



ALMA Observing Tool (OT)
for Cycle 6 Proposal Preparation:
Update since last cycle

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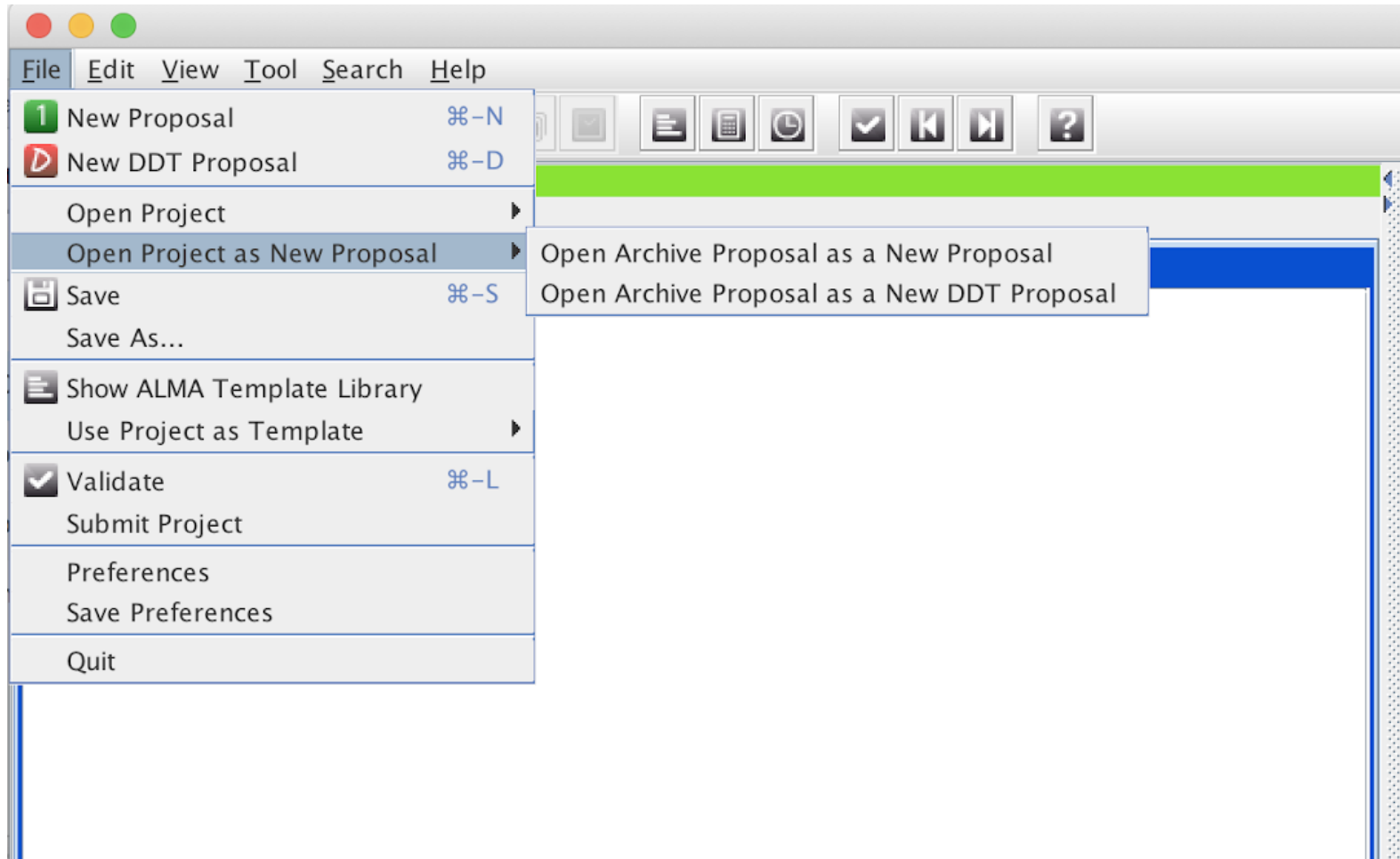
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1) JAVA version

- OT will only work using **Java 8 (64 bit)**.
Java 9 has been recently released, but this should not be used.

