameters	
Precipitable water vapour (all sources)	1.796mm (5th Octile)
Time required for C40-3	
Time on source per pointing (first source)	1.44 h [1.43 h]
Total number of pointings (all sources)	1
Number of tunings	1
Total time on source	1.44 h [1.43 h]
Total calibration time	49.50 min
Other overheads	14.30 min
Total time for 1 SB execution	1.25 h
Number of SB executions	2
Total time to complete SB	2.51 h
Calibration Breakdown per SB execution	
5 x Pointing	25.00 s
1 x SidebandRatio	1.58 min
1 x Amplitude	2.50 min
1 x Bandpass	5.00 min
6 x Phase	3.00 min
2 x CheckSource	2.00 min
7 x Atmospheric	4.67 min
Calibration overheads	5.40 min
Additional Arrays	
ACA 7-m time (t_12m x 1.40)	3.51 h
Total ACA time (max[t_7-m,t_TP])	3.51 h
Estimated total time for SB-1	**6.02 h**

Close

Click the time estimate to see how much time you need and get a breakdown by array and on-source vs. overhead for the 12m synthesis

This project needs 12m + 7m synthesis owing to the combination of angular resolution and largest angular scale

Single source time estimates

ALMA Observing Tool (2015.8) - Debris Disk Structure around Nearby Sun-like Stars (2015.

File Edit View Tool Search Help

Project Structure

Proposal | Program

Debris Disk Structure around Nearby Sun-like Stars

- Debris Disk Structure around Nearby Sun-
  - Science Plan
    - ScienceGoal (HD 10647) - generat
      - General
      - Field Setup
      - Spectral Setup
      - Calibration Setup
      - Control and Performan
      - Technical Justification
    - SG OUS (HD 10647)
      - Group OUS
        - Member OUS (H
          - HD_10647_
            - Group 1
            - Group 2
            - 6 Target
              - query
              - query
              - query

Editors

Spectral | Spatial | Control and Performance

These parameters are used to control various aspects of the observations, including th

Control and Performance

Configuration Information

Antenna Beamsize (1.13 * λ / D) 12m 25.260 arcsec 7m 43.3

Desired sensitivity per pointing 0.00001 Jy

Bandwidth used for Sensitivity AggregateBandWidth

Science goal integration time estimate Time Estimate

Override OT's sensitivity-based time estimate (must be justified) Yes No

Are the observations time-constrained? Yes No

Feedback

Validation | Validation History | Log

Description

Cycle3 Template Library (read-only)

- Cycle3 Template Library
  - Science Plan

Note that the OT calculates the number of executions based on an estimate of the maximum duration of an SB. This means that adding a little bit of on-source time can sometimes make for a significantly larger total time if another execution is implied

Time Estimate

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 sensitivity	0.01400 mJy
Bandwidth used for sensitivity	7.500 GHz
Representative frequency (sky, first source)	230.52 GHz
Estimated Total time for Science Goal	**6.02 h**

Input Parameters

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

Time required for C40-3

Time on source per pointing (first source)	1.44 h [1.43 h]
Total number of pointings (all sources)	1
Number of tunings	1
Total time on source	1.44 h [1.43 h]
Total calibration time	49.50 min
Other overheads	14.30 min
Total time for 1 SB execution	1.25 h
Number of SB executions	2
Total time to complete SB	2.51 h

Calibration Breakdown per SB execution

3 x Pointing	36.00 s
1 x SidebandRatio	1.58 min
1 x Amplitude	2.50 min
1 x Bandpass	5.00 min
6 x Phase	3.00 min
2 x CheckSource	2.00 min
7 x Atmospheric	4.67 min
Calibration overheads	5.40 min

Additional Arrays

ACA 7-m time (t_12m x 1.40)	3.51 h
Total ACA time (max[t_7-m,t_TP])	3.51 h
Estimated total time for SB-1	**6.02 h**

Close

ALMA Observing Tool (2014.6) – Bulge Asymmetries and Dynamical Evolution (BAaDE) (2013.1.01180.S last submitted 2014-11-14 17:52:31)

File Edit View Tool Search Help

Perspective 1

- ALMA Calibrator Selection Tool...
- ALMA LO Configuration Tool...
- Sensitivity Calculator...
- Generate SBs from the Selected Goal
- Display Project Time Summary
- Generate Phase I SBs from all the Science Goals
- Generate Phase II SBs from all the Science Goals
- Export selected Scheduling
- Generate a PDF of Whole P
- Disable Edit Protect

Project Structure

Proposal

SUBMITTED

Bulge Asy

Propos

Pla

ScienceGoal (MSXiiiaRA16b1)

ScienceGoal (MSXiiiaRA16b2)

Bulge Asymmetries and Dynamical Evolution (BAaDE)

n (lsjouwer@nrao.edu)

Select PI...

