

Cycle 1 ALMA Proposal Preparation: **The Observing Tool (OT)**

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In collaboration with ARC's Team

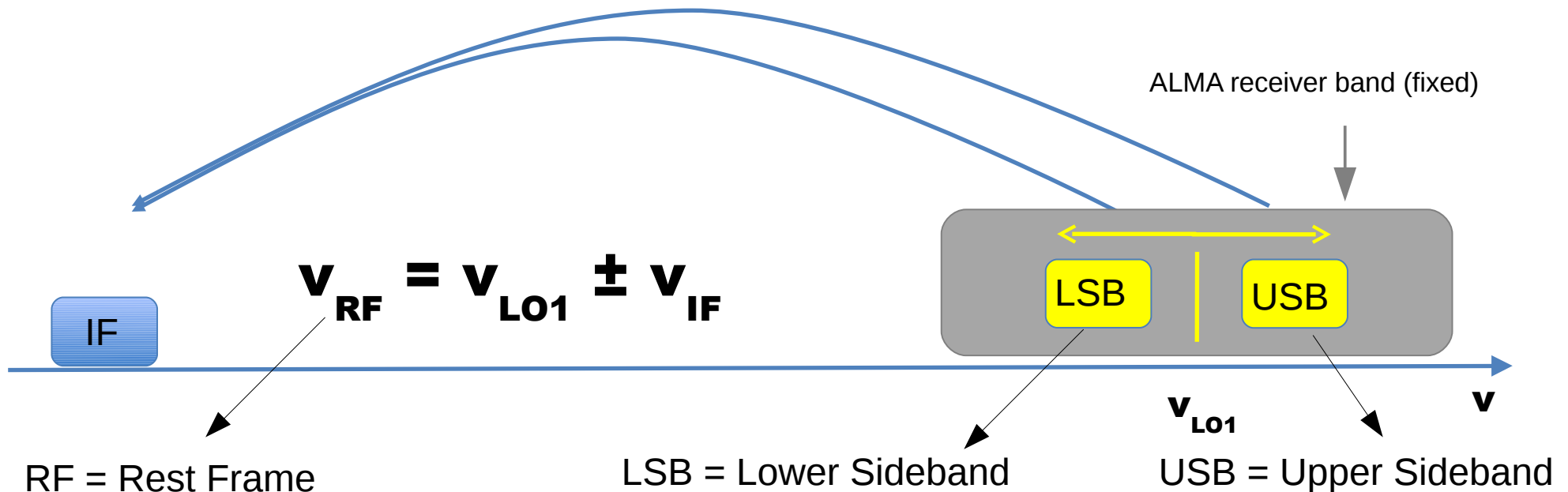
Tutorials for ALMA - Cycle 1
Bologna, June 6th, 2012

Outline

- ◆ Glossary
- ◆ Early Science **Cycle-1: Constraints**
- ◆ Phases of Proposal Submission (Phase I and Phase II)
- ◆ ALMA SCIENCE PORTAL
- ◆ ALMA Observing Tool Structure

Sidebands

- ◆ Most radio astronomy receivers have 2 sidebands: caused by mixing the sky signal with a local oscillator (LO)
- ◆ Sidebands are mapped to a lower frequency band
 - IF (Intermediate Frequency) range sets width and separation of sidebands
 - Differs for different bands
- ◆ Varying LO1 causes the sidebands to move
- ◆ **8 GHz Bandwidth is available**



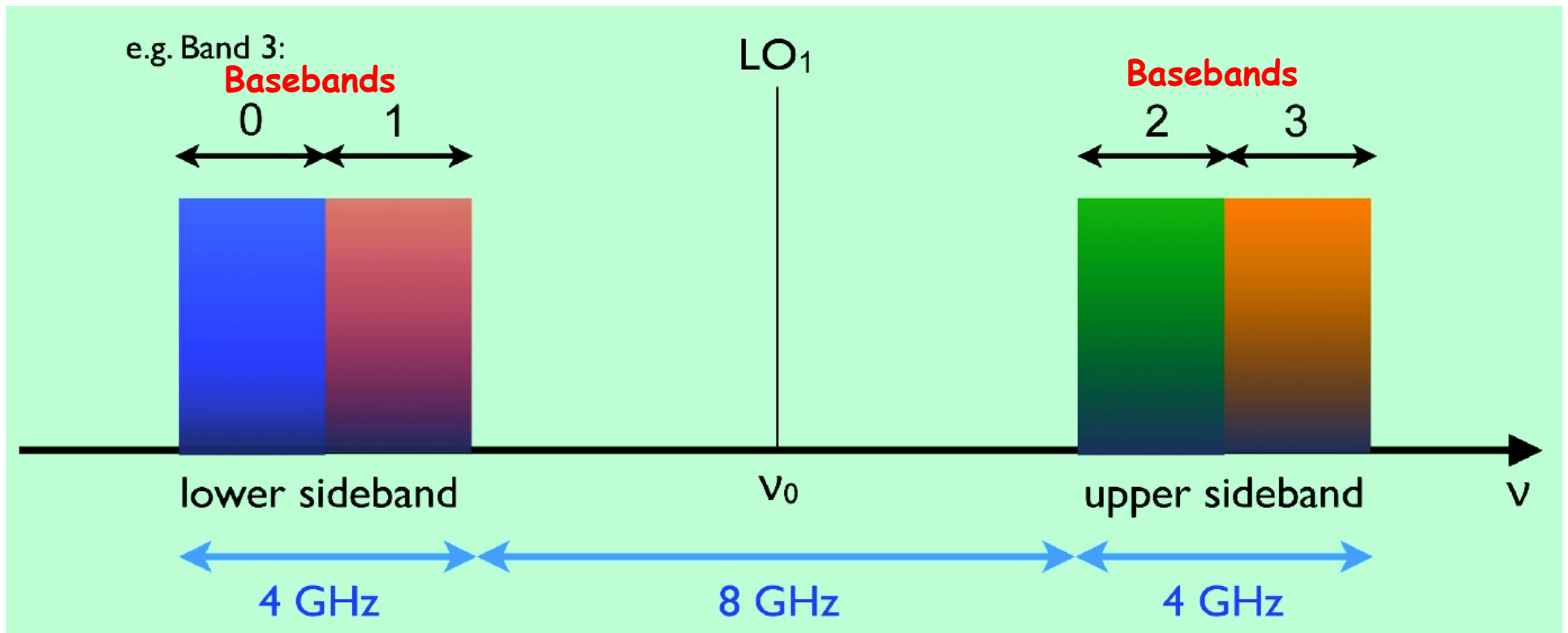
Sidebands

- ◆ ALMA usually allows both sidebands (LSB & USB) to be used

- ◆ ALMA has two kinds of receivers with two sidebands
 - i. Dual Sidebands (2SB: B3, B6, and B7)
 - ii. Double Sideband (DSB: B9)
 - iii. Both are present at *Early Science (ES) Cycle 1*
(also at *ES Cycle 0*)

Basebands

- ◆ A **2 GHz** wide portion of the available signal which is digitized at the antenna
- ◆ The **4 x 2 GHz-wide Basebands** (0, 1, 2, and 3) can be placed in one sideband or distributed between the 2 Sidebands
- ◆ The **maximum available 8 GHz bandwidth** is achieved when the 4 basebands are chosen not to overlap



Spectral Window (SPW)

- ◆ A Spectral Window is a frequency subrange of a Baseband

- ◆ **ES Cycle 1:** up to four Spectral Windows, one per Baseband, and each Spectral Window can have a different Bandwidth and Spectral Resolution: **Independent Basebands**

ES Cycle 0 allowed one Spectral Window per Baseband with identical Bandwidth and Spectral Resolution

ALMA ES

Correlator Modes

Two kinds of operation

- ◆ Time Division Mode (**TDM**)
 - i. Modest Frequency Resolution
 - ii. Continuum/wide spectral line observations
 - iii. SPW always 2-GHz wide with 128-256 channels

- ◆ Frequency Division Mode (**FDM**)
 - i. High Frequency Resolution
 - ii. High-resolution spectral line observations
 - iii. SPW can be 58.6-1875 MHz wide with up to 7680 channels

ALMA ES *Cycle 1* Correlator Modes

Bandwidth (MHz)	Dual Polarization		Single Polarization		Correlator mode
	Ch Spacing (MHz) *	Number of channels	Ch Spacing (MHz) *	Number of channels	
2000 *	15.6	128	7.8125	256	TDM
58.6	0.0153	3840	0.00763	7680	FDM
117	0.0305	3840	0.0153	7680	FDM
234	0.061	3840	0.0305	7680	FDM
469	0.122	3840	0.061	7680	FDM
938	0.244	3840	0.122	7680	FDM
1875	0.488	3840	0.244	7680	FDM

* Spectral Resolution is 2 x the Channel Spacing

* The bandwidth is limited to 1875 MHz

ALMA ES *Cycle 1* Correlator Modes

Bandwidth (MHz)	Dual Polarization		Single Polarization		Correlator mode
	Ch Spacing* (MHz)	Number of channels	Ch Spacing* (MHz)	Number of channels	
2000*	15.6	128	7.8125	256	TDM
58.6	0.0153	3840	0.00763	7680	FDM
117	0.0305	3840	0.0153	7680	FDM
234	0.061	3840	0.0305	7680	FDM
469	0.122	3840	0.061	7680	FDM
938	0.244	3840	0.122	7680	FDM
1875	0.488	3840	0.244	7680	FDM

