ALMA Observing Tool (OT) for Cycle 6 Proposal Preparation: **Hands-on Session**

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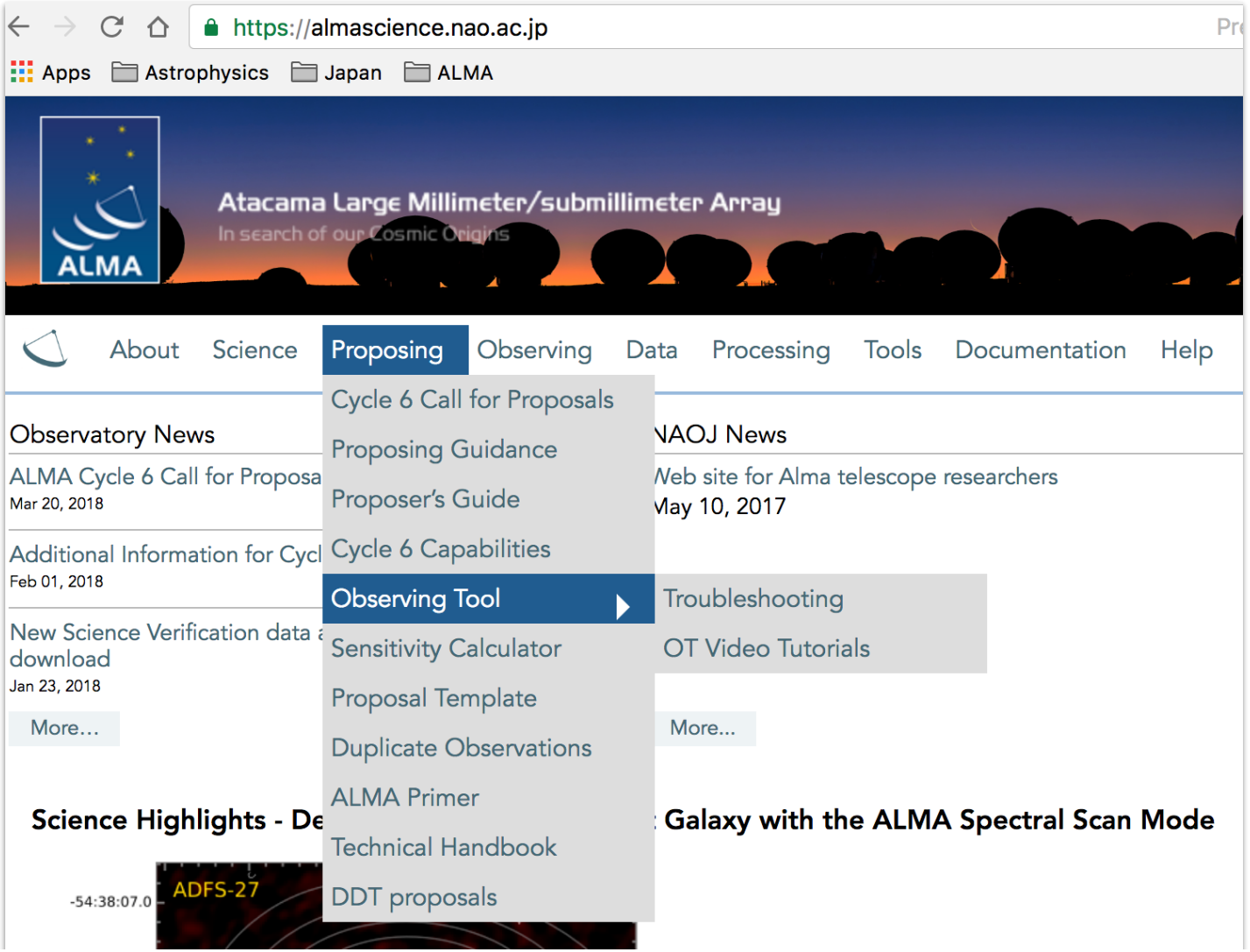
East Asian ALMA Regional Center

Specially Appointed Associate Professor

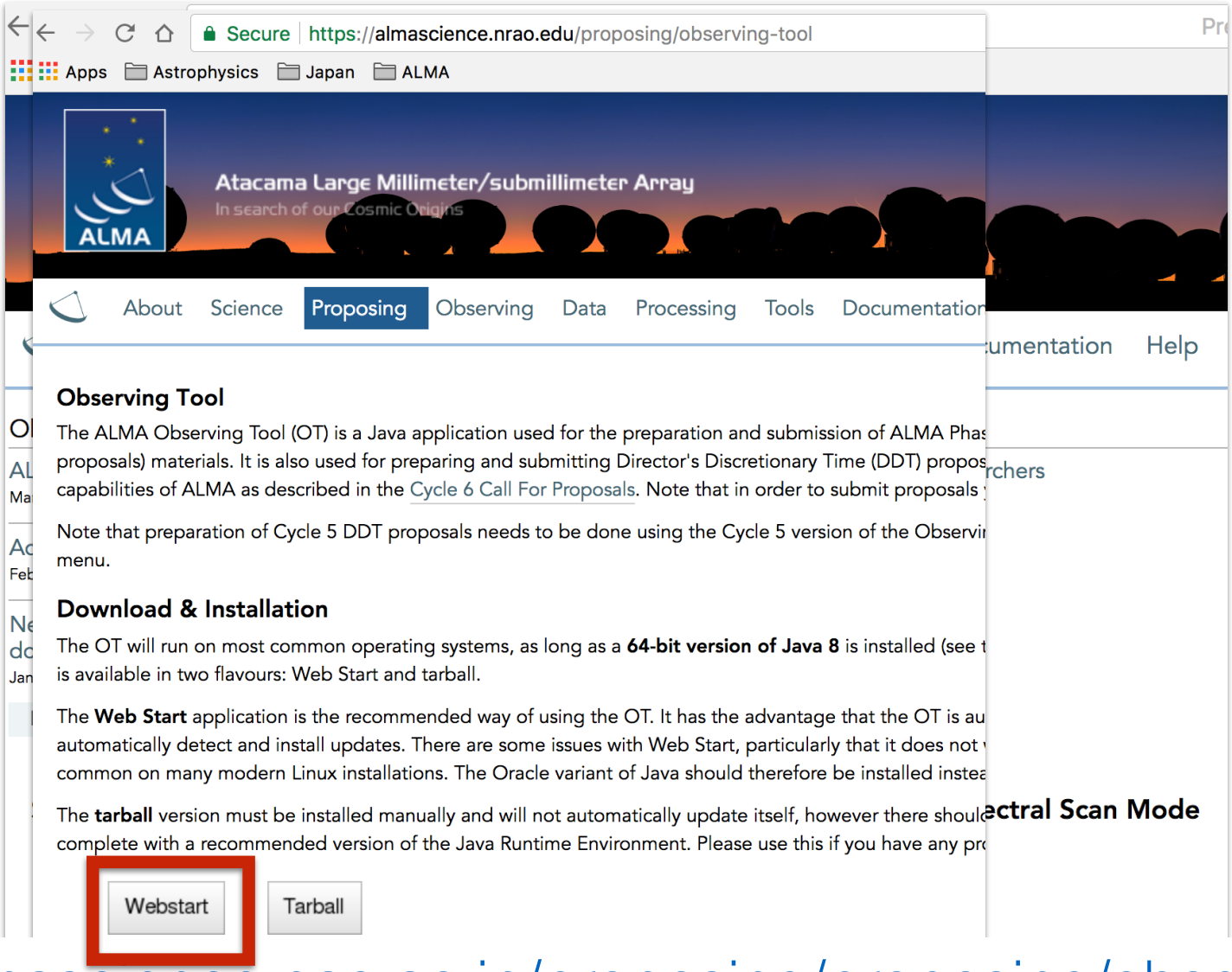
Download and start the OT



https://almascience.nao.ac.jp/proposing/proposing/observing-tool

Note that 64-bit version of Java 8 should be installed. Java 9 has recently been released, but this should not be used.

Download and start the OT



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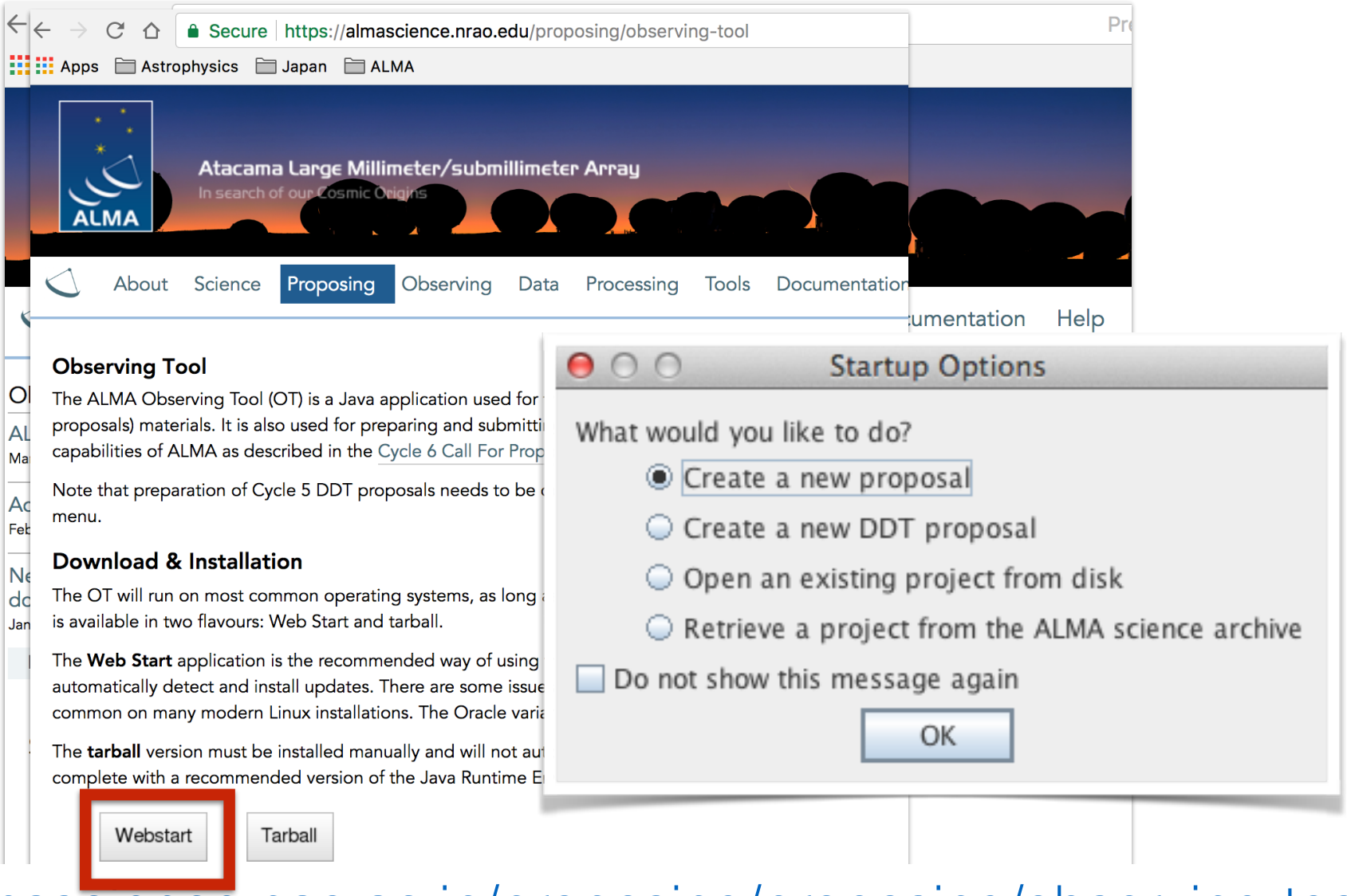