Template library. Turn the keys on the JTr...

Template library. Turn the keys on th

Proposal

Planned Observing

ScienceGoal (B3 spectral sv

ScienceGoal (B7 continuum

ScienceGoal (B7 CO(9-8): (

ScienceGoal (B9 continuum

ScienceGoal (B3 spectral sv

ScienceGoal (B3 continuum

ScienceGoal (B6 continuum

ScienceGoal (B7 continuum

ScienceGoal (B6 continuum

ScienceGoal (B3 continuum

ScienceGoal (B6 12CO (2-1

ScienceGoal (B6 13CO (2-1

ScienceGoal (B6 spectral lir

ScienceGoal (B9 spectral lir

ScienceGoal (B3 continuum

ScienceGoal (B6 continuum

Project Time Estimates

Total and Calibration Times

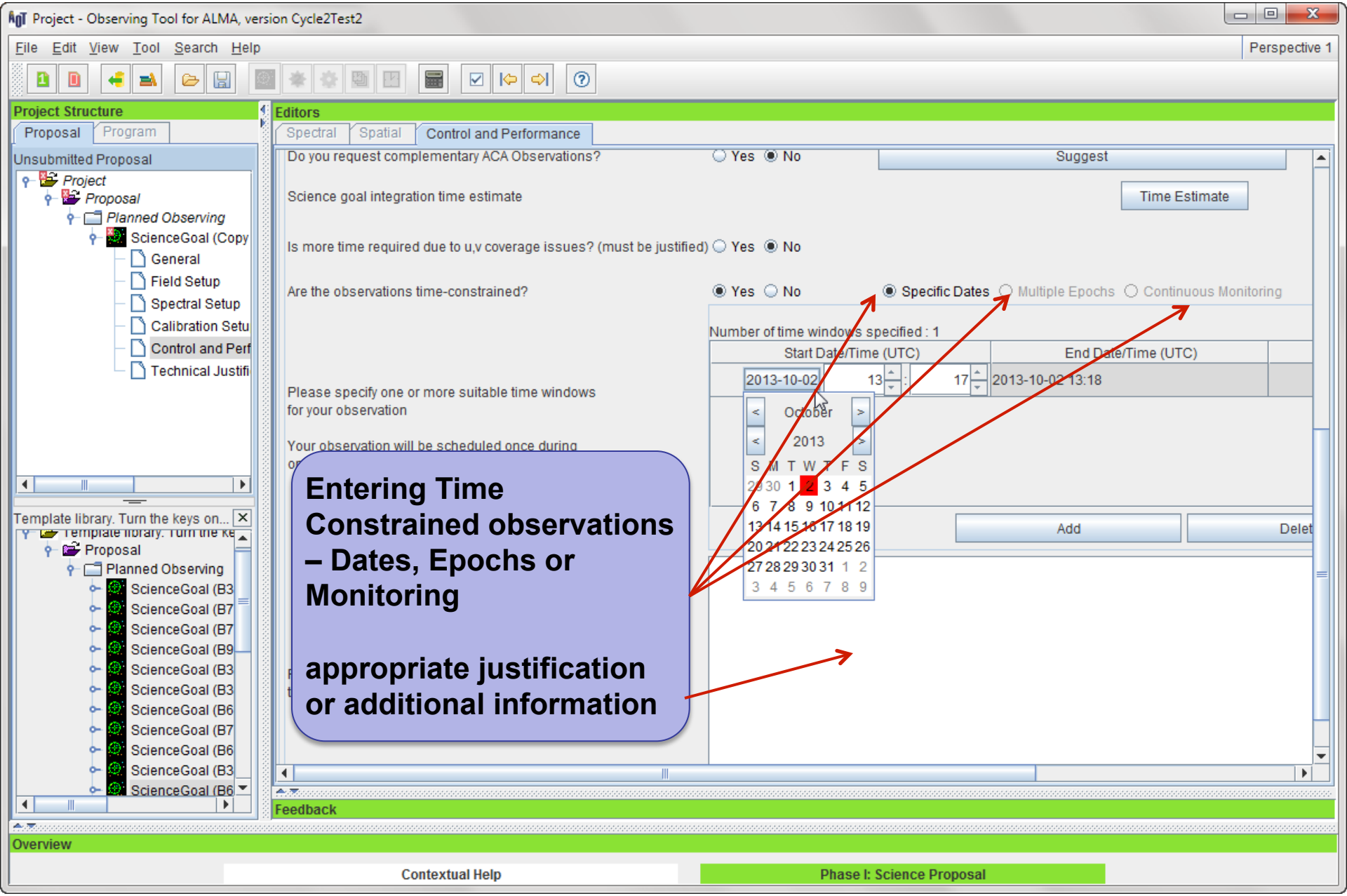
Science Goal	12-m Ext.		12-m Compact		12-m Ext. + Compact		ACA 7-m		ACA TP		Overall		Non-standard Mode
	Tot.	Cal.	Tot.	Cal.	Tot.	Cal.	Tot.	Cal.	Tot.	Cal.	Tot.	Cal.	
MSXiiiaRA16a1	51.12 min	24.75 min	-	-	51.12 min	24.75 min	-	-	-	-	51.12 min	24.75 min	No
MSXiiiaRA16a2	51.12 min	24.75 min	-	-	51.12 min	24.75 min	-	-	-	-	51.12 min	24.75 min	No
MSXiiiaRA16a3	51.97 min	24.75 min	-	-	51.97 min	24.75 min	-	-	-	-	51.97 min	24.75 min	No
MSXiiiaRA16a4	51.12 min	24.75 min	-	-	51.12 min	24.75 min	-	-	-	-	51.12 min	24.75 min	No
MSXiiiaRA16b1	1.29 h	29.95 min	-	-	1.29 h	29.95 min	-	-	-	-	1.29 h	29.95 min	No
MSXiiiaRA16b2	1.29 h	29.95 min	-	-	1.29 h	29.95 min	-	-	-	-	1.29 h	29.95 min	No
Overall	6.01 h	2.65 h	-	-	6.01 h	2.65 h	-	-	-	-	6.01 h	2.65 h	