* Spectral Resolution is 2 x the Channel Spacing

* The bandwidth is limited to 1875 MHz

ALMA ES *Cycle 1* Correlator Modes

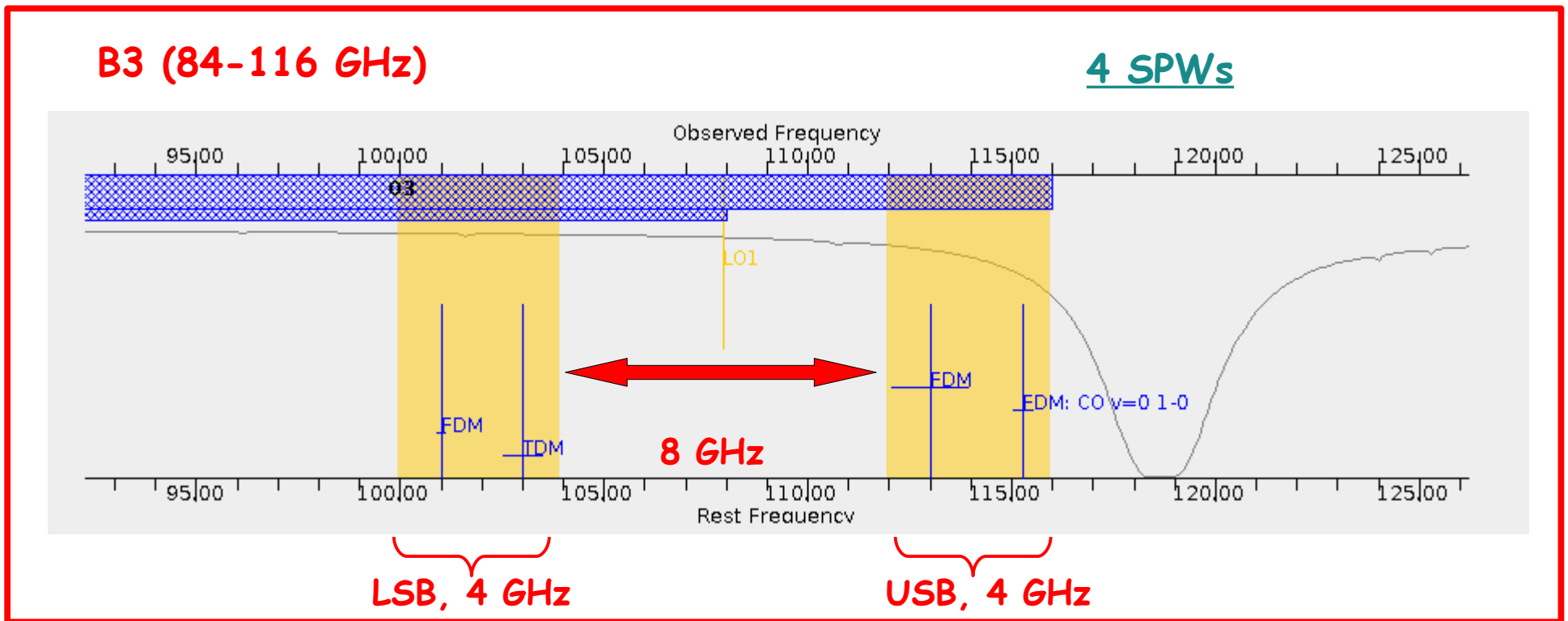
Bandwidth (MHz)	Dual Polarization		Single Polarization		Correlator mode
	Ch Spacing [*] (MHz)	Number of channels	Ch Spacing [*] (MHz)	Number of channels	
2000 [*]	15.6	128	7.8125	256	TDM
58.6	0.0153	3840	0.00763	7680	FDM
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469	0.122	3840	0.061	7680	FDM
938	0.244	3840	0.122	7680	FDM
1875	0.488	3840	0.244	7680	FDM

^{*} Spectral Resolution is 2 x the Channel Spacing

^{*} The bandwidth is limited to 1875 MHz

2SB receivers (B3, B6, B7)

- ◆ Sidebands are separated in the receiver
- ◆ Sidebands are generally 4 GHz wide and separated by 8 GHz

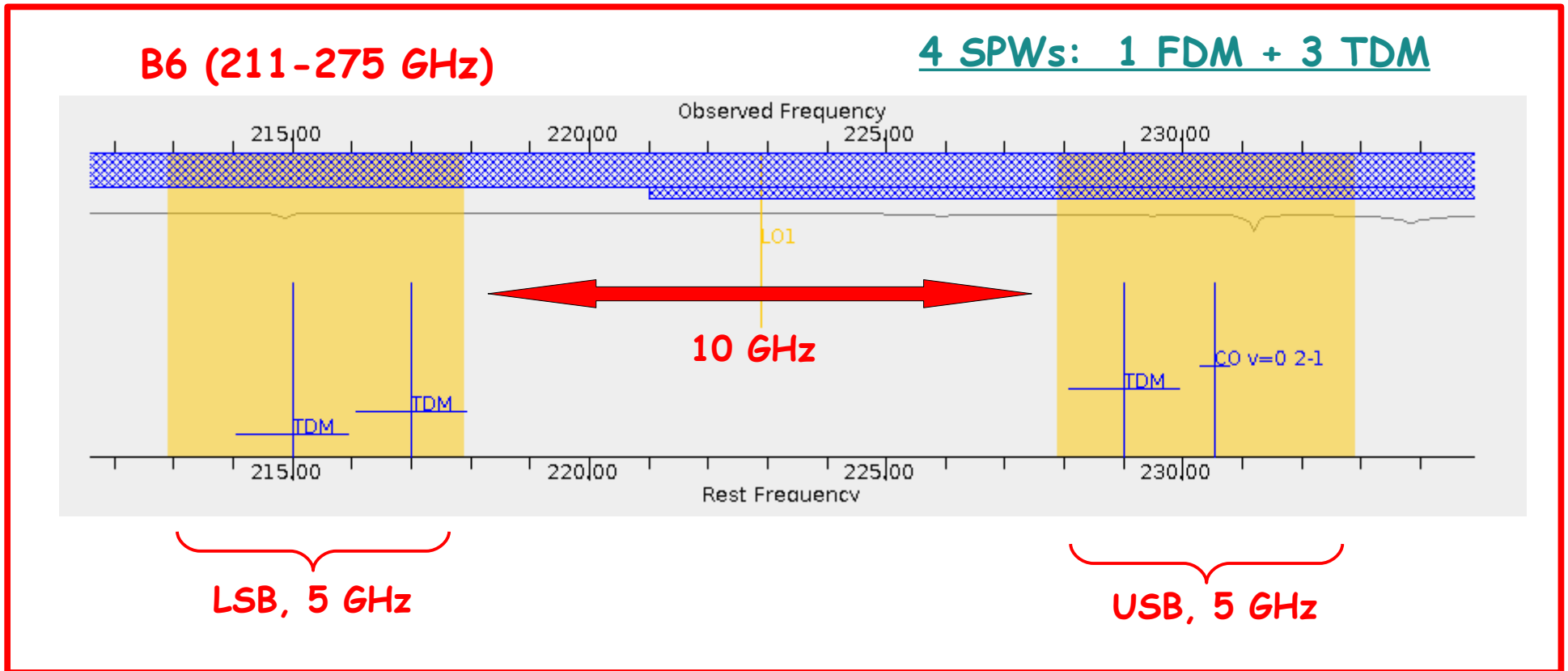


B7 (275-373 GHz), same properties

Observations of spectral lines within about 0.2 GHz of a Band edge are not possible at present.

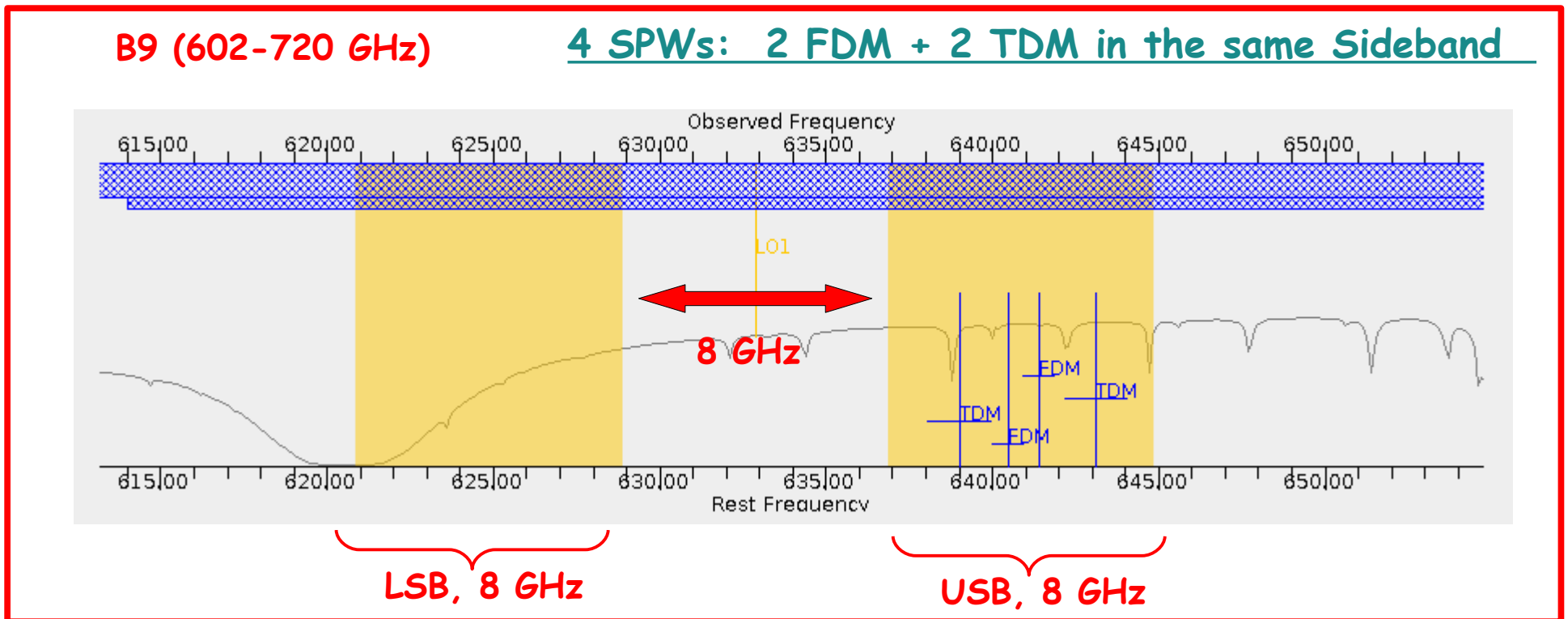
2SB receiver (B6)

