Should I use a mosaic or individual pointings to observe my target(s)?

Maria Diaz Trigo - 2023-11-01 - ALMA Observing Tool (OT)

Individual targets that are larger than 1/3 of the Field of View (FOV) of the 12-m Array will require a Nyquist sampled mosaic to obtain uniform sensitivity across the field due to the sensitivity fall-off towards the edges of the primary beam. This can be set up either as a Rectangular Field mosaic or a "custom mosaic" made up of overlapping individual pointings in the OT (see the Knowledgebase article on setting up mosaics for details). A list of representative sizes of the FOV for each ALMA band is available in document "Observing With ALMA - A Primer", available from the Science Portal under 'Documentation'. The FOV and the inner 1/3 of the FOV where maximum sensitivity is reached can also be visualised in the Spatial Field Editor in the OT: the FOV of a pointing is displayed as a red circle, the inner 1/3 is shown by a green dashed circle.

A set of unresolved (point) sources that are close in the sky, i.e. separated by less than the FOV, may be observed most efficiently using a mosaic (either custom or rectangular). If not, then each part of the sky must be observed using a separate source, each containing a mosaic if necessary. It is not possible to define multiple individual pointings per source unless these overlap.