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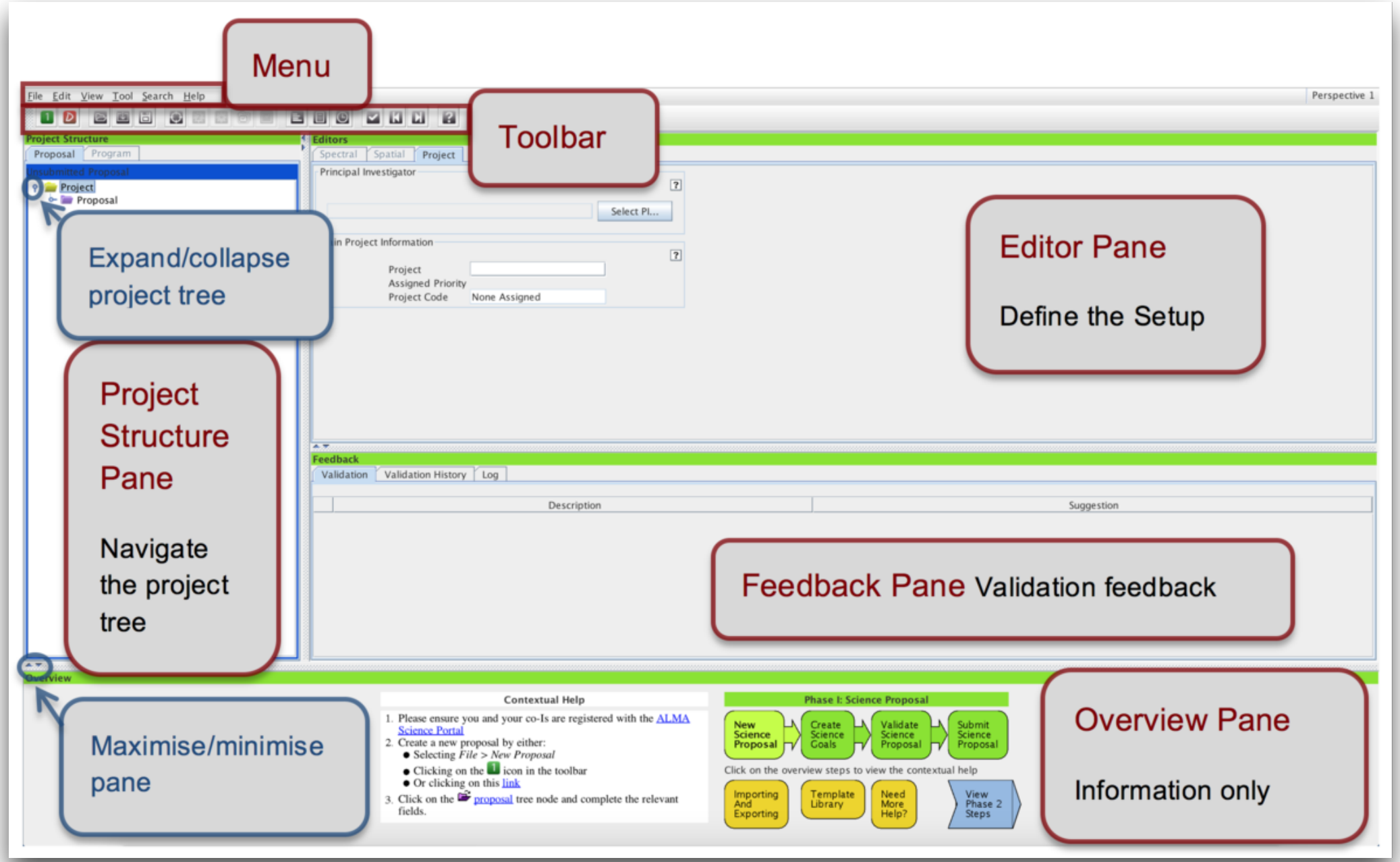
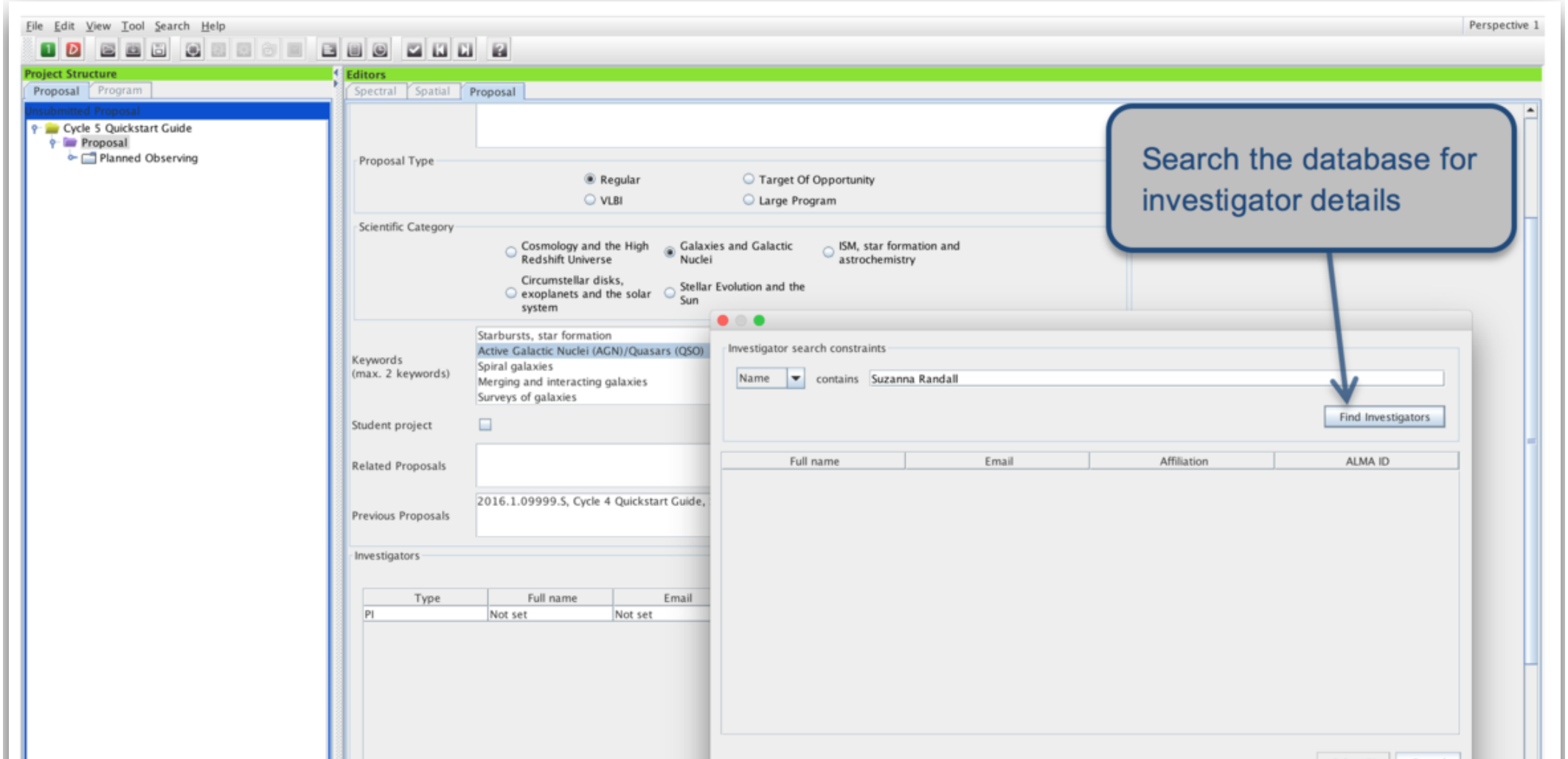
Overview OT


Menu
Toolbar
Expand/collapse project tree
Project Structure Pane
Navigate the project tree
Editor Pane
Define the Setup
Feedback Pane Validation feedback
Maximise/minimise pane
Overview Pane
Information only
File Edit View Tool Search Help
Perspective 1
Project Structure
Proposal
Program
Project
Proposal
Editors
Spectral
Spatial
Project
Principal Investigator
Select PI...
Project Information
Project
Assigned Priority
Project Code
None Assigned
Feedback
Validation
Validation History
Log
Description
Suggestion
Overview
Contextual Help
1. Please ensure you and your co-Is are registered with the ALMA Science Portal
2. Create a new proposal by either:
Selecting File > New Proposal
Clicking on the icon in the toolbar
Or clicking on this link
3. Click on the proposal tree node and complete the relevant fields.
Phase I: Science Proposal
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