- But in **Band 6** sidebands are 5 GHz wide and separated by 10 GHz



DSB receivers (B9)

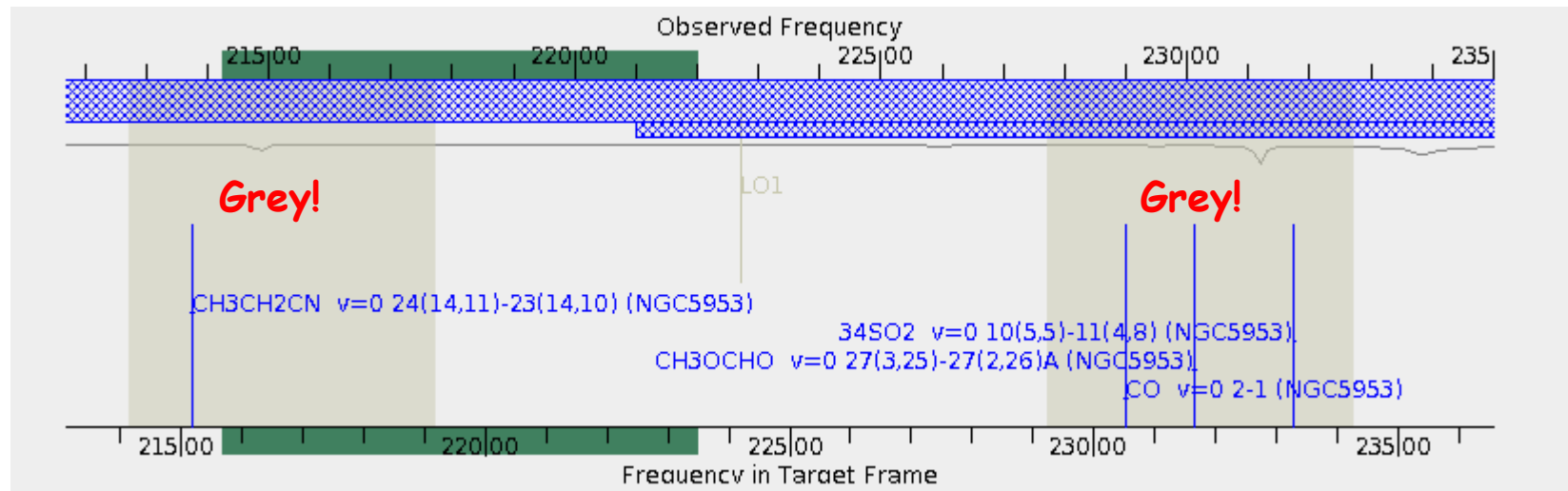
- ◆ Sidebands are separated in the correlator
- ◆ Sidebands are 8 GHz wide and separated by 8 GHz



Spectral Window constraints for *Cycle 1*

- ◆ 2SB receivers (B3, B6, and B7)
 - i. All (for a maximum of 4 Spectral Windows) in USB or LSB
 - ii. 2 in USB and 2 in LSB
 - iii. A 3/1 split is **not possible**

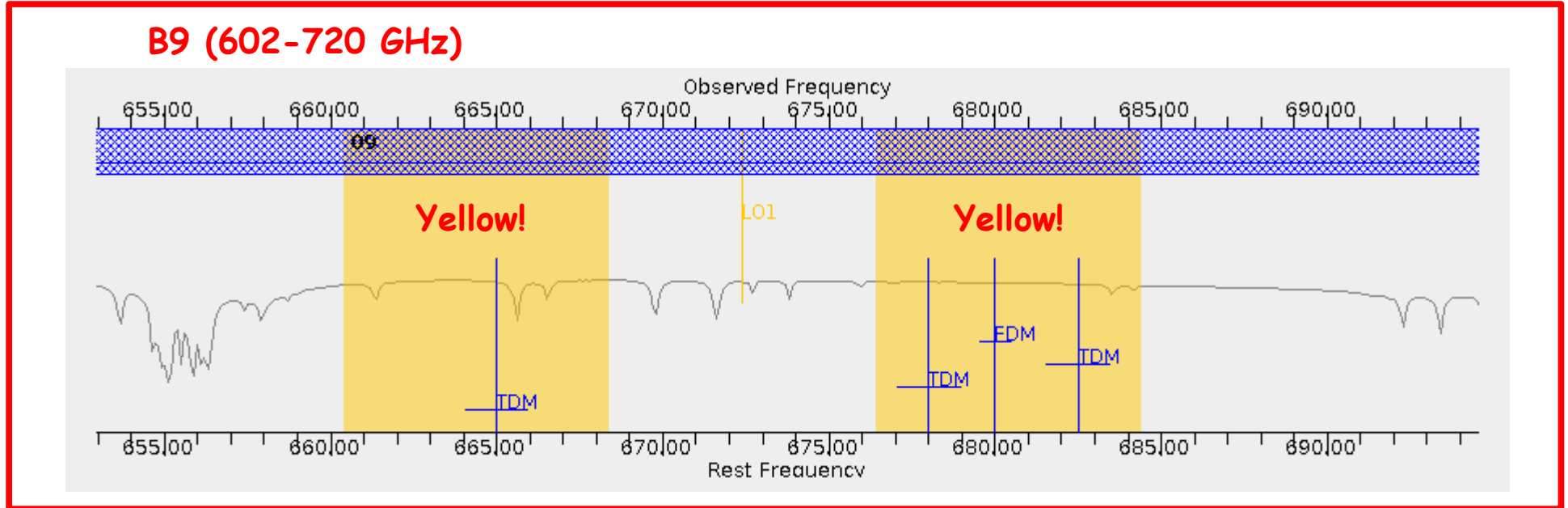
B6 (211-275 GHz)



SPWs can overlap in frequency.

Spectral Window constraints for *Cycle 1*

- ◆ DSB receivers (B9): A 3/1 split is **possible**

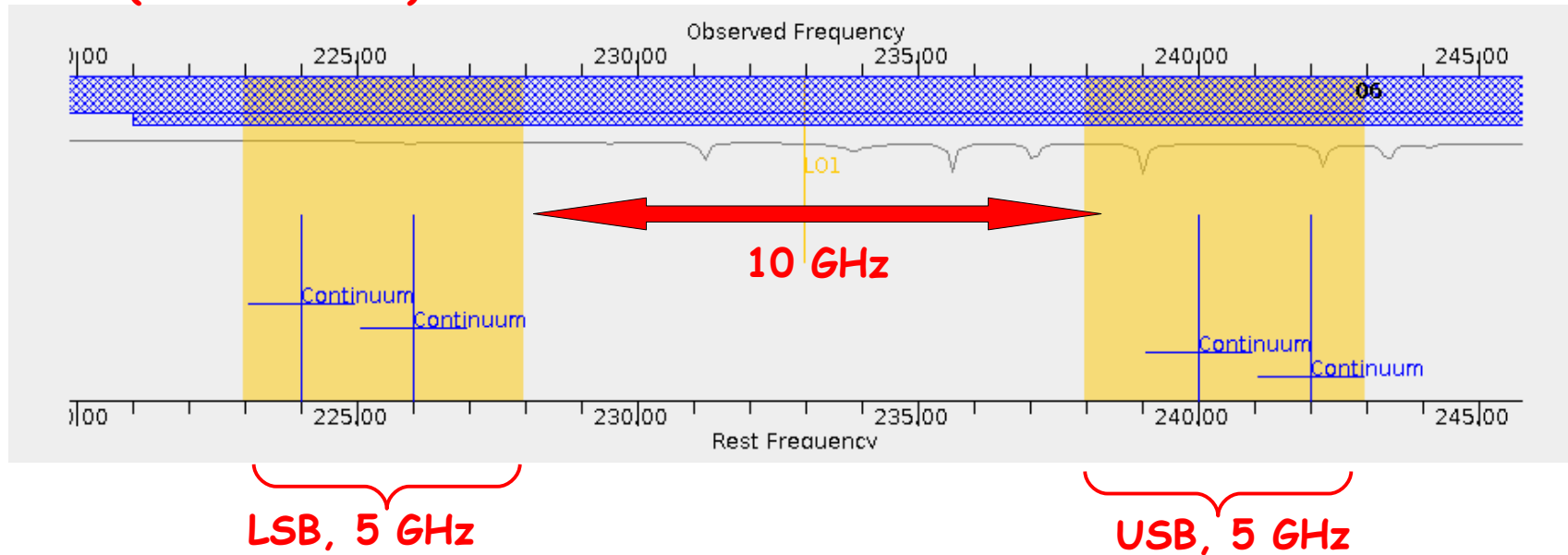


SPWs can overlap in frequency.

