

v255c Setup:

Description	Proper motion and Parallax of Methanol Masers: A search for infalling ga
Antennas	At-Mp-Ho-Cd-Pa
Start	330 22:00:00
Stop	331 09:00:00
PI	A.-M. Brick
Channel 1	IFP#1-L0 6640 - 6656 MHz USB RCP
Channel 2	IFP#1-HI 6656 - 6672 MHz USB RCP
Channel 3	IFP#2-L0 6640 - 6656 MHz USB LCP
Channel 4	IFP#2-HI 6656 - 6672 MHz USB LCP
Skyfreq	6656 MHz
Bandwidth	16 MHz
DAS Mode	vsop.pro (telescope)

The beginning and end of the experiment will use the following setup:

Channel 1	IFP#1-L0 6300 - 6316 MHz USB LCP
Channel 2	IFP#1-HI 6316 - 6332 MHz USB LCP
Channel 3	IFP#2-L0 6640 - 6656 MHz USB LCP
Channel 4	IFP#2-HI 6656 - 6672 MHz USB LCP
Bandwidth	16 MHz
Skyfreq IFP#1	6316.00 MHz
Skyfreq IFP#2	6656.00 MHz

Ftp: <ftp://ftp.atnf.csiro.au/pub/people/vlbi/v255/v255c>

Comments:

Observing comments for each antenna:

Background:

The purpose of these observations is to obtain the first epoch for proper motion/parallax observations of the methanol maser sources NGC6334F and NGC6334I(N). We are using the same observing mode as for v255b (August 08) and will observe both masers and phase calibrators with 2x16 MHz bandpasses, but the correlator output will be high spectral resolution around the masers (They should show a strong peak at a sky frequency of around 6668.7 MHz during these observations) and standard continuum for the phase reference source. The idea is to have a mode which expands the number of suitable phase reference sources available for spectral line sources.

Specifics:

The experiment has 4 distinct sections, **minor setup changes are required between 22:00:00 and 22:22:00 then at 23:37:10 and 08:02:00 UT**

1. 22:00:00 - 22:22:00 UT : Observing 3c273 and switching between the two frequency setups to determine the delay differences between them. See notes below.
2. 22:22:00 - 23:37:10 UT : Use the single polarization (LCP), 4 x 16 MHz bandpass setup. We are looking at ICRF sources over as wide a range of azimuths and elevations as possible for atmospheric delay calibration for the astrometry.
3. 23:37:10 - 08:02:00 UT : Use the dual polarization 2 x 16 MHz bandpass setup. This portion of the experiment is mainly switching every few minutes between the two maser sources NGC6334F and NGC6334I(N) and three phase calibrators. There is an ICRF run between 0258 and 0356 UT, this one is done with the maser setup (to reduce the number of changes overall).
4. 08:02:00 - 09:00:00 UT : Single polarization (LCP), 4 x 16 MHz bandpass setup for another ICRF run.

During the ICRF runs we have sometimes had to exclude certain antennas (particularly Parkes) from observations of some sources in order to get a good spread of azimuths and elevations.

Observing comments for each antenna:

Hobart, Ceduna :

The 4 x 16 MHz bandpass setup will require feeding two separate LOs into IFP#1 and #2 on the DAS/frequency translator and splitting the LCP signal so that is feed into both sides. For Hobart the LOs should be set to 468 MHz (IFP#1) and 808 MHz (IFP#2) for the 4 x 16 MHz setup and 808 MHz for the 2 x 16 MHz setup. For Ceduna, if you set the agilent to 11.1 GHz rather than 11.4 GHz, then you can use the same LOs as at Hobart.

Parkes, ATCA, Mopra :

Cable up with the Huygens cable for the entire experiment. Observe with dual DAS setup using 2 DASes for the 4 x 16 MHz setups and 1 for the dual polarization 2 x 16 MHz setup. Record using the following cdisco channel selections at the appropriate time ranges. Stop the recorder in between! At Parkes you will have to change the frequency manually running for example (in a pavo xterm) > lorun @2008_METH-split.cmd

UT	Channel selection	Parkes Frequency setup
22:22-23:37:10	3,4,7,8	2008Nov_METHc.cmd
23:37:10-08:02:00	1-4	2008Nov_METHb.cmd
08:02:00-09:00	3,4,7,8	2008Nov_METHc.cmd

ATCA will have to cacal at 6.3/6.7 GHz and 6.7/6.7 GHz before the experiment. Note “catie” should be setup for Rcp/Lcp (Lcp is selected in cdisco)

DAS calibration

During the first 20 minutes we will need to calibrate the delay between the two ATNF DAS, and the delay between Hobart/Ceduna in dual pol and single pol mode. The following modes will need to be used to calibrate these.

ATNF DAS offsets:

Everyone records with a dual polarisation/6.7 GHz setup. ATNF records at 512 Mbps, ie Huygens/Channel 1-8 in cdisco with DAS1 and DAS2

Hobart/Ceduna Single pol calibration

Hobart and Ceduna cable up with LCP into both IFP, but remain at 6.7 GHz. Pks/ATCA/Mopra record chans 1-4.

Split freq fringe test

Hobart and Ceduna retune IFP#1 to 6316 MHz. Parkes/Mopra/ATCA run with DAS#1 centered at 6316 and DAS#2 at 6656 MHz and record Chan 3,4,7,8 in cdisco. Parkes will have to lrun. ATCA and Mopra have the frequency change built into the schedule.

Time (UT)	Ho/Cd	At/Pa/Mp	ATNF Channels	Parkes lrun
22:00-22:08	Dual Pol	Dual Pol	1-8	2008Nov_METH.cmd
22:08-22:17	Lcp only 6.7/6.7 GHz	Dual Pol	1-4	2008Nov_METH.cmd
22:17-22:22	Lcp only 6.3/6.7 GHz	Lcp only 6.3/6.7 GHz	1-4	2008Nov_METH-split.cmd

Disks

If the disks from Curtin arrive in time...!!!

ATCA & Mopra record to CURT V011A/B, to share with v269a.

Parkes record to CURT V012B, to share with v269a.

Hobart & Ceduna use any 500GB set.

[At](#) [Mp](#) [Ho](#) [Cd](#) [Pa](#)

Observing Logs

[Parkes onsource flagging](#)

[ATCA onsource flagging](#)

[Mopra onsource flagging](#)

Mopra Tsys (plot)

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