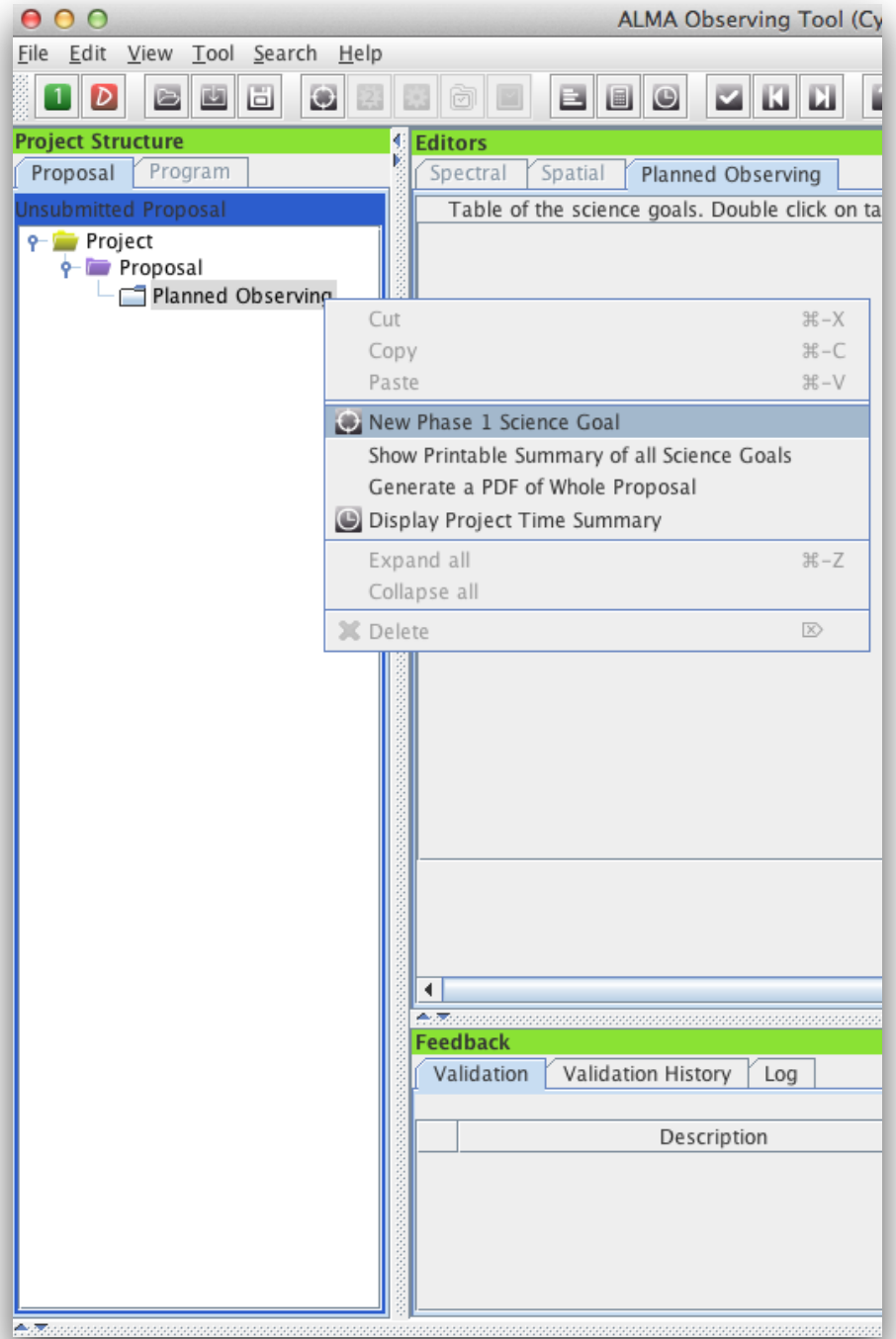
Getting started

In Proposal node:

Proposal title, abstract, proposal type (Regular, ToO, VLBI or large program), scientific category, keywords, related and previous proposals, co-Is, science case, justification if duplicate observations



Create Science Goal



Each Science Goal may contain:

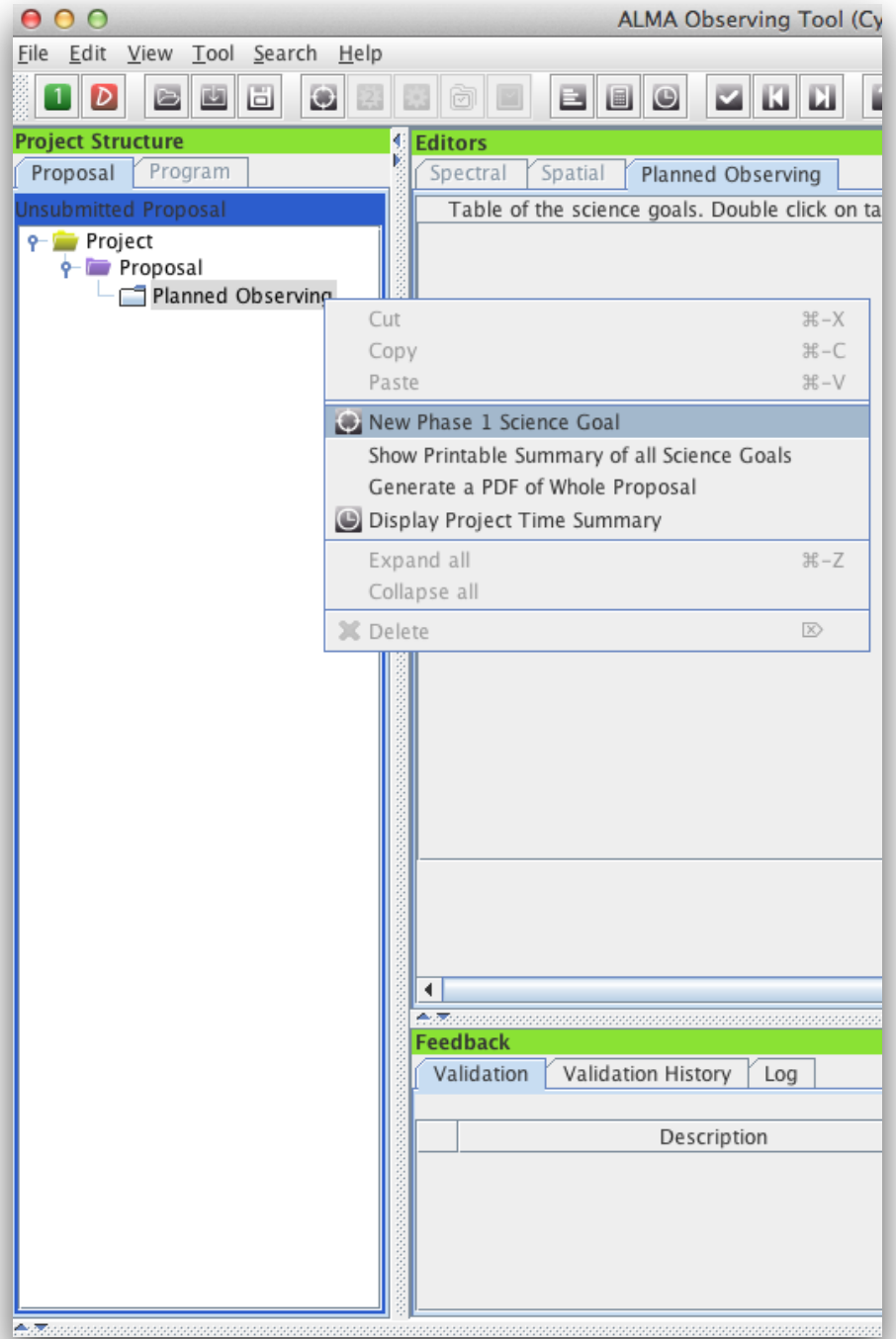
1) one or more sources of the same target type (individual pointing(s) or 1 rectangular field),

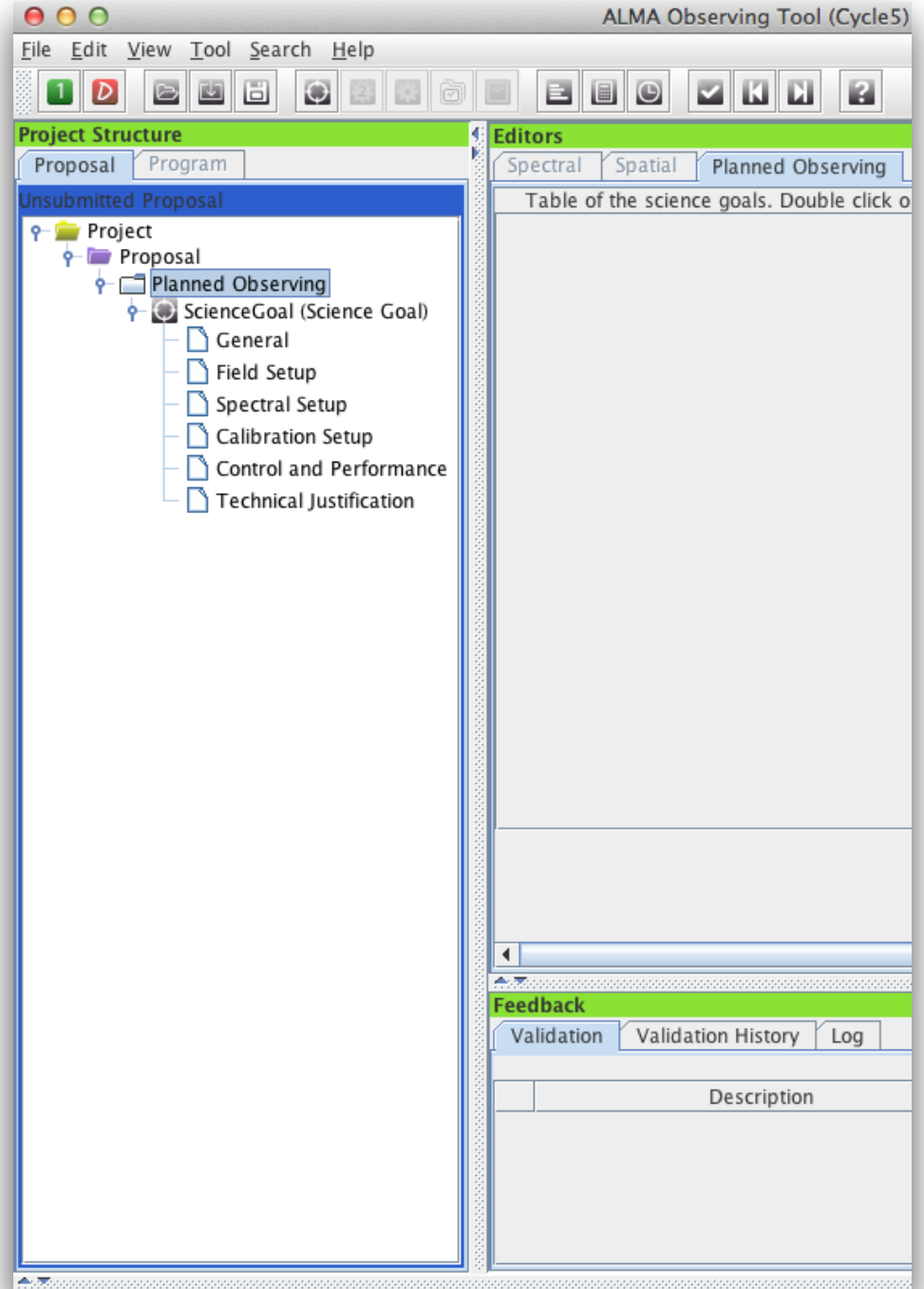
2) one spectral setup (up to five frequency tunings),