Data Volumes and Data Rates

Science Goal	Data Volume			Data Rate		
	12-m	ACA 7-m	ACA TP	12-m	ACA 7-m	ACA TP
MSXiiiaRA16a1	54.85 GB	-	-	18.31 MB/s	-	-
MSXiiiaRA16a2	54.85 GB	-	-	18.31 MB/s	-	-
MSXiiiaRA16a3	55.77 GB	-	-	18.31 MB/s	-	-
MSXiiiaRA16a4	54.85 GB	-	-	18.31 MB/s	-	-
MSXiiiaRA16b1	83.35 GB	-	-	18.31 MB/s	-	-
MSXiiiaRA16b2	83.35 GB	-	-	18.31 MB/s	-	-
Overall	387.01 GB	-	-			

OK

Time constrained observing



The sensitivity calculator is available separately in the OT (or on the web)

ALMA Observing Tool (FEB2017) - Chameleon's Dark Neutral Matter (2016.1.00714.S last submitted 2016-08-30 10:29:11)

File Edit View Tool Search Help

ALMA LO Configuration Tool...

Sensitivity Calculator...

Project Structure

Proposal Program

SUBMITTED

- Chameleon's Dark Neutral Matter
  - Science Plan
    - ScienceGoal (Chameleon's dark neutra
      - General
      - Field Setup
      - Spectral Setup
      - Calibration Setup
      - Control and Performance
      - Technical Justification
    - SG OUS (Chameleon's dark neutral
      - Group OUS
        - Member OUS (J1723-7713
          - J1723-77_a_03_TM1[1
            - Group 1 : Calibrator
            - Group 2 : Science
            - 9 Targets
              - query Pointing Te
              - query Pointing Te
              - query Amplitude
              - query Phase (Pha
              - query Bandpass
              - [R] [D2] J1723-7
              - J1550-8258-40
              - J1617-7717-16
              - J1733-7935-11
            - Resources
              - 9 Field Sources
                - Pointing Temp
                - Pointing Temp
                - Amplitude qu
                - Phase query
                - Bandpass qu
                - Primary: J172
                - Primary: J155
                - Primary: J161
                - Primary: J173
              - 2 Instrument Setu
                - B3 Pointing Se
                - HCN v=0 J=1

Perspective 1

Spectral Spatial Control and Performance

These parameters are used

Control and Performance

Configuration Information

Antenna Beamsize (1.13 *)

Number of Antennas

Longest baseline

Synthesized beamsize

Shortest baseline

Maximum recoverable scale

Desired Performance

Desired Angular Resolu

Largest Angular Structu

Desired sensitivity per

Bandwidth used for Ser

Science goal integration

Override OT's sensitivit time estimate (must be

Are the observations tir

times.

