

## v490c

<b>Description</b>	Measuring the proper motions of the Large and Small Magellanic Clouds
<b>Antennas</b>	At-Cd-Ho-Mp-Pa-Hh
<b>Start</b>	263 10:00:00
<b>Stop</b>	263 23:59:44
<b>PI</b>	S.P. Ellingsen

Setup v490c.1cm:

<b>Station Modes</b>	At Cd Ho Mp Pa
<b>Channel 1</b>	IFP#1-L0 22211 - 22227 MHz USB RCP
<b>Channel 2</b>	IFP#1-HI 22227 - 22243 MHz USB RCP
<b>Channel 3</b>	IFP#2-L0 22211 - 22227 MHz USB LCP
<b>Channel 4</b>	IFP#2-HI 22227 - 22243 MHz USB LCP
<b>DAS 1 Skyfreq</b>	22227 MHz
<b>Bandwidth</b>	16 MHz
<b>DAS Mode</b>	vsop.pro ( <a href="#">telescope</a> )
<b>Station Modes</b>	Hh
<b>Channel 1</b>	22211 - 22227 MHz USB RCP
<b>Channel 2</b>	22211 - 22227 MHz USB LCP
<b>Channel 3</b>	22227 - 22243 MHz USB RCP
<b>Channel 4</b>	22227 - 22243 MHz USB LCP
<b>Bandwidth</b>	16 MHz
<b>DAS Mode</b>	Mark5

Setup v490c.1cm-icrf:

<b>Station Modes</b>	At Cd Ho Mp Pa
<b>Channel 1</b>	IFP#1-L0 22000 - 22016 MHz USB RCP
<b>Channel 2</b>	IFP#1-HI 22016 - 22032 MHz USB RCP
<b>Channel 3</b>	IFP#2-L0 22500 - 22516 MHz USB LCP
<b>Channel 4</b>	IFP#2-HI 22516 - 22532 MHz USB LCP
<b>DAS 1 Skyfreq</b>	22016 & 22516 MHz
<b>Bandwidth</b>	16 MHz
<b>DAS Mode</b>	vsop.pro ( <a href="#">telescope</a> )
<b>Station Modes</b>	Hh
<b>Channel 1</b>	22000 - 22016 MHz USB RCP
<b>Channel 2</b>	22016 - 22032 MHz USB RCP
<b>Channel 3</b>	22500 - 22516 MHz USB LCP
<b>Channel 4</b>	22516 - 22532 MHz USB LCP
<b>Bandwidth</b>	16 MHz
<b>DAS Mode</b>	Mark5

### Mode changes:

263 10:00:00 v490c.1cm

263 10:08:00 v490c.1cm-icrf

263 10:58:30 v490c.1cm  
263 14:30:02 v490c.1cm-icrf  
263 15:12:48 v490c.1cm  
263 18:45:43 v490c.1cm-icrf  
263 19:30:25 v490c.1cm  
263 23:00:25 v490c.1cm-icrf  
263 23:06:35 v490c.1cm  
263 23:23:06 v490c.1cm-icrf

Ftp: <ftp://ftp.atnf.csiro.au/pub/people/vlbi/v490/v490c>

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## Comments:

Due to popular demand V490 has copied the basic strategy used for the V255 series of methanol maser astrometry experiments. There are two different frequency setups, the "ICRF" observations to calibrate the tropospheric delay has 2 IFs with different polarizations. The second setup (the one used for the majority of the time) has a single IF with dual polarisation. The times for the setup (mode) changes are given above.

The purpose of these observations is to obtain the third epoch for proper motion observations of water masers in the SMC and LMC.

## Observing comments for each antenna:

### Hobart, Ceduna :

The 4 x 16 MHz bandpass setup requires feeding two separate LOs into IFP#1 and #2 on the DAS/frequency translator. For both Hobart and Ceduna the LOs should be set to 706 MHz (IFP#1) and 206 MHz (IFP#2) for the 4 x 16 MHz setup and 495 MHz for the 2 x 16 MHz setup. For Hobart use 16.37 GHz as the Agilent frequency and for Ceduna use 17.47 GHz. For the 4x16 MHz setup 880.2 and 900.2 MHz should give coherence in IF#1 and IF#2 respectively, while for the 2x16 MHz use 888.64 MHz to check coherence (these tones apply for both Hobart and Ceduna).

The level into IF#2 will change significantly between the two setups. Set the level into the DAS so that it is within range for both setups. Setup the system temperature measurement so that it works for both IFs for the v490c.1cm setup - it doesn't matter if the system temperature measurement doesn't work for the second IF during the ICRF observations as these are only to calibrate the delay. Please don't change the attenuation into the DAS when the setup changes as that may change the delay.

### Parkes, ATCA, Mopra :

For the ATCA please phase-up antennas CA01 through CA05 for this experiment. The sources 0100-760, 0601-706 and 0530-727 should all be suitable for phasing the array (in addition to the fringe finder sources) and have been marked with the AUTOPHASE\_DETERMINE intent in the vex file.

Setup as for a 2p-4IF experiment (dual DAS with Huygens cable for entire experiment) with DAS1 tuned to the lower frequency and DAS2 to the upper frequency. Record using the following channel ranges.

v490c.1cm	Channels 5-8
v490c.1cm-icrf	Channels 1,2,7,8

cdisko should make these changes automatically but it should be monitored carefully.

The information below for Parkes has been copied from the v490b experiment and may need to be updated.

Parkes LO can be controlled using the "losched" command. It assumes the initial setup has been made using a normal lo\_setup file. Run it as pksobs on joffrey:

```
> losched v490b.losetup
```

v490b.1cm frequencies at Parkes can be setup using the 2013Nov\_13MMd.cmd and v490b.1cm-icrf using 2013Nov\_13MMe.cmd

## Observing comments for each antenna:

<a href="#">At</a>	<a href="#">Cd</a>	<a href="#">Ho</a>	<a href="#">Mp</a>	<a href="#">Pa</a>	<a href="#">Hh</a>
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## Observing Logs

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

## Weather

[ATCA Weather](#)  
[Mopra Weather](#)  
[Parkes Weather](#)

## Monica log information - EXPERIMENTAL:

[Mopra Tsys](#)

[Parkes Tsys](#)  
[ATCA Tsys](#)

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