3) one calibration strategy, and

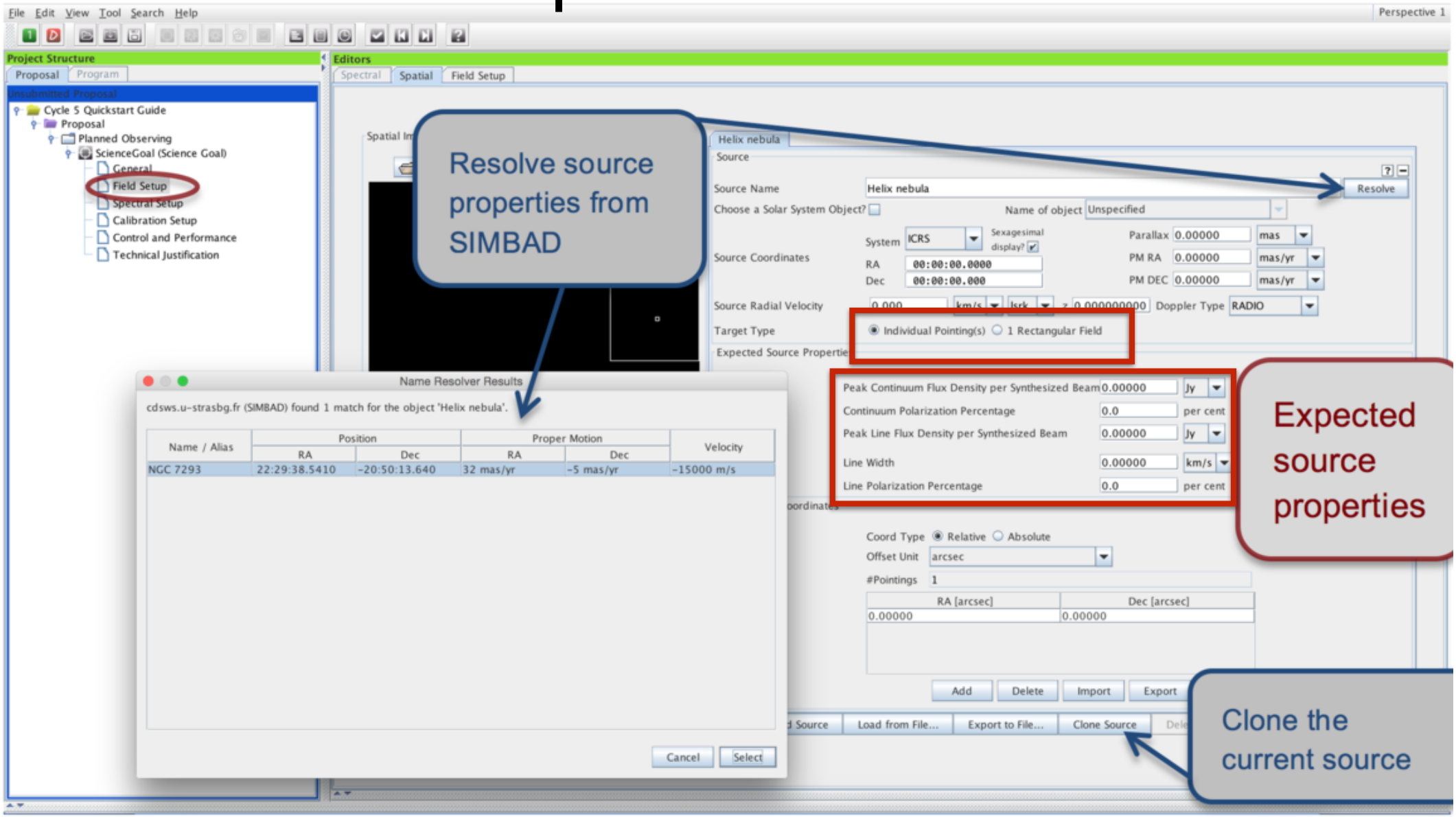
4) one set of control and performance parameters