Sensitivity Calculator

Common Parameters

Dec	00:00:00.000	
Polarization	Dual	
Observing Frequency	345.00000	GHz
Bandwidth per Polarization	7.50000	GHz
Water Vapour Column Density	Automatic Choice / Manual Choice	
	0.913mm (3rd Octile)	
Trx, tau, Tsky	75 K, 0.158, 39.538 K	
Tsys	157.027 K	

Individual Parameters

	12m Array		7m Array		Total Power Array	
Number of Antennas	43		10		3	
Resolution	0.00000	arcsec	5.97455	arcsec	16.9	arcsec
Sensitivity (rms)	0.00000	uJy	0.00000	uJy	0.00000	uJy
(equivalent to)	Unknown	K	0.00000	K	0.00000	K
Integration Time	60.00000	s	60.00000	s	60.00000	s

Integration Time Unit Option: Automatic

Sensitivity Unit Option: Automatic

Calculate Integration Time | Calculate Sensitivity | Close

A valid sensitivity must be entered in order to calculate an integration time.

Tech Justification

ALMA Observing Tool (2014.6) – Observing Tool for ALMA Cycle3 Groundhog Day Test

File Edit View Tool Search Help

Perspective 1

Project Structure

Proposal | Program

Unsubmitted Proposal

- Observing Tool for ALMA Cycle3 Ground
  - Proposal
    - Planned Observing
      - ScienceGoal (Science Goal)
        - General
        - Field Setup
        - Spectral Setup
        - Calibration Setup
        - Control and Performance
        - Technical Justification

Template library. Turn the keys on the JTr...

- Template library. Turn the keys on th
  - Proposal
    - Planned Observing
      - ScienceGoal (B3 spectral sv
      - ScienceGoal (B7 continuum
      - ScienceGoal (B7 CO(9-8): (
      - ScienceGoal (B9 continuum
      - ScienceGoal (B3 spectral sv
      - ScienceGoal (B3 continuum
      - ScienceGoal (B6 continuum
      - ScienceGoal (B7 continuum
      - ScienceGoal (B6 continuum
      - ScienceGoal (B3 continuum
      - ScienceGoal (B6 12CO (2-1
      - ScienceGoal (B6 13CO (2-1
      - ScienceGoal (B6 spectral lir
      - ScienceGoal (B9 spectral lir
      - ScienceGoal (B3 continuum
      - ScienceGoal (B6 continuum

Editors

Spectral | Spatial | Technical Justification

Enter a Technical Justification for this Science Goal, paying special attention to the parameters reproduced below.

Sensitivity

Requested RMS over 2.4414062500000005E-4 GHz is 3.00 mJy For a peak flux density of 30.00 mJy , the achieved S/N is 10.0

Achieved RMS over the total 351.56 MHz bandwidth is 111.80 uJy For a continuum flux density of 100.00 mJy , the achieved S/N is 894.4

For a peak line flux of 30.00 mJy , the achieved S/N over 1/3 of the source line width (30.00 km/s / 3 = 10.00 km/s) is 26.1

Line width / bandwidth used for sensitivity 30.00 km/s / 731.92 m/s = 40.99

Dynamic Range: 33.33

Justify your requested RMS and resulting S/N for the spectral line and/or continuum observations.

For line observations also justify the bandwidth used for the sensitivity calculation.

Here would be the standard required justification of the sensitivity parameters

There are separate standard sections for Sensitivity, Imaging and Correlator and another may appear to allow you to justify some of the parameter choices you may have made

Each requires its own 50+ word justification

Each standard section comes with a summary of the requested input information to detail the different technical aspects of your program.