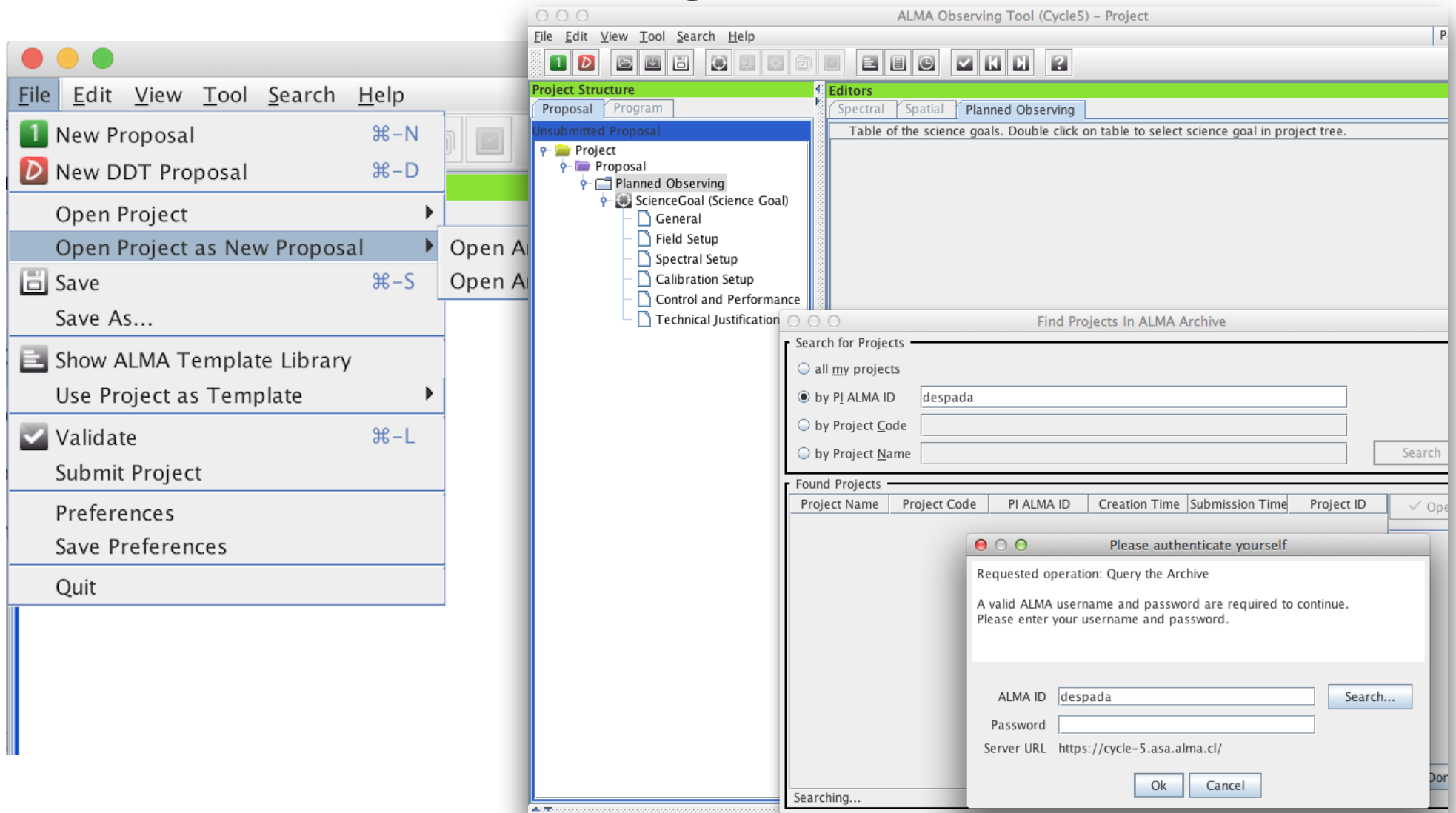


2) Resubmitting previous projects



Now possible to convert between normal
and DDT proposals

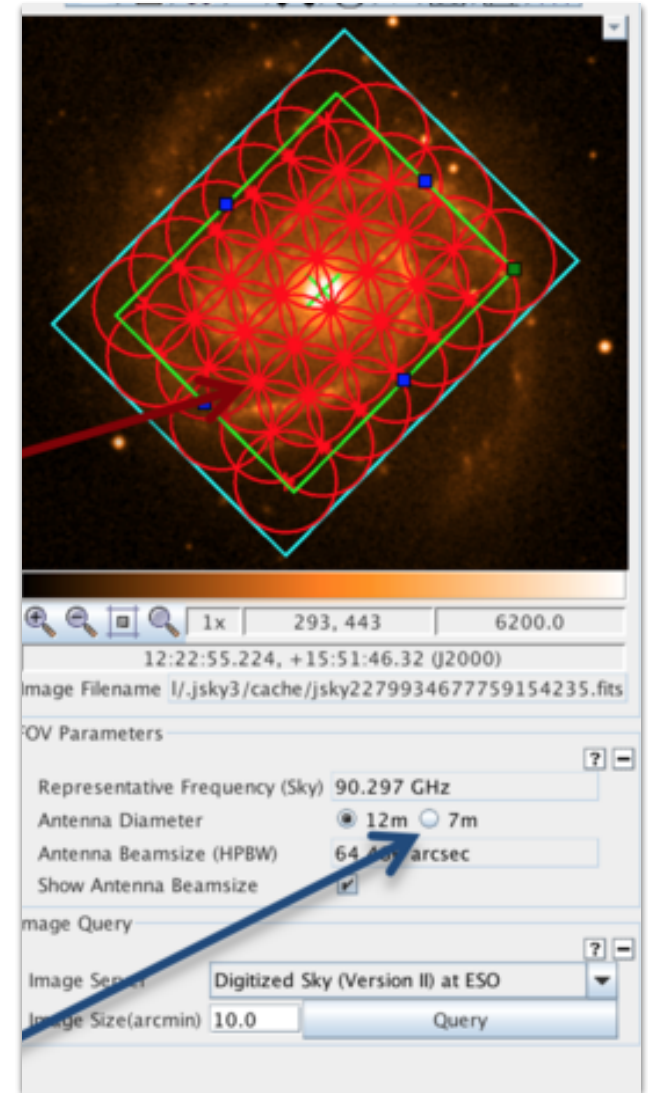
2) Resubmitting previous projects



Now possible to convert between normal and DDT proposals

3) Galactic coordinates

- OT had partially supported Galactic coordinates for some time, but now this is improved:
 - The spatial visualizer displays externally loaded fits in Galactic coordinates and will convert between different coordinate systems.
 - Source coordinates that are read via a text file are interpreted in Galactic if they are in decimal degrees.



4) Circular polarization

- The spectral setup is defined in exactly the same way as for linear polarization, but separate estimates of the continuum and linear polarization of the source should now be entered.
- OT enforces lower limits on the allowed polarization percentage (different for circular and linear). For circular it is 1.8%.

5) Circular polarization

New fields in 'Expected Source Properties' in Field setup

The screenshot displays the ALMA Observing Tool (Cycle6) - Project interface. The main window is titled 'ALMA Observing Tool (Cycle6) - Project' and shows a 'Perspective' view. The 'Editors' panel is active, with the 'Field Setup' tab selected. The 'Spatial Image' panel shows a black image with a yellow box indicating the field of view. The 'SinglePoint' panel is open, showing the 'Expected Source Properties' section, which is highlighted with a red box. This section contains the following fields:

Property	Value	Unit
Peak Continuum Flux Density per Synthesized Beam	0.00000	Jy
Continuum Linear Polarization	0.0	per cent
Continuum Circular Polarization	0.0	per cent
Peak Line Flux Density per Synthesized Beam	0.00000	Jy
Line Width	0.00000	km/s
Line Linear Polarization	0.0	per cent
Line Circular Polarization	0.0	per cent