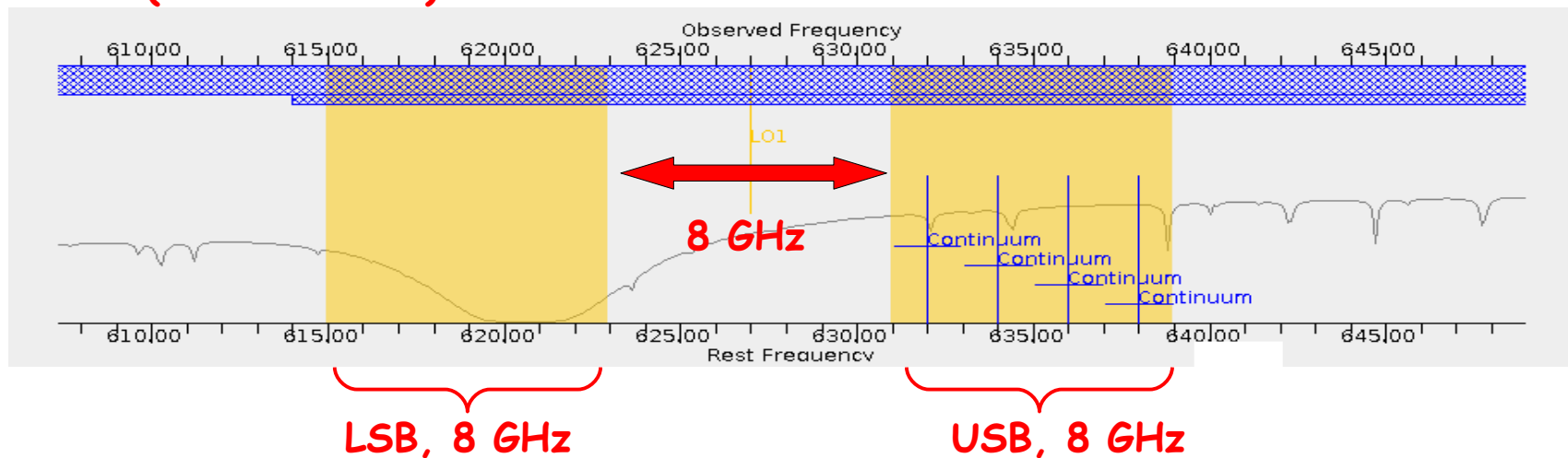
Single Continuum Observations

- ◆ It covers the maximum possible bandwidth with the lowest possible spectral resolution
- ◆ Only define a single frequency

B6 (211-275 GHz)



B9 (602-720 GHz)



Phases of Proposal Submission

2 Phases:

- ◆ Phase I: Proposal Submission
- ◆ Phase II: Submission of Observing Program

The Observing Tool (OT) is used for both phases:

- Phase I
- ◆ Fill in PI, co-PIs, etc ... (**ALL ALREADY REGISTERED**)
 - ◆ Attach scientific/technical justification (single PDF)
 - ◆ Define Science Goals
 - ◆ Submit
- Phase II
- ◆ If your project has been approved for scheduling, generate Scheduling Blocks from Science Goals and submit

Science Goal (SG)

- ◆ Scientific requirements of the observations
- ◆ A user must enter:
 - i. Science Targets
 - ii. Spectral line and/or continuum frequencies
 - iii. Angular resolution, largest angular scale
 - iv. Required sensitivity

Science Goal Constraints

- ◆ **Maximum of 5 Science Goals per proposal**
- ◆ Sources can be designed by fixed RA and Dec, or can include moving targets (including the planets, their moons, asteroids and comets)
- ◆ Sources selected:
 - i. by specifying one or more **source positions** (= **Multiple Pointings**)
 - ii. by specifying a single **Rectangular Field** (= **Mosaic**)
- ◆ **The total number of pointings in a proposal must be less than or equal to 150.** The ACA pointings do not count against the 150 pointing proposal limit.

Rectangular Field (= Mosaic) Constraints

- ◆ **One Rectangular Field is allowed per Science Goal:** at most 5 Rectangular Fields are allowed per proposal
- ◆ **A single Mosaic can have up to 150 pointings**
- ◆ If ACA observations are requested as part of a mosaic, then a corresponding ACA mosaic will also be observed

Multiple Sources Constraints

Users can request to observe **up to 15 individual sources** in a **single Science Goal**, provided that the sources:

- ◆ are **not separated by more than 15 degrees** on the sky
- ◆ can be observed with one Spectral Setup (placement and properties SPWs)
- ◆ **can be observed with no more than 5 separate velocities** that fall within the same Receiver Band

Offset Pointings Constraints

Offsets can be specified for all sources within a Science Goal, within 15 degrees separation, and the total number of positions in the proposal must be less than or equal to 150.

- ◆ If ACA observations are requested for the SG, then the corresponding ACA observations will be obtained for each source
- ◆ A set of N offset pointings will take longer to observe than N sources at the same sky positions: If the use of offset pointings is not well justified, then the proposal may be rejected on technical grounds

What you don't ask for

- ◆ Time on source: The OT reports an estimated time based on likely weather:
Observations will proceed until sensitivity is reached

- ◆ Calibration sources
 - i. The observatory will provide all necessary calibration:
Choose "system-defined" calibration
STRONGLY RECOMMENDED

 - ii. Own calibrators can be requested:
You must fully justify it in the proposal!

OT

- ◆ The OT is a Java application
 - i. Java 6 must be installed on your computer
- ◆ Download and run locally
 - i. Web Start (**recommended**) and Tarball versions
- ◆ Internet connection required intermittently
 - i. PI/co-PIs information from user database
 - ii. Source catalogues and images servers
 - iii. Spectral line catalogues
 - iv. Submission

ALMA SCIENCE PORTAL -----> <http://almascience.org>

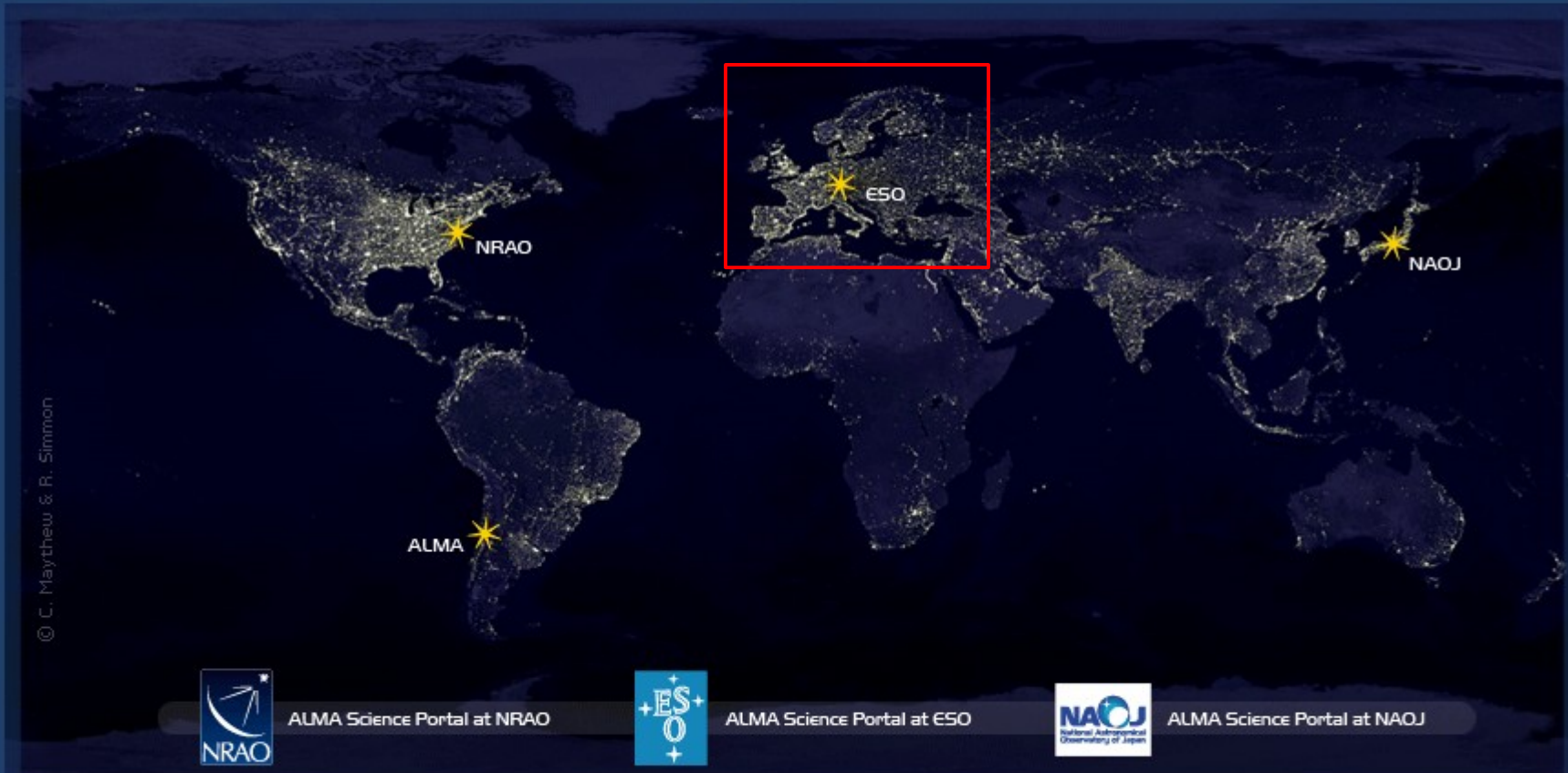
The interaction between science users and ALMA is done through the ARCs.
The ALMA Science Portal allows this interaction.