Create Science Goal



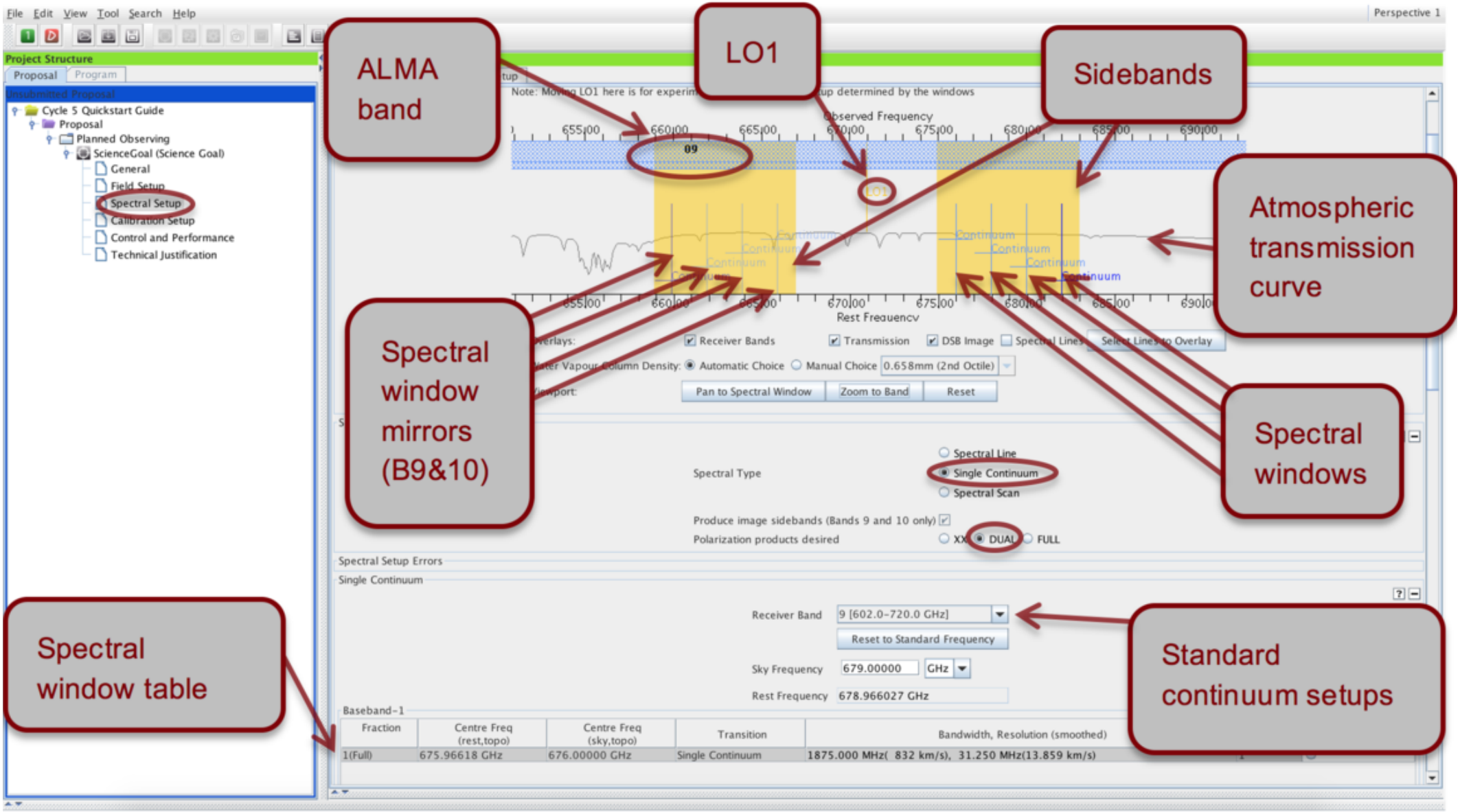


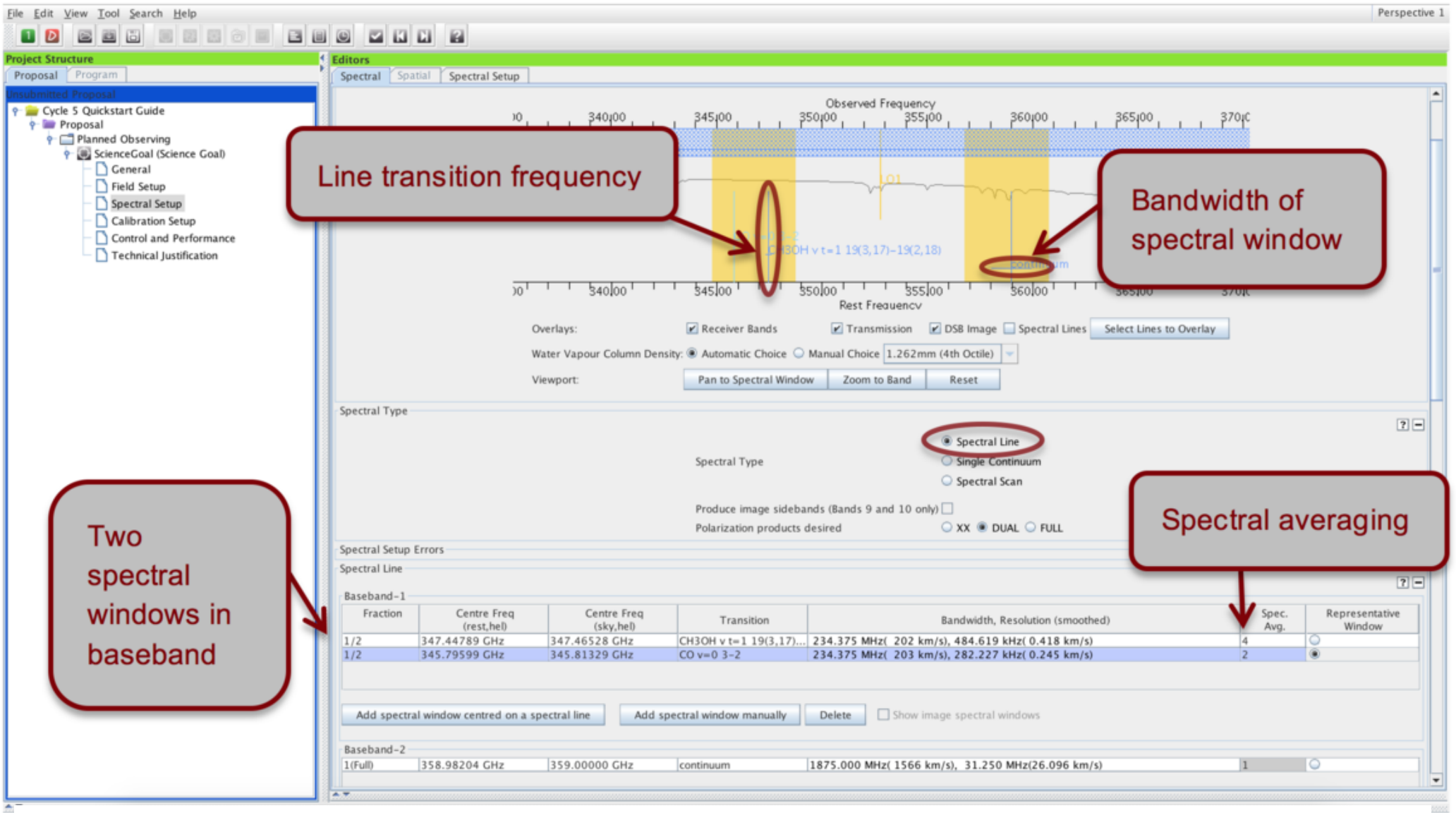
Field Setup



Maximum of 150 pointings per SG

Spectral Setup

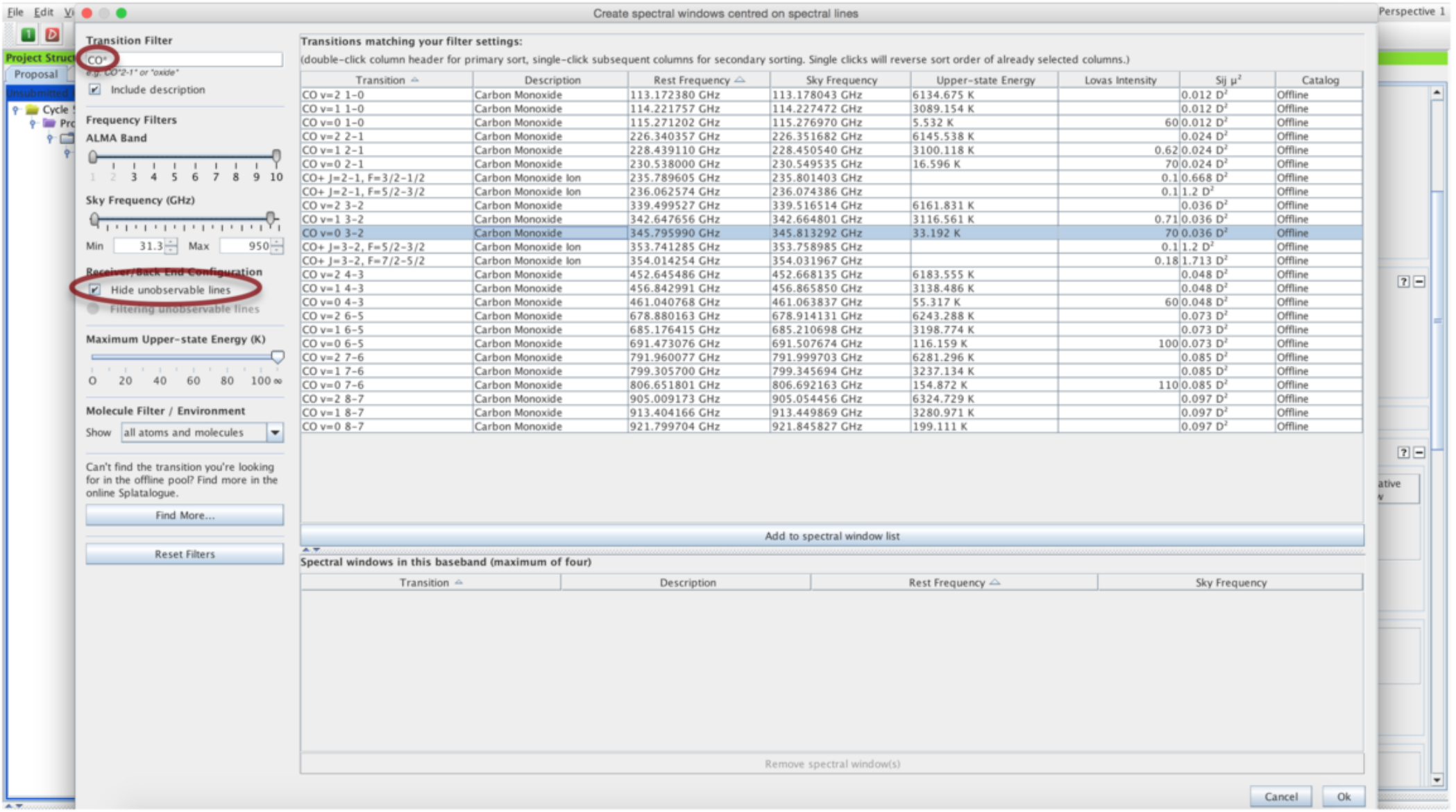




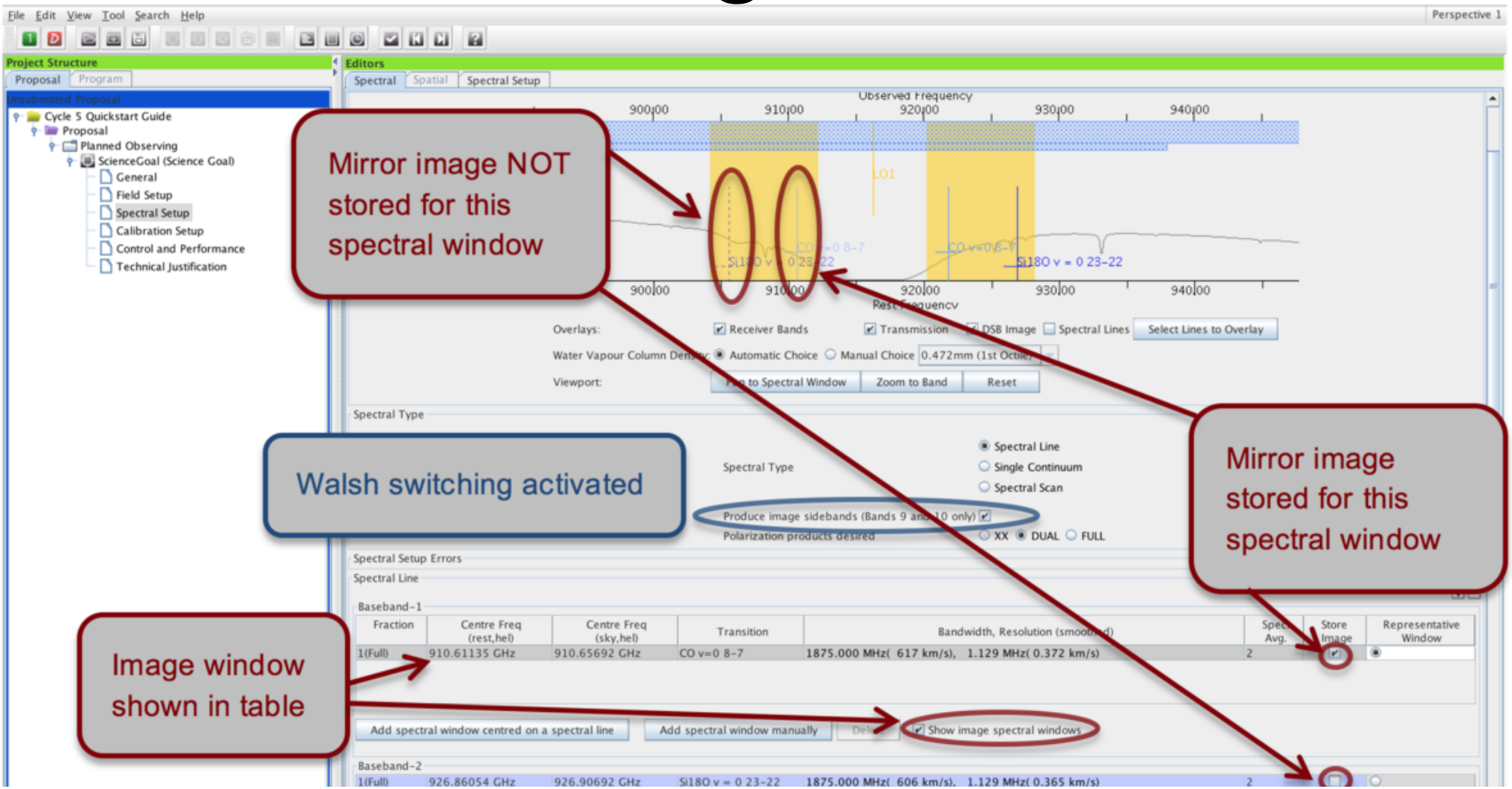
Multi-region mode: Can have 4 spws in each of the 4 basebands, yielding a maximum of 16 spws in a single spectral setup. Within a baseband all spws must have the same spectral resolution (before spectral averaging)

Spectral averaging factor: default is 2 to lower data rates (degrades spectral resolution only by 15 %, but halves data rate). Can be modified in 'Spec Avg.'

Spectral Line Selector Tool

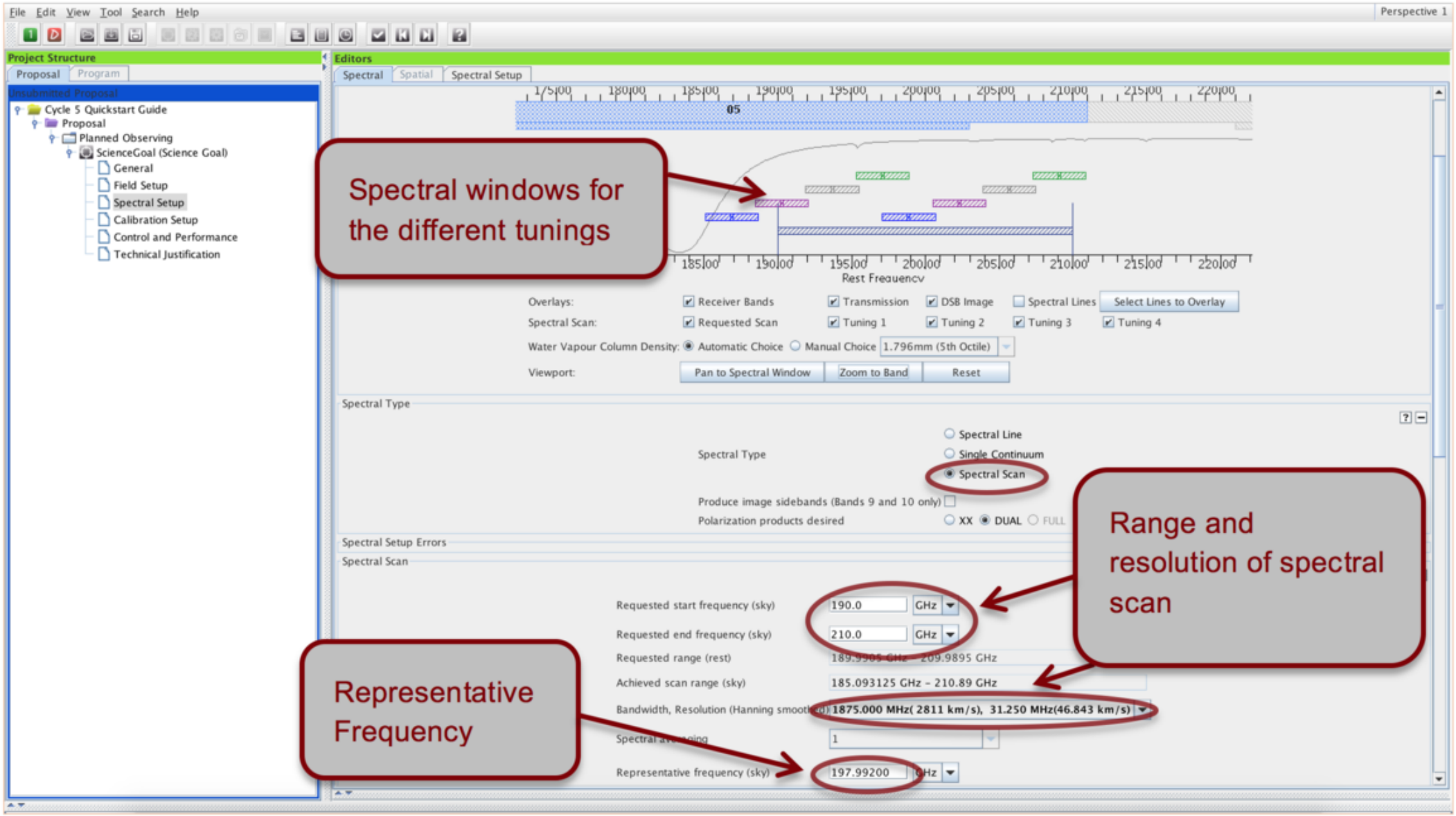


Walsh Switching - Bands 9/10



- For Spectral Line observations, not turned on by default. It can be activated with the ‘Produce image sidebands’ option. Available when all spws in the setup use 1.875 GHz bw
- Storing (and delivery to the PI) of the "mirror" spw data can be switched on or off for each spw individually (‘Store Image’)

Spectral scan



Other spectral setup considerations

- **Define rest frequencies**. Enter the rest frequencies of any spectral lines observed with your spectral setup in the ‘Rest Frequencies’ section below the spectral line tables. These will be stored and used for data reduction and quality assurance purposes.
- The **spectral scan** may in certain cases (relatively long on-source times and many frequency tunings) yield a very inefficient observing strategy. It may be more efficient to set up such spectral scans using separate Science Goals for each frequency tuning.
- Choice of r**epresentative frequency** can severely impact the time estimate, especially in Band 5 and the higher frequency bands 7, 8, 9 and 10. If it falls in a region of poor atmospheric transmission the time estimate will sky-rocket. It is important that the representative frequency is set to the line of interest that falls into the region of the poorest atmospheric transmission, otherwise the requested sensitivity will not be reached for this line.

