Target M100 (NGC 4321)

FIND source properties at http://ned.ipac.caltech.edu/

ALMA Science Verification data at Band 3 was taken for M100 with the ALMA 12-m array on 10 August and 10 September, 2011.

The observations consisted of a 47 pointing mosaic centered at RA=12:22:54.6, Dec=+15:48:56.5 and used a spectral setup with four FDM (frequency domain mode) windows with 3840 channels each. **Your dataset has only 2 of those spws**.

The native channel width is 488.281 kHz, and one of the windows is centered at the CO (1-0) line with a rest frequency of 115.271 GHz in ALMA Band 3. There are three 12m datasets, comprising a total of 124.3 minutes on source (2.63 min per pointing). The integration interval for each visibility is 6.05 seconds.

The names of the three datasets are as follows:

- uid___A002_X273b43_X146
- uid___A002_X2a5c2f_X220
- uid___A002_X2a5c2f_X54

The dataset **uid___A002_X273b43_X146** is the one you will use for the calibration.

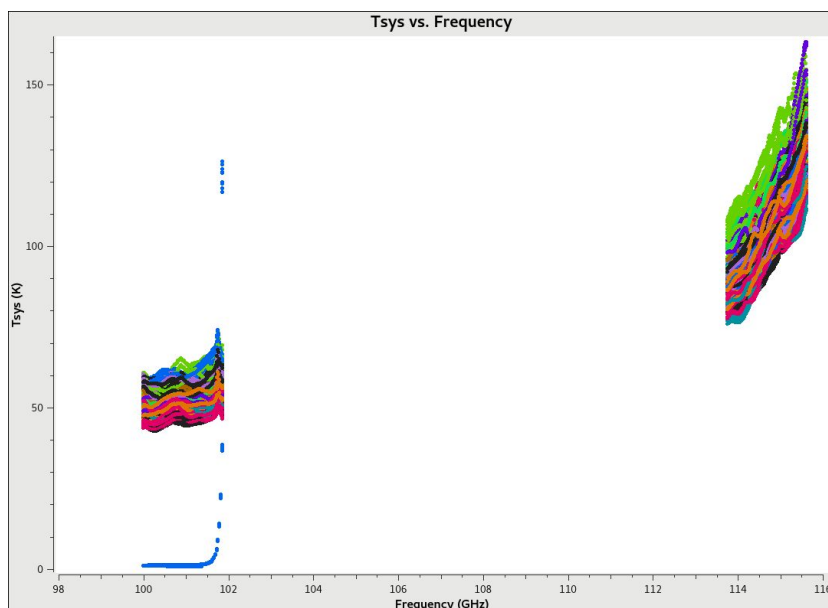**The "a priori" calibration, including wvr and Tsys, has been already performed on the dataset.**

Fig. 1: Tsys applied to the data vs freq.
Each color shows a different antenna.

Please note the value of the Tsys (50-100 K) typical for Band 3.
There is one antenna with anomalous value.
You should recognise it in the visibilities!

After the calibration of the dataset, **uid___A002_X273b43_X146.lab.ms**, you can make images of the target using the combined dataset: **M100_chanbin7.ms**, where the three datasets have been combined, channels have been averaged, and only the spw containing the line of interest has been saved.

Info for tclean:
- The area covered by the mosaic is approximately 400x400 arcsec, choose the appropriate imsize.
- Use as phasecenter the center of the mosaic, given above (check tclean help).

- Make a continuum and a line image of the target.
- Measure the rms of each image
- Make mom0 and mom1 images.