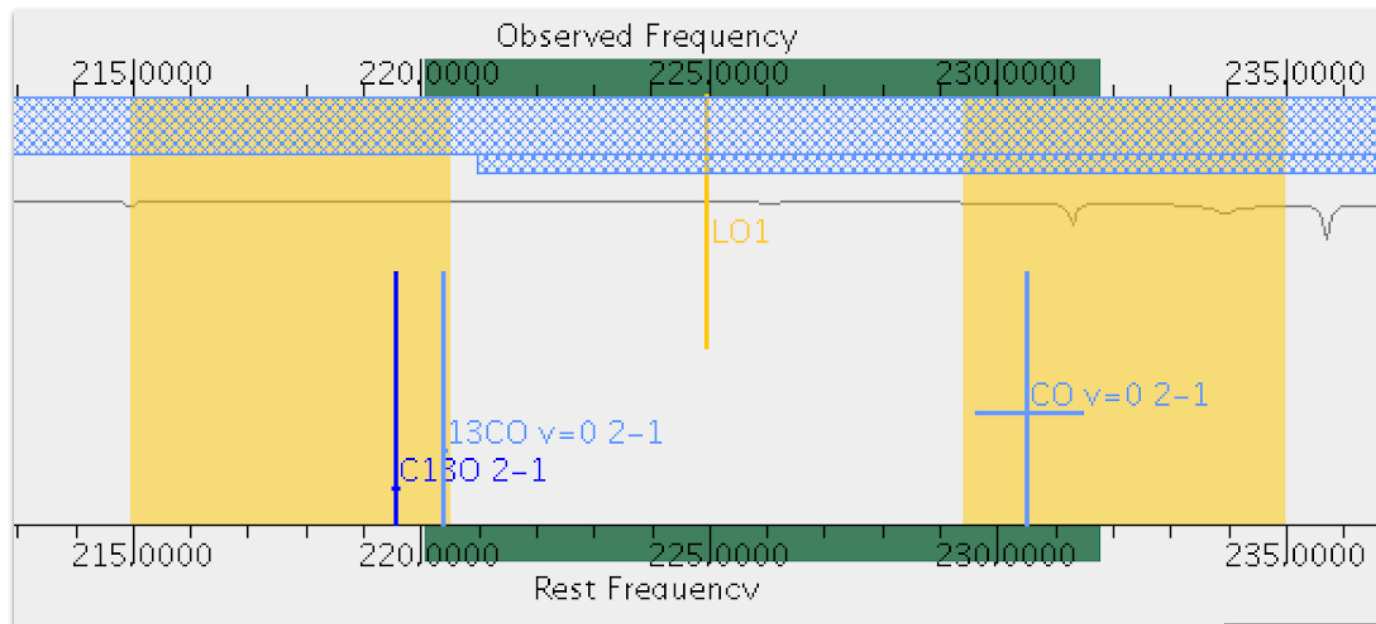
The 'Field Center Coordinates' section is also visible at the bottom of the 'Expected Source Properties' panel.

6) Band 8

- Band 8 observations become standard
- Therefore Band 8 observations are now possible with ACA standalone

7) Band 6 IF range

- Since Cycle 0, the IF range of band 6 has been 5 - 10 GHz, but it has been extended by 0.5 GHz (i.e. 4.5 - 10 GHz).
- It is now easier to observe the spectral setup with CO, ^{13}CO and $\text{C}^{18}\text{O}(2-1)$ lines



8) Correlator data rates

- The OT now enforces a strict upper limit of **70 MB/s** for the (peak) data rate assuming 50 antennas (maximum that might be used, although sensitivity calculations are based on 43 antennas)
- If limit is exceeded, then spectral averaging should be used (or spectral windows removed) until validation error disappears

9) Simultaneous 12m+ACA

- In addition to specific time windows and multiple visits, you can also request that the 12m and ACA observations are executed simultaneously using a tick box.
- In that case 7m/TP time will be as for the 12m array
- Only allowed if only one 12m configuration required

9) Simultaneous 12m+ACA

- In addition to specifying observation visits, you can also specify observation parameters. These observations are entered in the tick box.
- In that case 7m/TF
- Only allowed if only

These parameters are used to control various aspects of the observations, including the required antenna configuration.

Control and Performance

Configuration Information

Antenna Beamsize ($1.13 * \lambda / D$)	12m	25.258 arcsec	7m	43.300 arcsec
Number of Antennas	12m	43	7m	10

ACA 7m configuration Most compact 12m configuration

Longest baseline	0.049 km	0.161 km	16.1
Synthesized beamsize	6.665 arcsec	1.825 arcsec	0.02
Shortest baseline	0.009 km	0.015 km	0.25
Maximum recoverable scale	31.655 arcsec	15.146 arcsec	0.26

Desired Performance

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

0.50000 arcsec

Largest Angular Structure in source 40.0 arcsec

Desired sensitivity per pointing 3.00000 mJy equivalent

Bandwidth used for Sensitivity RepresentativeWindowResolution Frequency

Science goal integration time estimate Time Estimate

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

Simultaneous 12-m and ACA observations Yes No

Are the observations time-constrained? Yes No

Other changes

- **10) If multiple sources, groups** are done within a radius of 10 deg, except for Long baseline configurations, where the radius is 1 deg
- **11) LSRK to barycentric correction** now works properly for all velocity definitions
- **12) Minimum time on source** (adding all sources in a given Scheduling Block) will be the largest of 5 min or 50% of the total calibration time (amplitude and bandpass)