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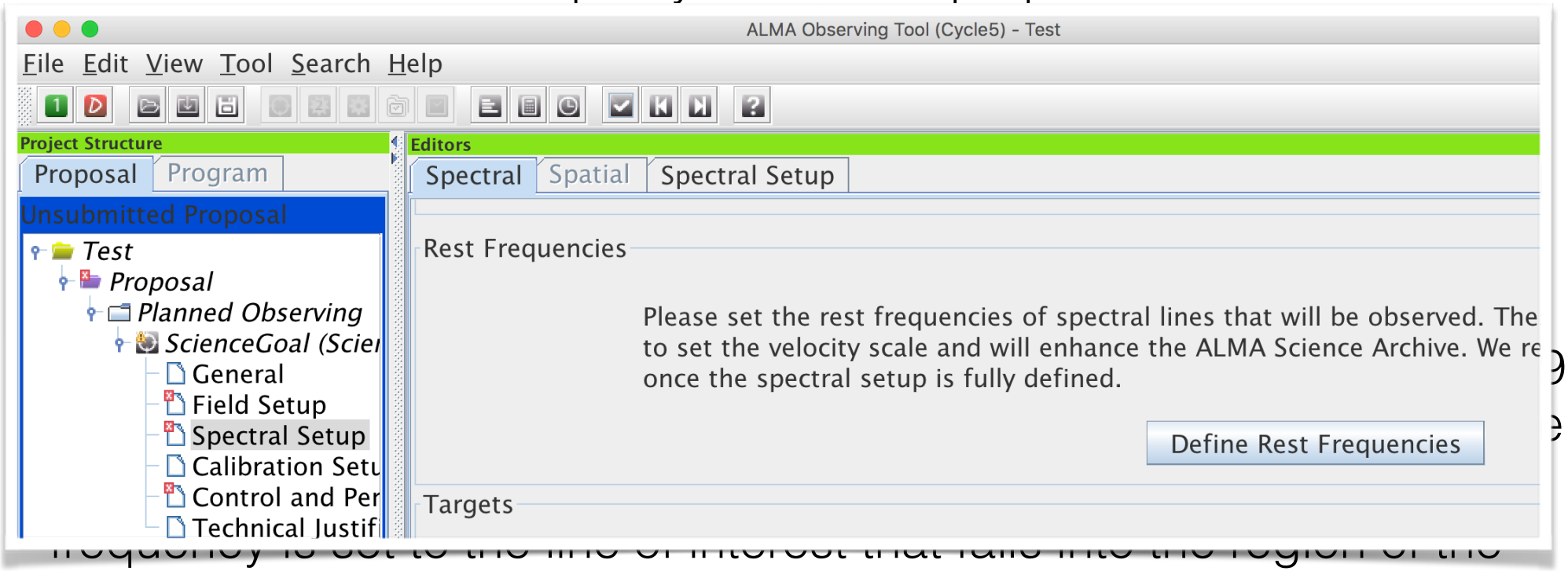
- **Define rest frequencies**. Enter the rest frequencies of any spectral lines observed with your spectral setup in the 'Rest Frequencies' section below the spectral line tables. These will be stored and used for data reduction and quality assurance purposes.



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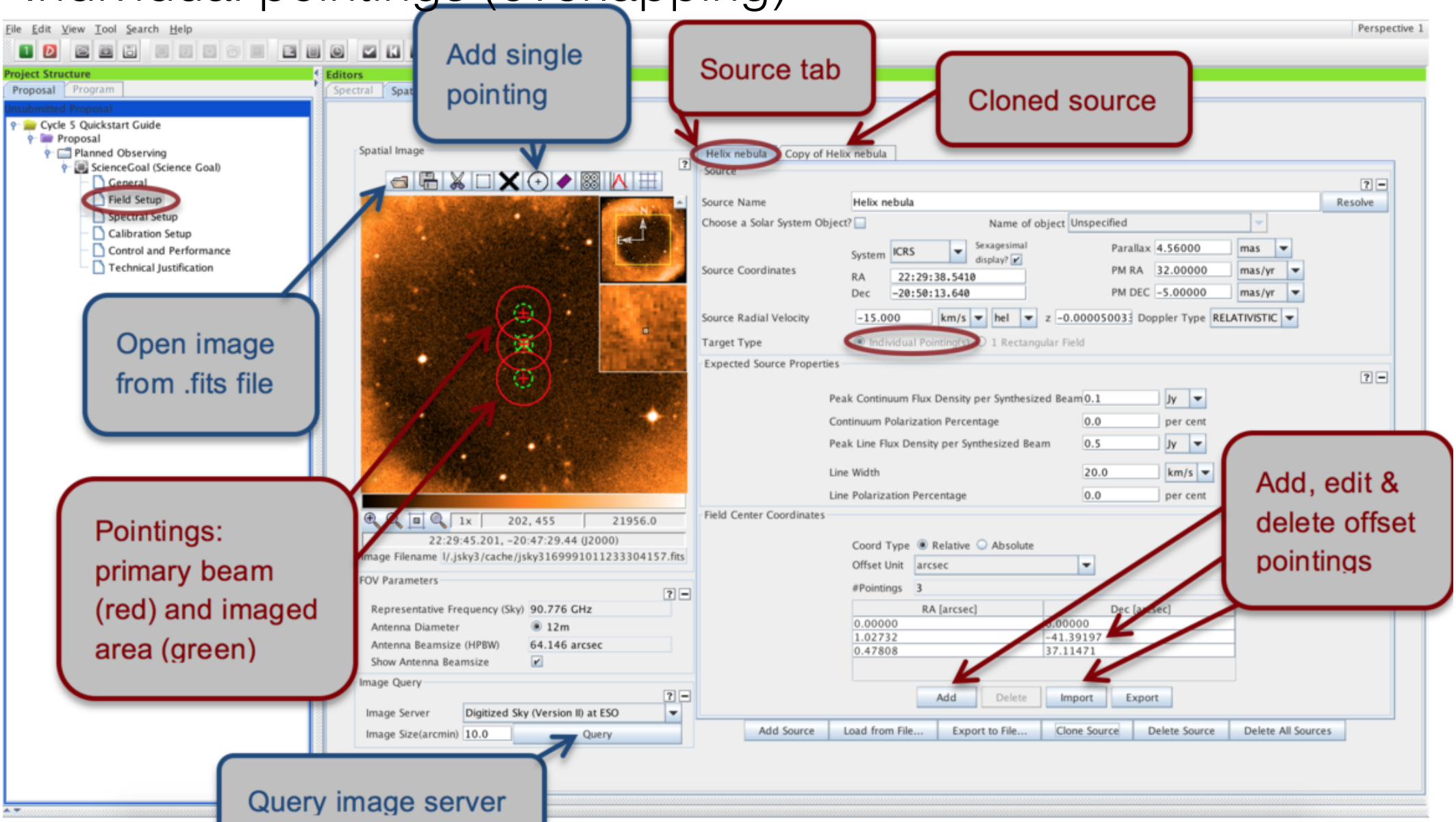
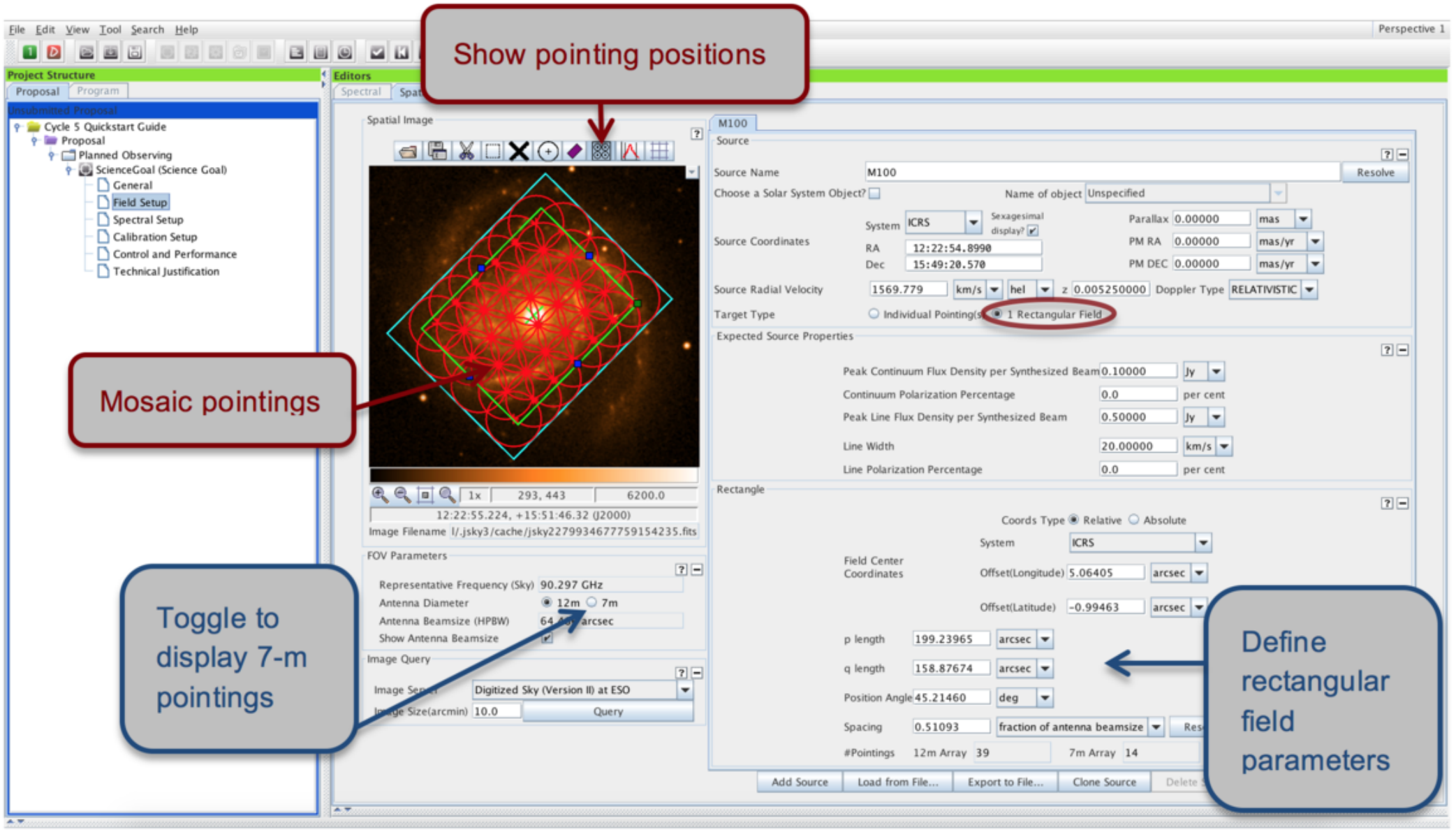
Individual pointings (overlapping)