Atacama Large Millimeter/submillimeter Array

In search of our Cosmic Origins

Please select your preferred ALMA Regional Centre (ARC). Alternatively you will be redirected in 3 seconds to the closest ARC which in your case is at



ALMA SCIENCE PORTAL @ ESO

Login & Registration



Atacama Large Millimeter/submillimeter Array

In search of our Cosmic Origins



Search Site

ESO

NRAO

NAOJ

Log in | Register | Reset Password | Forgot Account

About ALMA

ALMA Science

Call for Proposals

ALMA Data

Documents & Tools

Knowledgebase/FAQ

User Services at ARCs

- Helpdesk
- EU ARC
- NA ARC
- EA ARC

You are here: Home

Welcome to the Science Portal at ESO



Overview

The Atacama Large Millimeter/submillimeter Array (ALMA) is a major new facility for world astronomy. When completed in 2013, ALMA will consist of a giant array of 12-m antennas, with baselines up to 16 km, and an additional compact array of 7-m and 12-m antennas to greatly enhance ALMA's ability to image extended targets. ALMA will be outfitted with state-of-the-art receivers that cover atmospheric windows from 84–950 GHz (3mm – 300 micron). Construction of ALMA started in 2003 and will be completed in 2013. The ALMA project is an international collaboration between Europe, East Asia and North America in cooperation with the Republic of Chile. More details can be found via the **About ALMA** link in the left menu.

This is the website for **The ALMA Science Portal**, served from one of the **ALMA Regional Centers (ARCs)** of the ALMA

ALMA Newsletter

Newsletter No. 9

May 23, 2012

More...

General News

ALMA Cycle 1 Call for Proposals is now open

May 31, 2012

New Release of Band 9 Science Verification Data

May 31, 2012

Third installment of Science Verification data

Apr 13, 2012

Pre-announcement for Cycle 1

Apr 03, 2012

More...

OT

The OT



[About ALMA](#)

[ALMA Science](#)

[Call for Proposals](#)

[Capabilities](#)

[Road Map](#)

[Proposers Guide](#)

[Technical Handbook](#)

[Observing Tool](#)

[Web Start Download Page](#)

[Tarball Download Page](#)

[OT Video Tutorials](#)

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[Sensitivity Calculator](#)

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Observing Tool

The ALMA Observing Tool (OT) is a Java application used for the preparation and submission of ALMA Phase I (observing proposal) and Phase II (telescope runfiles for accepted proposals) materials. The current *Cycle 1* release of the OT is configured for the Early Science Capabilities of ALMA as described in the [Cycle 1 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 will run on most common operating systems, as long as you have Java 6 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 run time environment. Please use this if you have any problems running the OT tarball install with your default Java.



OT structure

Menu and Toolbar



The screenshot displays the OT software interface. At the top, there is a menu bar with 'File', 'Edit', 'View', 'Tool', 'Search', and 'Help'. Below the menu bar is a toolbar with various icons. The main interface is divided into two main sections: 'Project Structure' on the left and 'Editors' on the right. The 'Project Structure' panel shows a tree view under 'Unsubmitted Proposal' with a folder 'High resolution imaging of X-ray hot spot' containing a 'Proposal' folder and a 'Planned Observing' folder. The 'Proposal' folder contains sub-items: 'General', 'Field Setup', 'Spectral Setup', 'Calibration Setup', and 'Control and Performance'. The 'Editors' panel is currently showing the 'High resolution imaging of X-ray hot spot' editor. It has tabs for 'Spectral' and 'Spatial'. The 'Principal Investigator' section has a text input field and a 'Select PI...' button. The 'Main Project Information' section has fields for 'Project' (containing 'on imaging of X-ray hot spot'), 'Assigned Priority', and 'Project Code'. The text 'Editor Panel' is overlaid in red on the Principal Investigator section, and 'Overview Panel' is overlaid in red on the Main Project Information section.

Proposal Panel

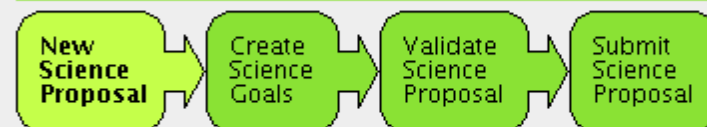
Overview Panel

Overview

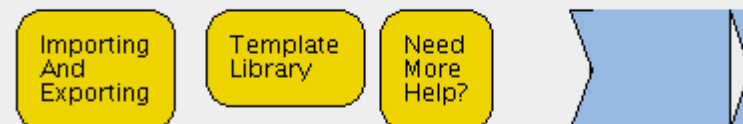
Contextual Help

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

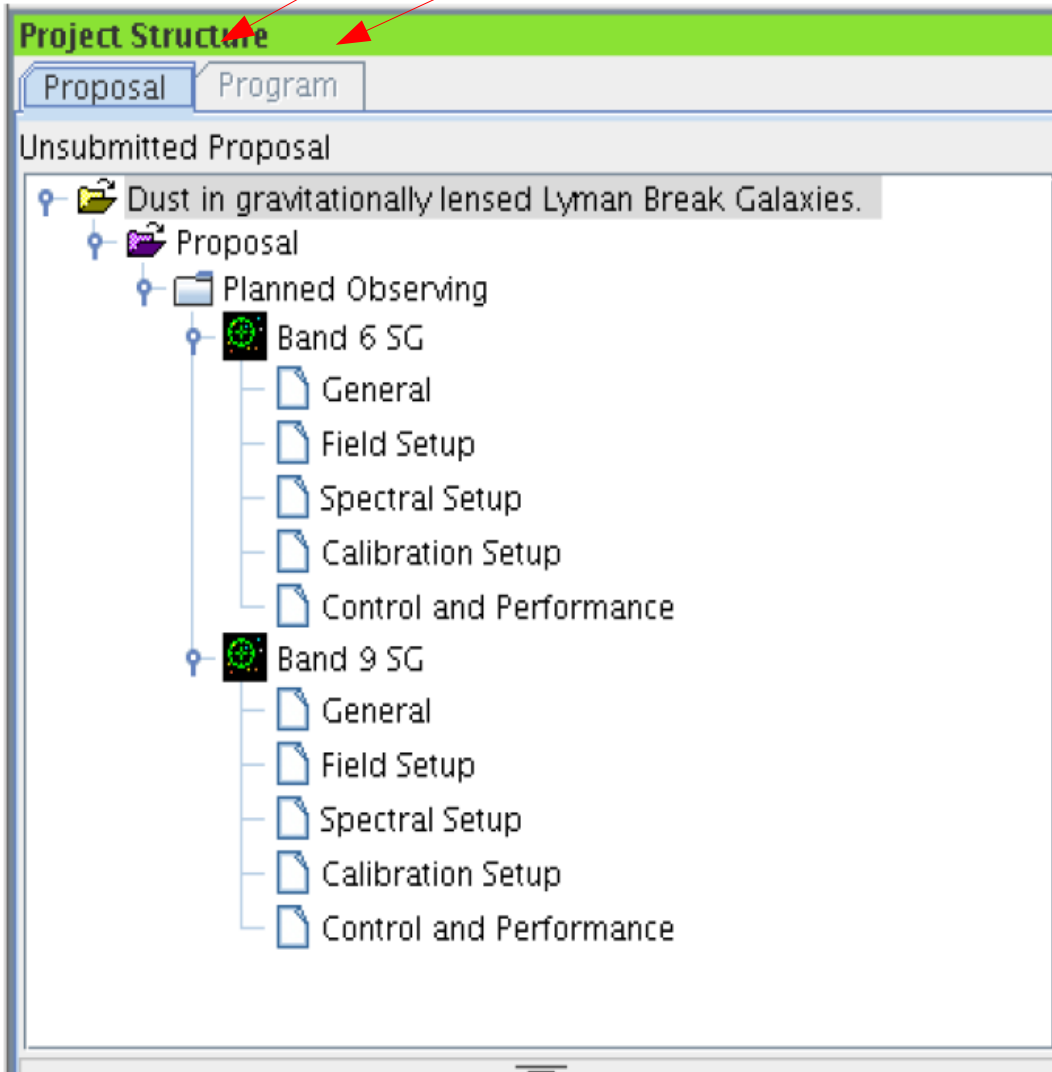


Click on the overview steps to view the contextual help



Project navigation and Science Goal

- ◆ Navigate through project using the Project Tree
- ◆ Two tabs
 - i. Proposal (Phase I)
 - ii. Program (Phase II)

