

## v255e Setup v255e.5cm-icrf:

|                      |  |
|----------------------|--|
| <b>Description</b>   | Proper motion and Parallax of Methanol Masers: A search for infalling ga |
| <b>Antennas</b>      | At-Mp-Ho-Cd-Pa   |
| <b>Start</b>         | 56 15:30:00  |
| <b>Stop</b>          | 57 02:30:00  |
| <b>PI</b>            | A.-M. Brick  |
| <b>Channel 1</b>     | IFP#1-L0 6300 - 6316 MHz USB LCP   |
| <b>Channel 2</b>     | IFP#1-HI 6316 - 6332 MHz USB LCP   |
| <b>Channel 3</b>     | IFP#2-L0 6642 - 6658 MHz USB LCP   |
| <b>Channel 4</b>     | IFP#2-HI 6658 - 6674 MHz USB LCP   |
| <b>Skyfreq IFP#1</b> | 6316.00 MHz  |
| <b>Skyfreq IFP#2</b> | 6658.00 MHz  |
| <b>Bandwidth</b>     | 16 MHz   |
| <b>DAS Mode</b>      | vsop.pro ( <a href="#">telescope</a> )                                   |

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Ftp: <ftp://ftp.atnf.csiro.au/pub/people/vlbi/v255/v255e>

## Comments:

## Observing comments for each antenna:

## Background:

The method and frequencies for this experiment are the same as for v255d. The purpose of these observations is to obtain the third epoch for proper motion/parallax observations of the methanol maser sources G9.62+0.20 and G8.68-0.37 (previous epochs were v255a and b in Mar08 and Aug08 respectively). We are using the same observing mode as for previous v255 experiments (although the

maser band frequency has shifted upwards by 2 MHz compared to the Nov 2008 session). We will observe both masers and phase calibrators with dual polarization 2x16 MHz bandpasses, but the correlator output will be high spectral resolution around the masers (G9.62+0.20 should show a strong peak at a sky frequency of around 6669.4 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 15:30:00 and 15:55:00 then at 16:52:50 and 01:46:40 UT**

1. 15:30:00 - 15:50:00 UT : Observing 3c273 with the v255e.5cm setup (dual polarization 4 x 16 MHz bandpass setup).
2. 15:50:00 - 16:52:50 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. 16:52:50 - 01:46:40 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 G9.62+0.20 and G8.68-0.37 and three phase calibrators. There is an ICRF run between 2028 and 2134 UT, this one is done with the maser setup (to reduce the number of changes overall).
4. 01:46:40 - 02:30:00 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 810 MHz (IFP#2) for the 4 x 16 MHz setup and 810 MHz for the 2 x 16 MHz setup. For Ceduna, if you set the agile to 11.1 GHz rather than 11.4 GHz, then you can use the same LOs as at Hobart.

Summary of changes

| UT          | IFP#1/IFP#2           |
|-------------|-----------------------|
| 15:30-15:40 | Rcp/Lcp 6658/6658 MHz |
| 15:40-15:50 | Lcp/Lcp 6658/6658 MHz |
| 15:50-16:53 | Lcp/Lcp 6316/6658 MHz |
| 16:53-01:47 | Rcp/Lcp 6658/6658 MHz |
| 01:47-02:30 | Lcp/Lcp 6316/6658 MHz |

## Parkes, ATCA, Mopra :

ATCA and Mopra will change frequencies automatically. Parkes need to run lo\_run at the mode changes, as noted in the table below. cdisco channel selection need to be changed also.

Cable up with the Huygens cable for the entire experiment. Observe with dual DAS setup using 2 DASes for the vsop profile. 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 |
|-------------|-------------------|------------------------|
| 15:30-15:40 | 1-8               | 2009Feb_METHc.cmd      |
| 15:40-15:50 | 1-4               | 2009Feb_METHc.cmd      |
| 15:50-16:53 | 3,4,7,8           | 2009Feb_METHb.cmd      |
| 16:53-01:47 | 1-4               | 2009Feb_METHc.cmd      |
| 01:47-02:30 | 3,4,7,8           | 2009Feb_METHb.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)

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

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## Observing Logs

- [Parkes onsource flagging](#)
- [Parkes Tsys](#)
- [ATCA onsource flagging](#)
- [Mopra onsource flagging](#)
- [Mopra Tsys \(plot\)](#)

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