- Response is not uniform across field of view (primary HPBW, Red). Green =1/3 HPBW
- Non-overlapping offset pointings are no longer allowed within one field source. Instead, all pointings within one field source must overlap and will be processed as one image

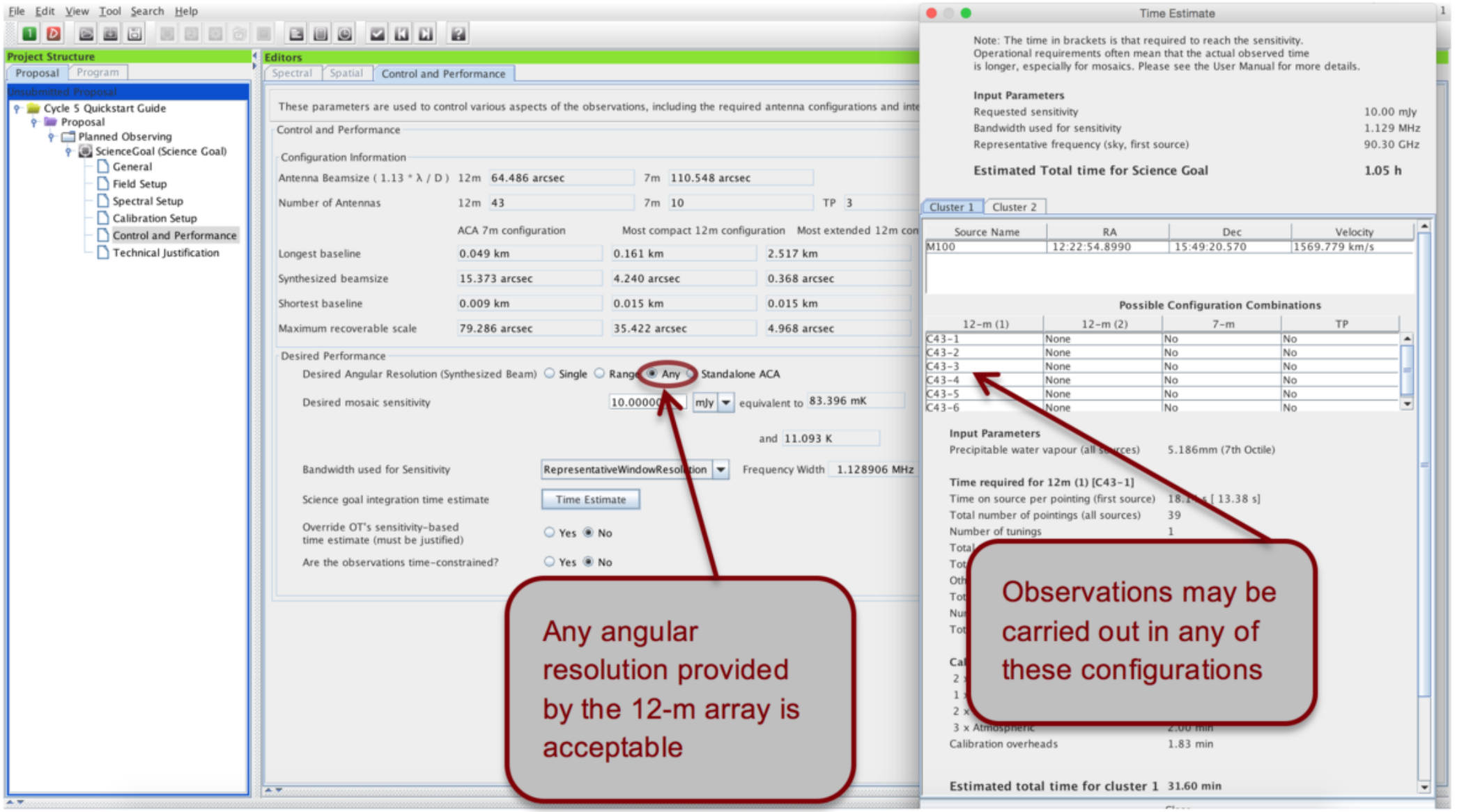
Mosaic



By default, the spatial editor shows only the rectangular area defined for the mosaic. To see the individual pointings set up by the OT, you need to press the Show pointing positions button in the toolbar above the spatial editor.

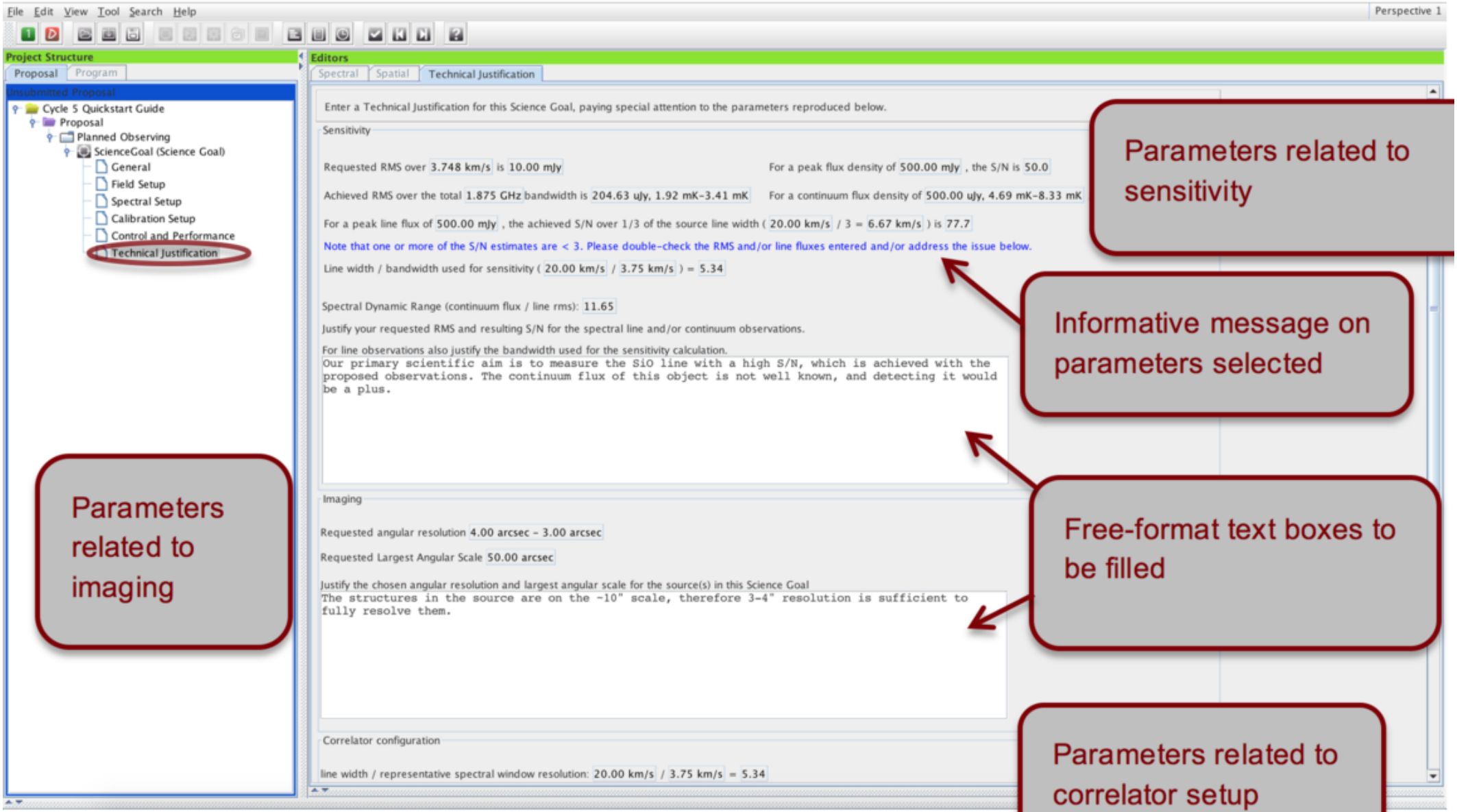
Calibration setup

- Should normally use the default **system defined calibration** option in Calibration Setup editor.
- In Cycle 5 there is an extra option for the system-defined calibration strategy: force separate amplitude calibration using solar system object.
- If need special calibration then set **user-defined calibration**.