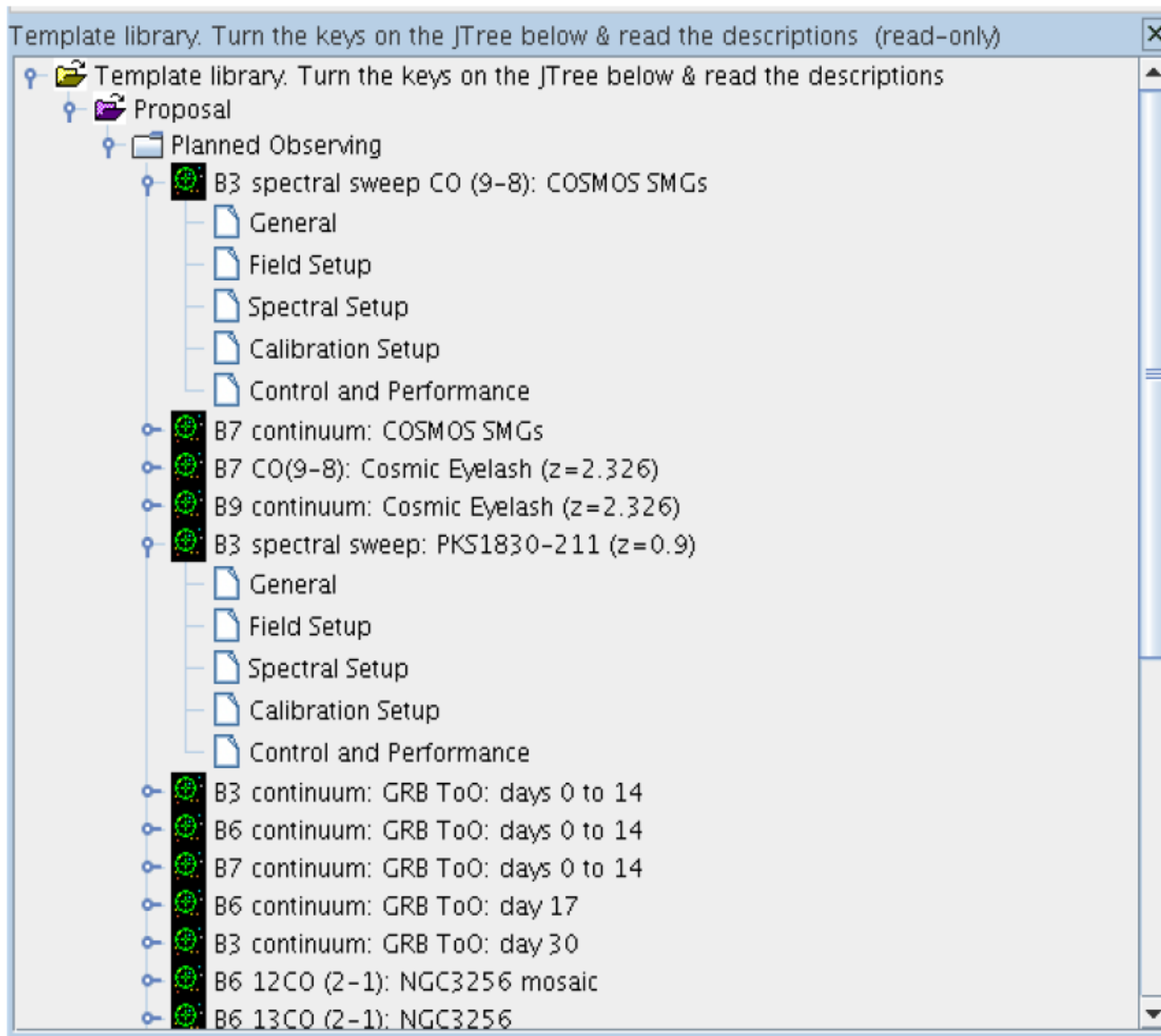


The OT divides the observing info of a project into **SGs**

SG is a container of

- i. General description of the SG
- ii. the Field Setup to define the observing targets
- iii. The Calibration Setup
- iv. The Spectral Setup to define the frequency range and correlator configuration
- v. The Control and Performance parameters to define the sensitivity and resolution goals

The ALMA Template Library



It provides a set of Science Goals that cover different proposal types.

Possibility to drag and copy the full Science Goal!

The Field Setup

MS1512-cB58 CI1053-arc A2218-arc

Source

Source Name: MS1512-cB58

Choose a Solar System Object?

Name of object: Unspecified

Resolve

SIMBAD + NED

System: J2000 Sexagesimal display?

Parallax: 0.00000 mas

PM RA: 0.00000 mas/yr

PM Dec: 0.00000 mas/yr

Source Coordinates: RA: 15:14:22.4400 Dec: 36:36:20.700

+ EPHEMERIS

Source Velocity: 0.000 km/s hel z: 0.000000 Doppler Type: OPTICAL

Target Type: Multiple single point fields 1 rectangular field

Expected Source Properties

Peak Continuum Flux Density per Beam: 0.00000 Jy

Peak Line Flux Density per Beam: 0.00000 Jy

Polarisation Percentage: 0.0 %

Line Width: 0.00000 km/s

Field Center Coordinates

PointingPattern: Offset

Offset Unit: arcsec

#Pointings: 1

RA [arcsec]	Dec [arcsec]
0.00000	0.00000

Add Delete

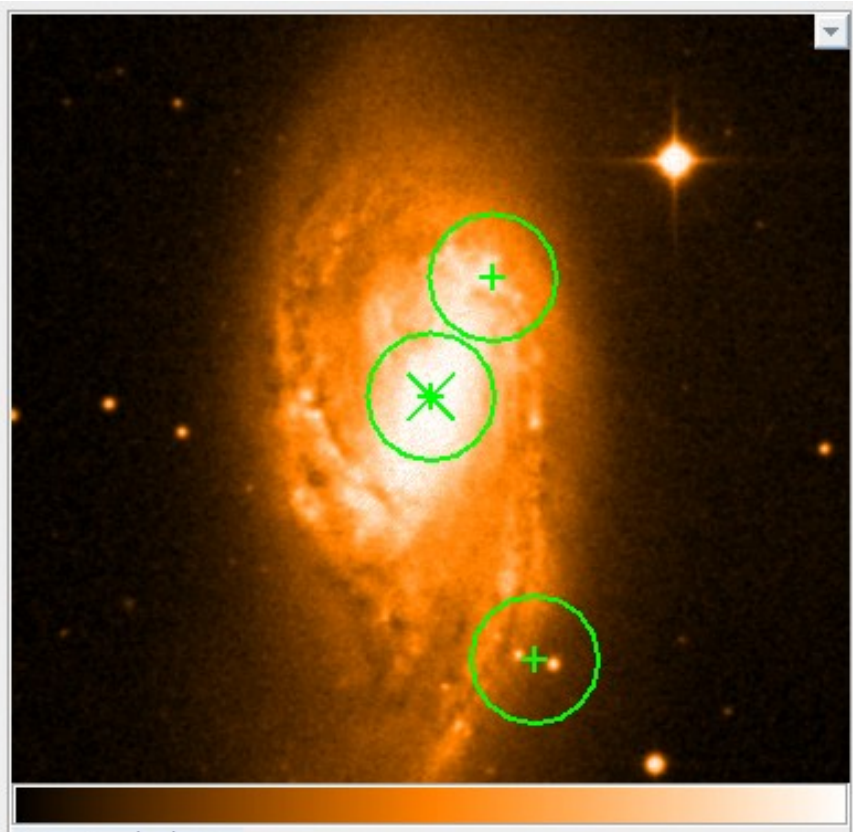
Add Source Load from File... Delete Source Delete All Sources

The Visual Spatial Editor

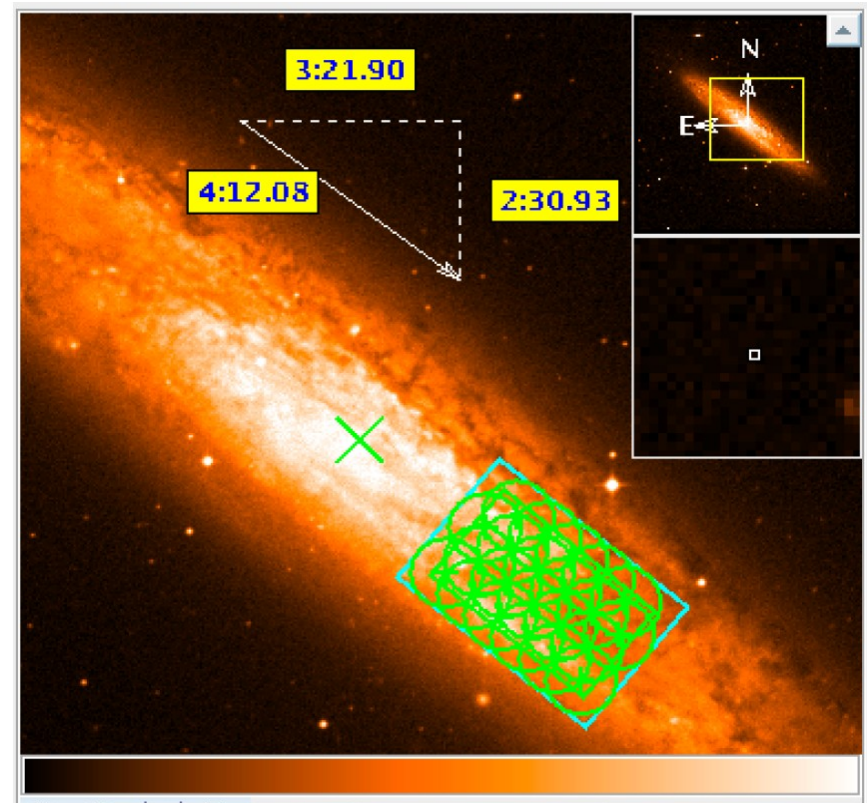
Downloads and displays an image of the sky

- i. Libraries provided by JSky project
- ii. Local images files (FITS)

Multiple Pointings



Mosaic



It is not possible to perform a mixture of Multiple Pointings and Mosaic

Spectral Setup

Spectral Type ?

