

**v547b**

<b>Description</b>	3D Kinematics in G339.884-1.259 at 10 to 1000 AU Scales
<b>Antennas</b>	At-Cd-Ho-Mp-Pa
<b>Start</b>	67 13:00:00
<b>Stop</b>	68 02:00:00
<b>PI</b>	V. Krishnan

Setup v547b.1cm:

<b>Station Modes</b>	At Cd Ho Mp Pa
<b>Channel 1</b>	IFP#1-L0 22230 - 22246 MHz USB RCP
<b>Channel 2</b>	IFP#1-HI 22246 - 22262 MHz USB RCP
<b>Channel 3</b>	IFP#2-L0 22230 - 22246 MHz USB LCP
<b>Channel 4</b>	IFP#2-HI 22246 - 22262 MHz USB LCP
<b>DAS 1 Skyfreq</b>	22246 MHz
<b>Bandwidth</b>	16 MHz
<b>DAS Mode</b>	vsop.pro ( <a href="#">telescope</a> )

Setup v547b.1cm-icrf:

<b>Station Modes</b>	At Cd Ho Mp Pa
<b>Channel 1</b>	IFP#1-L0 21888 - 21904 MHz USB RCP
<b>Channel 2</b>	IFP#1-HI 21904 - 21920 MHz USB RCP
<b>Channel 3</b>	IFP#2-L0 22230 - 22246 MHz USB LCP
<b>Channel 4</b>	IFP#2-HI 22246 - 22262 MHz USB LCP
<b>DAS 1 Skyfreq</b>	21904 & 22246 MHz
<b>Bandwidth</b>	16 MHz
<b>DAS Mode</b>	vsop.pro ( <a href="#">telescope</a> )

**Mode changes:**

67 13:00:00 v547b.1cm-icrf  
67 13:32:00 v547b.1cm  
67 14:00:00 v547b.1cm-icrf  
67 14:45:00 v547b.1cm  
67 16:31:30 v547b.1cm-icrf  
67 17:15:00 v547b.1cm  
67 19:15:00 v547b.1cm-icrf  
67 20:00:00 v547b.1cm  
67 22:00:00 v547b.1cm-icrf  
67 22:45:00 v547b.1cm  
68 01:30:00 v547b.1cm-icrf

Ftp: <ftp://ftp.atnf.csiro.au/pub/people/vlbi/v547/v547b>

**Comments:**

The aim of our project is to conduct astrometric observations of the 22 GHz water masers in G339.884-1.259 to sub-milliarcsecond accuracy. We will be phase referencing this source with respect to J1706-4600 to determine the absolute proper motions of the maser features to probe the 3D gas dynamics at scales of 10 to 1000 AU to understand the outflow structure of this source. The phase referencing observations will also be interspersed with geodetic bloc ICRF observations for tropospheric calibration as well as PKS1934-638 for D-term leakage for polarisation measurements.

Maser emission for G339.884-1.259 is at approximately 22,239.789 MHz.

During the ICRF runs we have sometimes had to exclude certain antennas (typically 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 requires feeding two separate LOs into IFP#1 and #2 on the DAS/frequency translator.

The level into IF#1 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 v547b.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.

bbc01d is for single frequency (467 MHz)

bbc02d is for dual frequency (467, 818 MHz)

**ATCA:** Please phase-up antennas CA01 through CA05 for this experiment. During phase-referencing have scheduled regular 1m30s scans (frequency of ~15 mins) of 1646-50 to re-phase the array.

**Parkes:** Note that the DAS profile had to be changed manually during the previous session. (<http://www.atnf.csiro.au/vlbi/dokuwiki/doku.php/lbaops/lbaoct2016/v547a>)

Click "File > Load"

Select profile you want:

av16\_2\_f.pro (split freq)

av16\_2\_n.pro (single freq)

Click "OK"

The profile names are now "orange", that means profile loaded but not configured

Click "Config Hdw" to do that.

You can "load" the profile whenever you want, i.e. well in advance of the change. Click Config at the mode change time.

Don't change DAS#2

Next adjust the attenuation (if the DAS levels are significantly off centre):

Typically only adjust the C12 and C40 attenuators.

If the DAS are 1 2 3 4 (1 2 for DAS#1, 3 4 for DAS#2) then the order from left to right on C40 is 2 1 4 3.

## Observing comments for each antenna:

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

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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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