

ATCA setup as follows:

DAS profile: 64MHz\_f.pro on both DAS.

CA04 is at 7mm (it has the best 7mm noise diode for the 7mm frequency of 43532 MHz).

CA01,2,3,5 is at 3mm.

CABB IF1 is 7mm, IF2 is 3mm.

The tied array for IF1 is CA04 only, and for IF2 is CA01+CA02 (the 31m baseline). Both tied arrays are linear polarisation.

The reference antenna is CA04, on W112.

IF1 is being recorded onto the local disk ATNF V002B on cavsi1. IF2 is being recorded onto /data2 on the caxcube.

The ATCA CABB data is being recorded as project C2997.

Shortly before the beginning of the experiment, I did a pointing on 3C273 at 7mm. Other pointing scans were performed at (all times show when the main schedule was stopped to the time when it was back on source on main schedule):

- 14:58 - 15:08
- 16:03 - 16:12:30
- 17:02 - 17:11:50
- 18:02 - 18:11:50
- 19:05 - 19:14:30
- 20:05 - 20:14:30

Condition reports:

14 UTC:

The 3mm opacity is varying reasonably rapidly at 14 UTC, with the 1-2 amplitude going up and down by more than 100%. The phase on the 1-2 baseline is varying by maybe 50 degrees or so over 10 minutes, but it is varying around a reasonably constant average value rather than decreasing/increasing. 1-3 and 2-3 are varying much too rapidly to be useful so we leave CA03 out of the tied array.

15:10 UTC:

The seeing has come down to about 250 microns. The recent pointing corrections were quite sizable (10 arcsecs on many antennas), and this may be due to an error on my part, since it looks like I had accidentally used the global pointing solution for the first part of the experiment (I've fixed this error now). Phase at 3mm on 3C273 still looks pretty ratty, so I won't be adding any more antennas to the tied array just yet. Did a pcal at 15:12:37 (after changing the calibration reference antenna to CA02, but this should not affect where the tied array is formed (still CA04)).

16:15 UTC:

Only some small pointing corrections during the last pointing scan. The seeing has deteriorated markedly, now at over 2000 microns since there is another rain band coming through. The tied array

gain has needed to get way lower since the atmospheric temperature is way higher now.

17:15 UTC:

Weather not great, seeing got better about 10 mins ago but is now back up around 1000 microns; radar suggests we still have some rain around.

18:15 UTC:

It looks like the opacity has improved quite a bit; it is more stable at least. The seeing is only around 400 microns, but on 3C273 the phases are still varying by almost 200 degrees in a minute so we're still not going to add CA03 to the tied array.

19:15 UTC:

Getting a bit lighter outside, and it looks like total cloud cover. Seeing is 500 microns.

20:15 UTC:

Full daylight now and the seeing is up over 700 microns. Last pointing was just done - the array will soon go into elevations below 30 degrees.

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