Tech Justification

File Edit View Tool Search Help

Perspective 1

Project Structure

Proposal | Program

Unsubmitted Proposal

- Observing Tool for ALMA Cycle3 Ground
  - Proposal
    - Planned Observing
      - ScienceGoal (Science Goal)
        - General
        - Field Setup
        - Spectral Setup
        - Calibration Setup
        - Control and Performance
        - Technical Justification

Template library. Turn the keys on the JTr...

- Template library. Turn the keys on th
  - Proposal
    - Planned Observing
      - ScienceGoal (B3 spectral sv
      - ScienceGoal (B7 continuum
      - ScienceGoal (B7 CO(9-8): (
      - ScienceGoal (B9 continuum
      - ScienceGoal (B3 spectral sv
      - ScienceGoal (B3 continuum
      - ScienceGoal (B6 continuum
      - ScienceGoal (B7 continuum
      - ScienceGoal (B6 continuum
      - ScienceGoal (B3 continuum
      - ScienceGoal (B6 12CO (2-1
      - ScienceGoal (B6 13CO (2-1
      - ScienceGoal (B6 spectral lir
      - ScienceGoal (B9 spectral lir
      - ScienceGoal (B3 continuum
      - ScienceGoal (B6 continuum

Editors

Spectral | Spatial | Technical Justification

Imaging

Requested angular resolution : 1.10 arcsec

Requested largest angular scale : 1.00 arcsec

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

Here would be the standard required justification of the imaging parameters

ACA is not recommended but is selected.
Justify over-riding of the OT recommendation for the ACA

Exceptions to standard practice require separate justification. Here, the OT notes that the ACA is selected even though the OT thinks it is unneeded.

Correlator configuration

line width / representative spectral window resolution: 30.00 km/s / 731.92 m/s = 40.99

Representative spectral window width : 702.64 km/s

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

Here would be the regular required correlator justification

When the time is ripe … validate & submit

Project - Observing Tool for ALMA, version Cycle2Test2

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

Note the spiffy new icons!

Perspective 1

Editors

Spectral | Spatial | Project

Select PI...

Project
Assigned Priority
Project Code None Assigned

Feedback

Suggestion

Click here to make sure that your project can be validated by the OT. If it doesn't validate the archive will reject it.

When you are satisfied that your proposal is complete, click here to submit your proposal to the archive

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

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 (2014.6) - Observing Tool for ALMA Cycle3 Groundhog Day Test

File Edit View Tool Search Help

Perspective 1

Project Structure

Proposal | Program

Unsubmitted Proposal

- Observing Tool for ALMA Cycle3 Grou
  - Proposal
    - Planned Observing
      - ScienceGoal (Science Goal)
        - General
        - Field Setup
        - Spectral Setup
        - Calibration Setup
        - Control and Performance
        - Technical Justification

Template library. Turn the keys on the J...

- Template library. Turn the keys on
  - Proposal
    - Planned Observing
      - ScienceGoal (B3 spectral
      - ScienceGoal (B7 continuu
      - ScienceGoal (B7 CO(9-8)
      - ScienceGoal (B9 continuu
      - ScienceGoal (B3 spectral
      - ScienceGoal (B3 continuu
      - ScienceGoal (B6 continuu
      - ScienceGoal (B7 continuu
      - ScienceGoal (B6 continuu
      - ScienceGoal (B3 continuu
      - ScienceGoal (B6 12CO (2
      - ScienceGoal (B6 13CO (2
      - ScienceGoal (B6 spectral
      - ScienceGoal (B9 spectral
      - ScienceGoal (B3 continuu
      - ScienceGoal (B6 continuu

Editors

Spectral | Spatial | ScienceGoal (Science Goal)

Source Coordinates — System: J2000 — Sexagesimal display? ☑ — Parallax: 0.00000 mas

RA: 22:02:43.2912 — PM RA: 0.00000 mas/yr

Dec: -42:16:39.978 — PM DEC: 0.00000 mas/yr

Source Radial Velocity: 0.000 km/s hel — z: 0.000000000 — Doppler Type: RELATIVISTIC