Spectral Line
 Single Continuum
 Spectral Scan

Polarization Products desired XX DUAL

Spectral Line ?

Baseband-0

Fraction	Center Freq (Rest)	Center Freq (Sky)	Transition	Bandwidth, Resolution (Hanning smoothed)	Representative Window
1(Full)	115.27120 G...	114.83638 G...	CO v=0 1-0	58.594 MHz(153 km/s), 30.518 kHz(0.080 km/s)	<input checked="" type="radio"/>

Select Lines to Observe in Baseband-0...

Baseband-1

1(Full)	113.26726 G...	112.84000 G...	Manual window	58.594 MHz(156 km/s), 30.518 kHz(0.081 km/s)	<input type="radio"/>
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Select Lines to Observe in Baseband-1...

Baseband-2

1(Full)	103.22940 G...	102.84000 G...	Manual window	58.594 MHz(171 km/s), 30.518 kHz(0.089 km/s)	<input type="radio"/>
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Select Lines to Observe in Baseband-2...

Baseband-3

1(Full)	101.22183 G...	100.84000 G...	Manual window	58.594 MHz(174 km/s), 30.518 kHz(0.091 km/s)	<input type="radio"/>
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Select Lines to Observe in Baseband-3...

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 'Spectral 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.

115.2712 GHz

Baseband-0:
one SPW

Baseband-1:
one SPW

Baseband-2:
one SPW

Baseband-3:
one SPW

Sensitivity Calculator

Spectral Line Selection Tool

Select Spectral Lines

Species Filter
H
 Include description

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

Transition	Description	Rest Frequency	Sky Frequency	Upper-state Energy	Lovas Intensity	$S_{ij} \mu^2$	Catalog
HC3Nv7=2 J=25-24, l=0	Cyanoacetylene	228.822 GHz	221.255 GHz	780.68 K		16.8344.84 D ²	Offline
HC3Nv7=2 J=25-24, l=2f	Cyanoacetylene	228.898 GHz	221.328 GHz	783.32 K		23.1342.64 D ²	Offline
DNC 3-2	Hydrogen Isocyanide	228.91 GHz	221.34 GHz	21.97 K		0.2327.91 D ²	Offline
H13CCCN J=26-25	Cyanoacetylene	229.203 GHz	221.623 GHz	148.51 K		20.7362.07 D ²	Offline
H(30)α	Hydrogen Recombination Line	231.901 GHz	224.232 GHz				Offline
He(30)α	Helium Recombination Line	231.995 GHz	224.323 GHz				Offline
HCCCHO 22(2,21)-22(1,22)	Z-Propenal	232.328 GHz	224.645 GHz	125.28 K		2.820.71 D ²	Offline

Add to Selected Transitions

Selected transitions

Splatalogue spectral line database

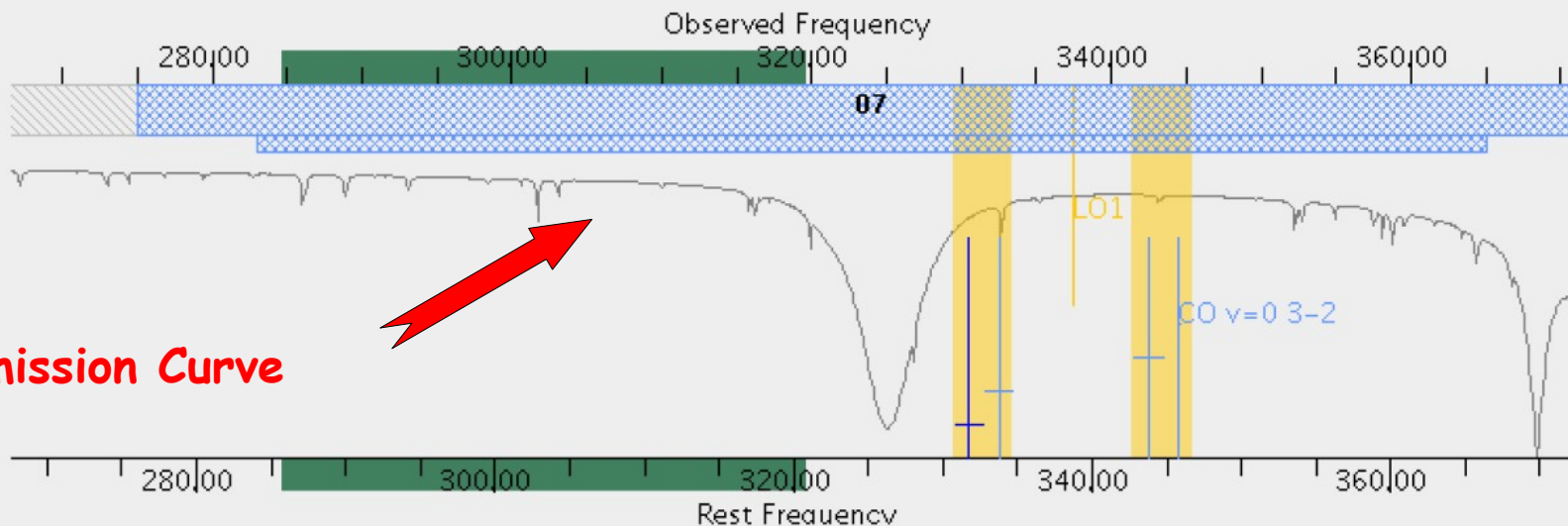
- i. Online search of millions of spectral line transitions
- ii. The OT has a smaller internal version

The Visual Spectral Editor

Visualisation



After creating spectral setups in the forms you may visualize them here.
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



Transmission Curve

Overlays:

Receiver Bands

Transmission

Overlay Lines

Select Lines to Overlay...

Water Vapour Column Density: Automatic Choice Manual Choice

0.913mm (3rd Octile)

Viewport:

Pan to Line

Zoom to Band

Reset

Calibration Setup

The "System-defined calibration" is STRONGLY recommended

Goal Calibrators

Select *User-defined calibration* to choose your own calibrators, or *System-defined calibration* to let the system automatically select the calibrators to be observed. We **STRONGLY** suggest that you leave this choice at 'System-defined' - the Observatory will ensure that suitable calibrators are selected.

System-defined calibration

User-defined calibration

- When first selected, the table shows a reasonable set of calibrators to include.
- *Dynamic Calibrators* are found by a source catalogue query executed at project execution time. Edit the query with *Edit Criteria...*
- *Fixed Calibrators* are calibrators specified now, at project creation time. Specify which calibrator should be observed with *Edit Target...*

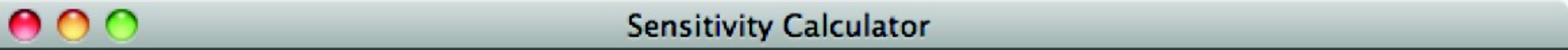
Add Dynamic Calibrator...

Add Fixed Calibrator...

Delete Selected Calibration

Calibration Intent	Target Type	Source Name	RA	Dec	
Pointing	Dynamic Calibrator		17:56:21.287 ± 20.0...	-21:57:21.877 ± 20...	Edit Criteria...
Atmospheric	Dynamic Calibrator		17:56:21.287 ± 20.0...	-21:57:21.877 ± 20...	Edit Criteria...
Amplitude	Dynamic Calibrator		17:56:21.287 ± 20.0...	-21:57:21.877 ± 20...	Edit Criteria...
Pointing	Dynamic Calibrator		17:56:21.287 ± 20.0...	-21:57:21.877 ± 20...	Edit Criteria...
Bandpass	Dynamic Calibrator		17:56:21.287 ± 20.0...	-21:57:21.877 ± 20...	Edit Criteria...
Bandpass	Dynamic Calibrator		17:56:21.287 ± 20.0...	-21:57:21.877 ± 20...	Edit Criteria...
Pointing	Dynamic Calibrator		17:56:21.287 ± 20.0...	-21:57:21.877 ± 20...	Edit Criteria...
Phase	Dynamic Calibrator		17:56:21.287 ± 20.0...	-21:57:21.877 ± 20...	Edit Criteria...
Bandpass	Dynamic Calibrator		17:56:21.287 ± 20.0...	-21:57:21.877 ± 20...	Edit Criteria...
Amplitude	Fixed Target	Uranus	N/A	N/A	Edit Target...

Sensitivity Calculator



Sensitivity Calculator

Common Parameters

Dec	-13:00:00.000		
Polarization	Dual ▼		
Observing Frequency	345.00000	GHz	▼
Bandwidth per Polarization	10.0	GHz	▼
Water Vapour Column Density	<input type="radio"/> Automatic Choice <input checked="" type="radio"/> Manual Choice		
	2.748mm (6th Octile) ▼		
tau/Tsky	tau=0.446, Tsky=99.067 K		
Tsys	288.881 K		

Identical version is available as a web applet in the Science Portal.

