

ALMA Science

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How do I set up a mosaic in the OT?

John Hibbard - 2020-09-21 - 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 beamsize, 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.