

# ALMA Science

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## How do I set up a mosaic in the OT?

John Hibbard - 2023-04-14 - ALMA Observing Tool (OT)

The OT has a built in utility to easily set up rectangular, equally spaced mosaics using the "**1 Rectangular Field**" option in the "Field Setup" editor. This is the easiest way of setting up mosaics, since the sensitivity entered is that desired over the combined image, and the OT's time estimate takes into account the overlap between pointings. Also, the 12-m, 7-m and TP Array observations are automatically set up in the most efficient way possible (i.e. the 7-m pointings are spaced further apart to account for the larger beamsizes, the TP observations will scan the entire area covered by the mosaic).

If your scientific needs are not met by this standard mosaic (e.g. a rectangular mosaic would be very inefficient or you need your pointings to be spaced unequally), you can instead define a custom mosaic using the "**Individual Pointing(s)**" option. In this case, you define one or multiple sources that contain a number of offset pointings to be processed together to give one image, all of which must overlap. The entered sensitivity is assumed to be **per pointing** and any overlap should be accounted for by the user.

If the custom mosaic is defined for the 12-m array and the ACA is also required, the OT will calculate the smallest rectangle that encompasses all the pointings and tile this with Nyquist-spaced pointings for use with the 7-m array. The TP array would use a slightly larger version of the rectangle.

Proposal Program > Spectral Spatial **Field Setup**

Unsubmitted Proposal

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

Source Name  Resolve

Choose a Solar System Object?  Name of object Unspecified

System  Sexagesimal display?

Source Coordinates

RA  Parallax

Dec  PM RA

PM Dec

Source Radial Velocity    z  Doppler Type

Target Type  Individual Pointing(s)  1 Rectangular Field

Expected Source Properties ?

Peak Continuum Flux Density per Synthesized Beam

Continuum Linear Polarization

Continuum Circular Polarization

Peak Line Flux Density per Synthesized Beam

Line Width

Line Linear Polarization

Line Circular Polarization

Rectangle ?

Coords Type  Relative  Absolute

Field Centre Coordinates

Offset(Longitude)

Offset(Latitude)

p length

q length

Position Angle

Spacing   Reset to Nyquist

#Pointings 12m Array  Export

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