Individual Parameters

	12m Array	7m Array	Total Power Array
Number of Antennas	32	6	1
Resolution	2.0 arcsec ▼	5.974554 arcsec	17.923662 arcsec
Sensitivity(rms)	.1 mJy ▼	Infinity Jy ▼	Infinity Jy ▼
(equivalent to)	0.00026 K ▼	Infinity K ▼	Infinity K ▼
Integration Time	13.50695 min ▼	0.00000 s ▼	0.00000 s ▼

Integration Time Unit Option: Automatic ▼

Calculate Integration Time Calculate Sensitivity Close

Control and Performance

Control and Performance ?

Configuration Information

}	Antenna Beamsize ($1.2 * \lambda / D$)	12m <input type="text" value="53.848 arcsec"/>	7m <input type="text" value="92.310 arcsec"/>
	Longest baseline (L_{max})	<input type="text" value="1.091 km"/>	<input type="text" value="165.6 m"/>
	Synthesized beamsize (λ/L_{max})	<input type="text" value="0.494 arcsec"/>	<input type="text" value="3.252 arcsec"/>
	Shortest baseline (L_{min})	<input type="text" value="43.3 m"/>	<input type="text" value="15.1 m"/>
	Maximum recoverable scale ($0.6\lambda/L_{min}$)	<input type="text" value="7.462 arcsec"/>	<input type="text" value="21.396 arcsec"/>

Most Extended Configuration Most Compact Configuration ← 2 config.

Desired Performance

}	Desired Angular Resolution	<input type="text" value="2.0"/> <input type="text" value="arcsec"/>
	Largest Angular Structure in source	<input type="radio"/> Point Source <input checked="" type="radio"/> Extended Source <input type="text" value="100.00000"/> <input type="text" value="arcsec"/>
	Desired mosaic sensitivity	<input type="text" value="20.0"/> <input type="text" value="mJy"/> equivalent to <input type="text" value="0.46009"/> <input type="text" value="K"/>
	Bandwidth used for Sensitivity	<input type="text" value="FinestResolution"/> <input type="text" value="0.015259 MHz"/>

Do you request complementary ACA Observations? Yes No

Science goal integration time estimate

Does your setup need more time than is indicated by the time estimate? Yes No

Is this observing time constrained (occultations, coordinated observing,...)? Yes No

← ACA suggestion
See next talks

↑

Requested rms
Representative Freq.

Configuration
Total number of
pointings

Calibration

Achieved Sensitivities

ACA + TP Time

ALMA OT - Information

Estimated time

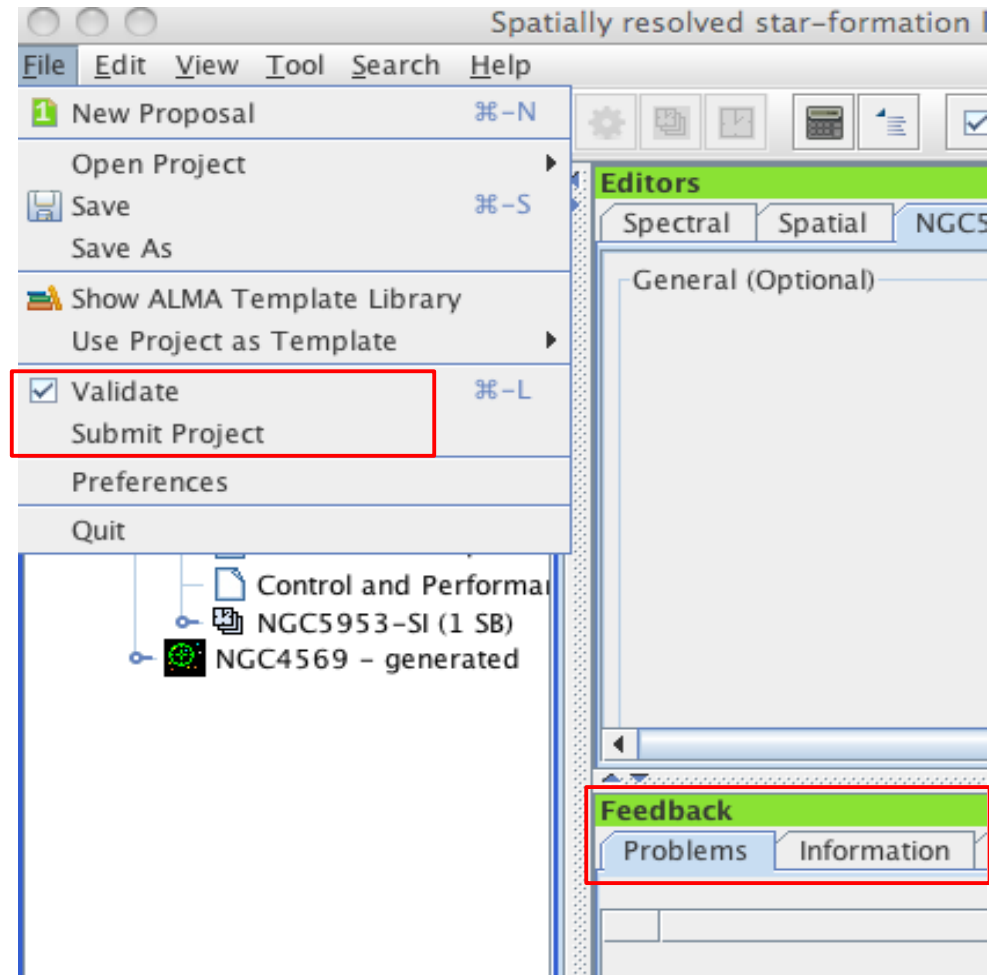
Requested sensitivity	20.0000 mJy
Bandwidth used for sensitivity	0.200 km/s
Representative frequency (sky, first source)	114.84 GHz
Precipitable water vapour (first source)	5.186mm (7th Octile)
ALMA 12m Array	
Array configuration	C32-2
Time on source per pointing	2.96 min
Total number of pointings (all sources)	27
Total time on source	1.33 h
Total time on calibrators	25.90 min
Total overheads	35.00 min
Total 12m array time (inc. calibration & overheads)	2.35 h
Calibration Breakdown	
Estimated number of tunings required	1
3 x Bandpass (inc. AtmosphericCal)	6.92 min
18 x Pointing	5.40 min
3 x Amplitude (inc. AtmosphericCal)	1.41 min
23 x Phase	3.07 min
21 x Atmospheric	9.10 min
Additional calibration overheads	14.00 min
Achievable Sensitivity	
Line@101 with 12m Array	12.0012 mJy
Line@103 with 12m Array	12.1515 mJy
Line@113 with 12m Array	15.4209 mJy
CO v=0 1-0 with 12m Array	20.0000 mJy
Atacama Compact Array and Total Power Array	
ALMA 12m array multiplication factor	3.0
Total ACA + TP time	7.05 h
Estimated total time for science goal	9.40 h

OK

Time on source
Time on calibrators
Total overheads

Summary Information, Validation and Submission

- ◆ Once the proposal is complete, various pieces of **summary** info can be obtained:
 - SG summaries
 - Proposal summary
 - Technical Assessment Flag sheet
 - Whole Proposal
- ◆ **Validation**: see Feedback Panel. If the validation is not successful, submission will fail
- ◆ **Submission** and Resubmission: an email will be sent to all investigators





The OT may validate observations not compliant with Cycle 1 capabilities: these proposals will be rejected!

Documentation & Help

The screenshot shows the 'Overview' page of the ALMA Science Portal. On the left, a 'Contextual Help' section provides instructions for creating a new proposal. On the right, a 'Phase I: Science Proposal' workflow diagram shows the steps from 'New Science Proposal' to 'Submit Science Proposal'. Below the diagram are buttons for 'Importing And Exporting', 'Template Library', 'Need More Help?', and 'View Phase 2 Steps'.

Contextual Help

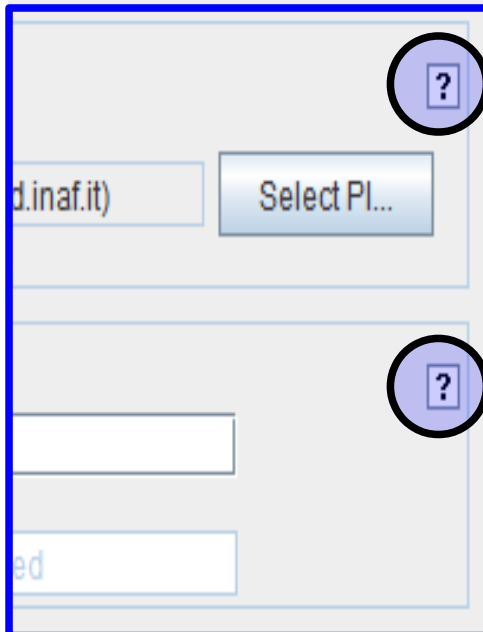
1. Please ensure you and your co-Is are registered with the [ALMA user portal](#)
2. Create a new proposal by either:
 - Selecting *File > New Proposal*
 - Clicking on the  icon in the toolbar
 - Or clicking on this [link](#)
3. Click on the  [proposal](#) tree node and complete the relevant fields.

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 SCIENCE PORTAL:

OT User Manual

OT Video Tutorial

For any questions on **OT**, **ALMA** data reduction, ...
contact the ALMA Helpdesk @ the **ALMA SCIENCE PORTAL**:

<http://almascience.org>

submitting a ticket to the ALMA Helpdesk
(and specifying your preferred ARC)

ITALIAN ARC

Web: <http://www.alma.inaf.it>

Email: help-desk@ira.inaf.it

Enjoy your *Cycle 1* ALMA proposal!

Deadline: 15:00 UT on July 12, 2012