Target Type: ◉ Individual Pointing(s) ○ 1 Rectangular Field

Expected Source Properties

Peak Continuum Flux Density per Beam: 0.00000 Jy

Continuum Polarization Percentage: 0.0 %

Peak Line Flux Density per Beam: 0.00000 Jy

Line Width: 0.00000 km/s

Line Polarization Percentage: 0.0 %

Field Center Coordinates

PointingPattern: Offset ☑

arcsec

1

RA [arcsec]	Dec [arcsec]
0.00000	0.00000

Clicking on a validation error usually takes you to the problem directly

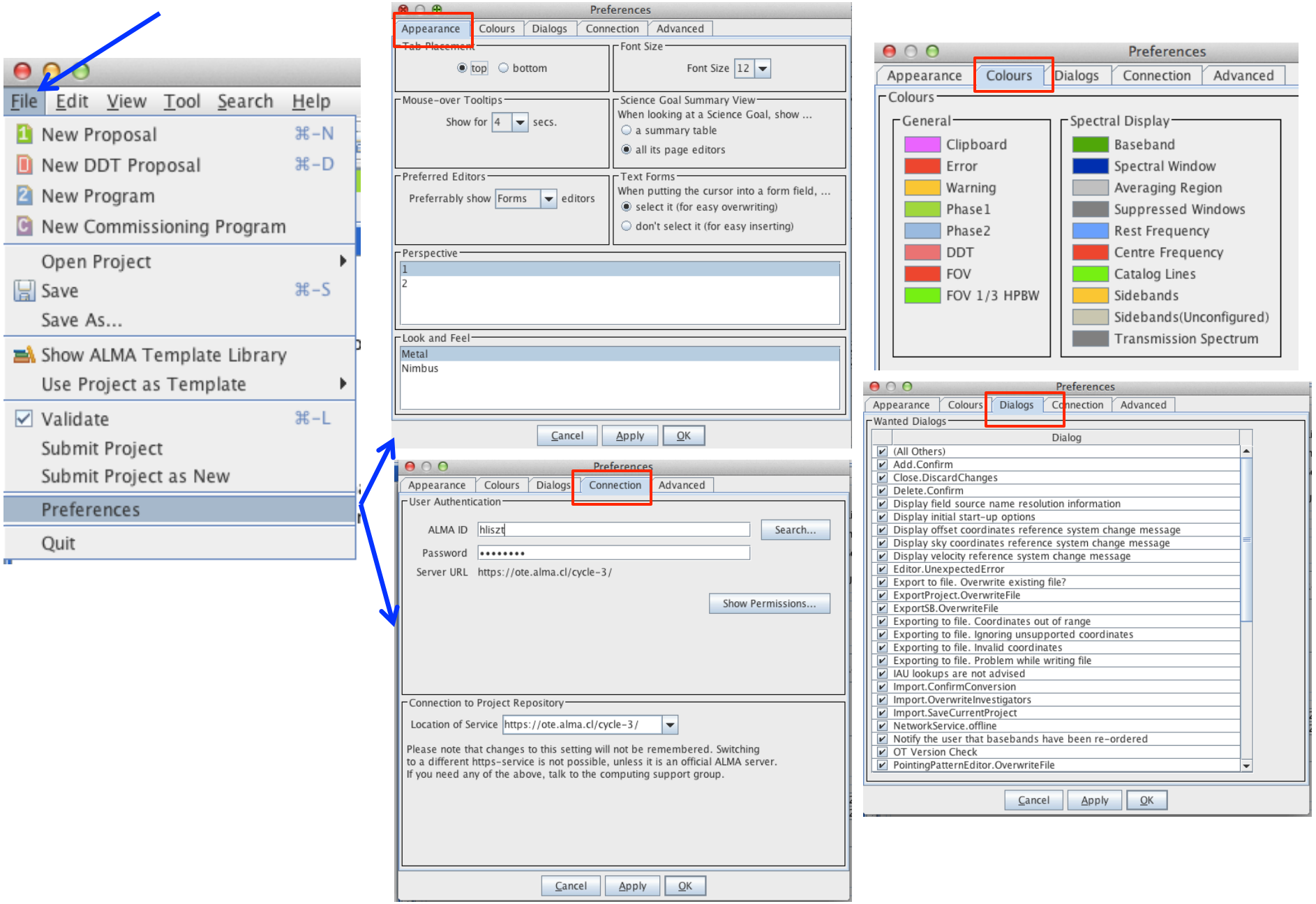
Feedback

Validation | Validation History | Log

9 errors, 0 warnings

Description	Suggestion
No Principal Investigator specified	Select the top level Project node in the tree and fill in the Principal Investigator field
No scientific category defined	Select Proposal node and set a scientific category
No document found - you must add a Science Case to your proposal	Select the proposal node in the Proposal tab and add your document
Must select a minimum of 1 science keywords	Select the Proposal node and then add some science keywords (minimum 1
Expected peak continuum flux is required for a single continuum	Select the Target Parameters (anti-bllac) in the Science Goal and enter a valid value
Either a continuum or a line polarization percentage is required for	Select the Target Parameters (anti-bllac) in the Science Goal and enter a valid value