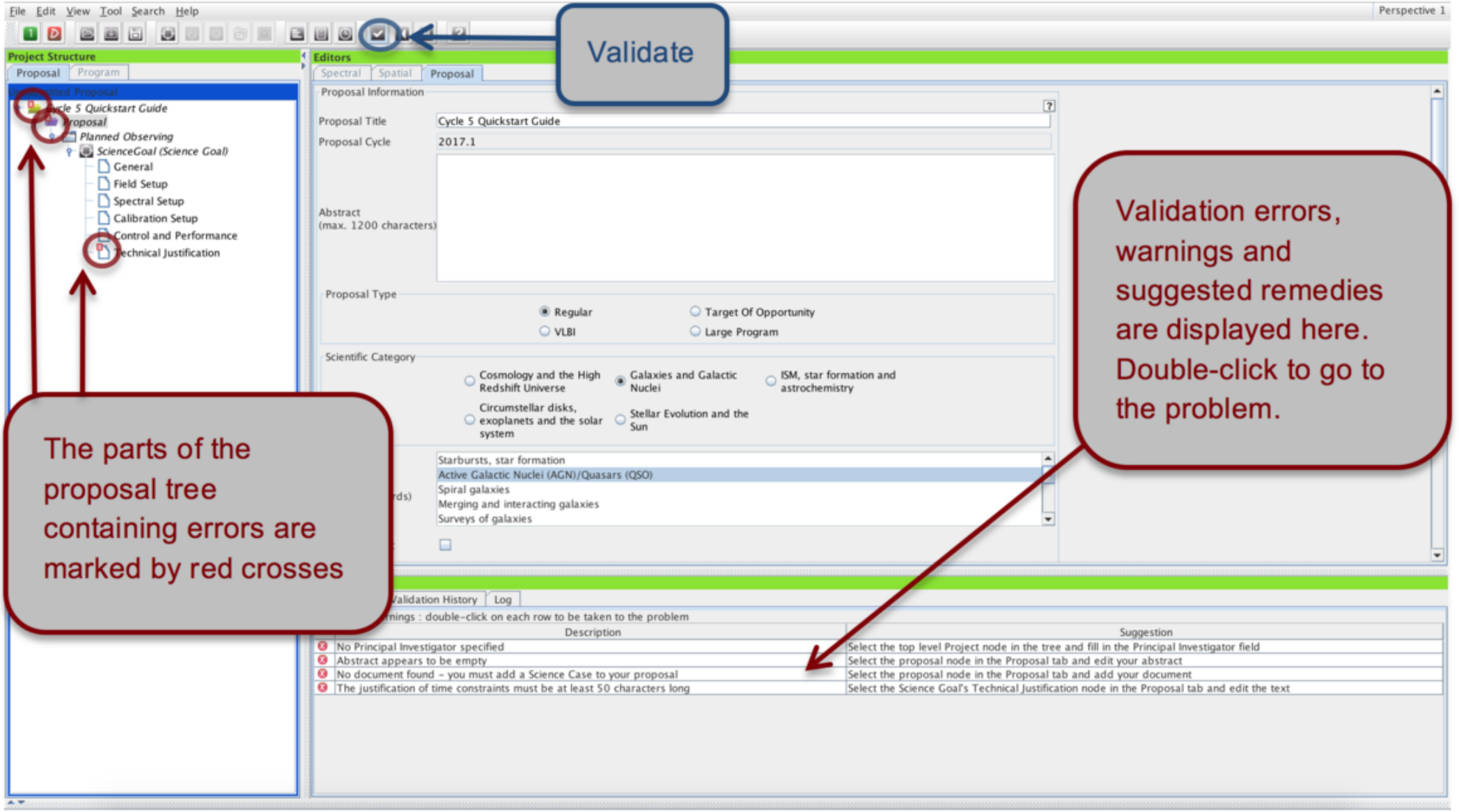


- Check scheduling feasibility using the assigned configuration
- Check you used the right bandwidth for sensitivity

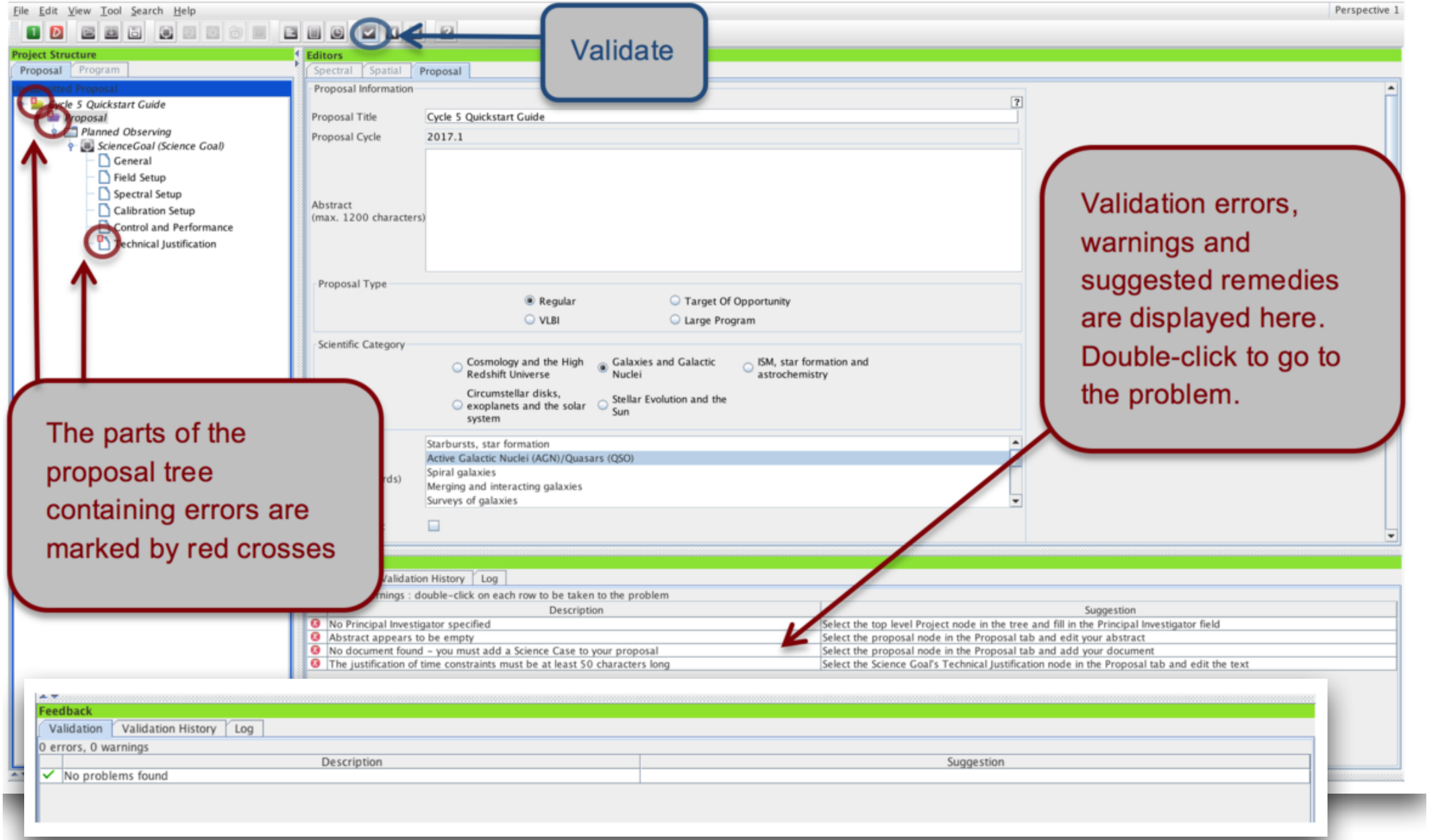
Technical Justification



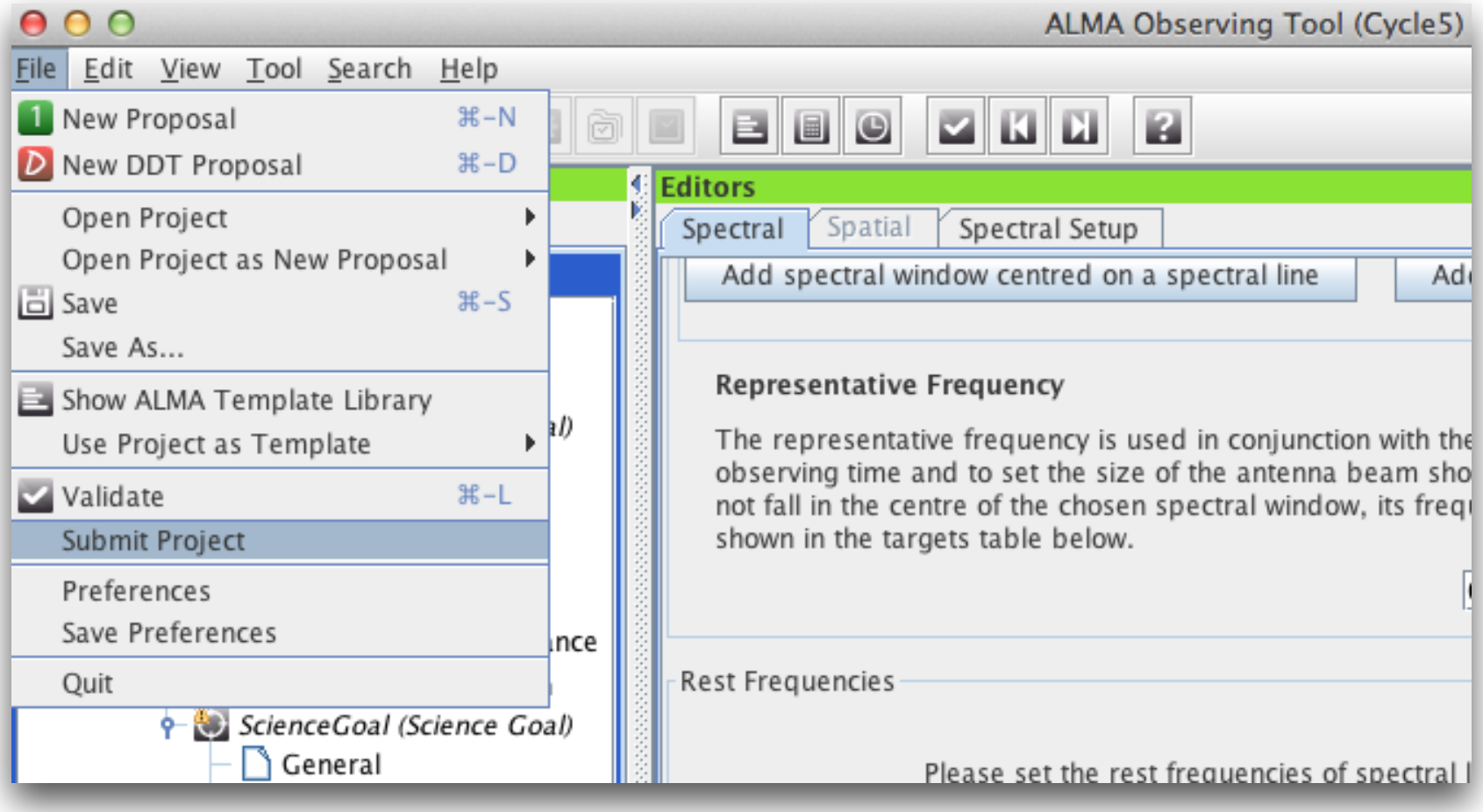
Validation


File Edit View Tool Search Help
Perspective 1
Validate
Project Structure
Proposal Program
Cycle 5 Quickstart Guide
Proposal
Planned Observing
ScienceGoal (Science Goal)
General
Field Setup
Spectral Setup
Calibration Setup
Control and Performance
Technical Justification
Editors
Spectral Spatial Proposal
Proposal Information
Proposal Title
Cycle 5 Quickstart Guide
Proposal Cycle
2017.1
Abstract
(max. 1200 characters)
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
Starbursts, star formation
Active Galactic Nuclei (AGN)/Quasars (QSO)
Spiral galaxies
Merging and interacting galaxies
Surveys of galaxies
Validation History
Log
nings : double-click on each row to be taken to the problem
Description
Suggestion
No Principal Investigator specified
Select the top level Project node in the tree and fill in the Principal Investigator field
Abstract appears to be empty
Select the proposal node in the Proposal tab and edit your abstract
No document found - you must add a Science Case to your proposal
Select the proposal node in the Proposal tab and add your document
The justification of time constraints must be at least 50 characters long
Select the Science Goal's Technical Justification node in the Proposal tab and edit the text
The parts of the proposal tree containing errors are marked by red crosses
Validation errors, warnings and suggested remedies are displayed here. Double-click to go to the problem.

Validation


Validate
The parts of the proposal tree containing errors are marked by red crosses
Validation errors, warnings and suggested remedies are displayed here. Double-click to go to the problem.
Feedback
Validation
Validation History
Log
0 errors, 0 warnings
Description
Suggestion
No problems found

Submit!



- Can submit as many times as you like before the deadline