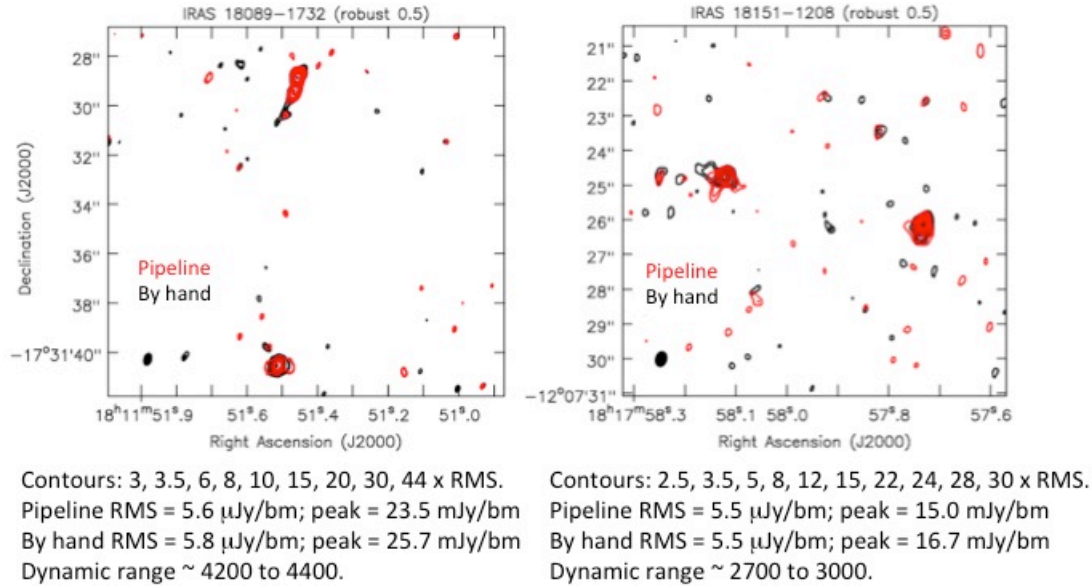


8-bit continuum test at C-band Source = Hot molecular cores

The VLA was used to observe two hot molecular cores for 40 min in C-band, A-configuration in 2012 using the standard NRAO default continuum setup. The data were reduced by-hand in CASA by Viviana Rosero and also run through the VLA automated pipeline. Images were then made in an identical fashion using Robust 0.5 weighting. The resulting images are shown below.



Comparison between images created with data reduced by hand (black contours) and by the VLA automated pipeline (red contours).

For comparison, the theoretical RMS noise is estimated by the exposure calculator to be \sim 5.2 to 5.4 μ Jy/beam (details about how this was estimated for both fields is given at the end of this report).

The bottom line: The pipeline and by-hand reductions arrive at essentially the same RMS & flux levels in the images. Low-level emission contours differ slightly, probably due to the differences in flagging and final weighting of the data (after the CASA task `statwt` is run).

Estimate of the theoretical RMS noise level with the exposure calculator:

- Bandwidth= 2048 MHz from \sim 4.4 GHz to 7.8 GHz (central frequency = \sim 6.15 GHz)
- Type of weighting= Robust
- Time on Source= 40 m (no flagging assumed)

Frequency (GHz)	No. antennas	Theoretical rms noise (μ Jy/bm)
6.15	26	5.15
6.15	25	5.36