Use preferences to customize



A Few OT Tips…

- New: The same cut and paste commands you use outside the OT for text also now work inside it
- Ctrl-Z global shortcut will expand out succeeding items in the J-tree (try it, you'll see what we mean)
- Holding down ALT when making choices in dropdown lists will convert to the unit or type of the new choice
  - Otherwise, only the description changes, not value
- OT does galactic-celestial conversion automatically
  - Cannot convert in other ways, eg not FK5 J2000 to ICRS. FK5 J2000 now deprecated

Log in
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Observatory News

Additional Information for Cycle 5 Proposals
Feb 01, 2017

Release of a New Installment of Science Verification Data
Jan 18, 2017

RadioNet: Calls for financial support - OPEN
Jan 16, 2017

More news...

NRAO News

American Astronomical Society Meeting
Jun 04, 2017

2017 Astrobiology Graduate Conference
Jun 05, 2017

Women in Astronomy IV: The Many Faces of Women Astronomers
Jun 09, 2017

More...

Status

ALMA Cycle 5 Pre-Announcement

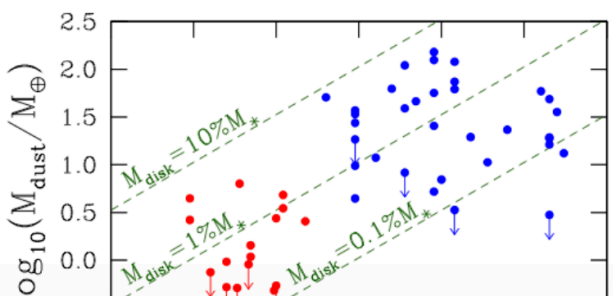
Refereed publications:

Last observed source:

Current configuration: C40-2

More...

Science Highlights - Possible Disk Truncation in Ophiuchus Brown Dwarfs



The sensitivity, resolution and the wavelength coverage of ALMA makes it an ideal tool for studying the properties of the cold outer disks of young stars and low mass objects. Such observations can aid us in understanding the formation of their central objects and their likelihood of ultimately hosting planets. In a recent Astronomy & Astrophysics paper, Dr. Testi and his collaborators made use of ALMA Band 7 to observe an unbiased sample of spectroscopically confirmed Ophiuchus brown dwarfs with infrared excesses.

www.almascience.org

ALMA Science Portal @ NRAO

I could use a hand…

Have no fear, the ALMA Helpdesk is here…

ALMA

<< Science Portal | Home | Knowledgebase | News | English (U.S.)

Login

Remember me

Lost password | Login

» Knowledgebase

- General ALMA Queries (13)
- Early Science - Cycle 1 (31)
- Resources & Observer Support (12)
- Project Planning (14)
- ALMA Observing Tool (OT) (29)
- Proposal Handling (5)
- Archive & Data Retrieval (4)
- Offline Data Reduction and/or CASA (14)
- Development Program (1)

Live Chat Software by Kayako

Please type your search query here | SEARCH

Knowledgebase

General ALMA Queries (13)

- Can I submit a ticket in Japanese?
- How close can ALMA observe to the Sun?

Early Science - Cycle 1 (31)

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

Resources & Observer Support (12)

- How do I arrange a visit to one of the ARCs?
- Where can I find ALMA documentation and manuals?

Project Planning (14)

- What should I include for the content of the Technical Justification and in what format should I submit it?
- Where can I find the online ALMA observing simulator developed by the University of Manchester?

ALMA Observing Tool (OT) (29)

- What do I do if I can't get the OT to work?
- How do I deal with targets with unspecified coordinates in the OT?

Proposal Handling (5)

- May I submit an identical proposal to more than one category, e.g. submitting a proposal on distant galaxies both to cosmology and to galaxy categories?
- Which category should I submit a proposal on distant galaxies: "cosmology/high-z" or "Galaxies/Nuclei"?

NRAO

For more info:

https://almascience.nrao.edu/

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