



# Observing Application

Date : Nov, 17 2008  
 Proposal ID : VLA/08C-243  
 Legacy ID : AM982  
 PI : Karl Menten  
 Type : Rapid Response -  
 Exploratory Time  
 Category : Galactic  
 Total Time : 10.0

## The Nature of Class II Methanol Maser Sources

### Abstract:

We are currently publishing the results of a large VLBA project that resulted in the measurement of trigonometric parallaxes for ten star-forming regions using 12.2 GHz methanol masers as targets. The two main objectives of the present proposal are, first, to determine for the sources of our VLBA sample the extent of the hot, dense, molecular regions in the immediate vicinity of their embedded exciting protostars and estimate their luminosities and, second, to establish the existence and/or characterize the hypercompact HII region that exactly mark the positions of the protostars.

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### Related proposals:

### Joint:

Not a Joint Proposal

### Observing type(s):

Continuum, Spectroscopy

### VLA Resources

Name	Conf.	Frontend & Backend	Setup
Methanol	A	C Band 6 cm 4200-7700 MHz VLA Correlator - Spectral Line	Rest frequencies: 6668.518 MHz Bandwidth: 3.125 MHz Spectral resolution: 12.207 kHz IF Mode: 1 No. of Channels: 256

Name	Conf.	Frontend & Backend	Setup
X-Band	A	X Band 3.6 cm 8080 - 8750 MHz VLA Correlator - Single Channel Continuum	Rest frequencies: 8435.1,8485.1 MHz Bandwidth: 50 MHz
K-Band	A	K Band 1.3 cm 18000 - 26500 MHz VLA Correlator - Single Channel Continuum	Rest frequencies: 22485.1,22435.1 MHz Bandwidth: 50 MHz

### Sources:

Name	RA / RA Range	Dec / Dec Range	Epoch	Velocity / z	Group
S252	06:08:53.0 00:00:00.0	+21:38:29 00:00:00	J2000	Velocity : 0.00	Methanol Masers I
G232.2+1.0	07:32:10.0 00:00:00.0	-16:58:13 00:00:00	J2000	Velocity : 0.00	Methanol Masers I
G23.44-0.18	18:34:39.0 00:00:00.0	-8:31:25 00:00:00	J2000	Velocity : 0.00	Methanol Masers II
G23.01-041	18:34:40.0 00:00:00.0	-9:00:38 00:00:00	J2000	Velocity : 0.00	Methanol Masers II
G35.20+0.74	18:58:13.0 00:00:00.0	+01:40:36 00:00:00	J2000	Velocity : 0.00	Methanol Masers II
G35.20-1.74	19:01:46.0 00:00:00.0	+01:13:33 00:00:00	J2000	Velocity : 0.00	Methanol Masers II
W51 IRS2	19:23:39.8 00:00:00.0	+14:31:05 00:00:00	J2000	Velocity : 0.00	Methanol Masers II
G59.7+0.1	19:43:11.0 00:00:00.0	+23:44:03 00:00:00	J2000	Velocity : 0.00	Methanol Masers II
Cep A	22:56:18.0 00:00:00.0	+62:01:49 00:00:00	J2000	Velocity : 0.00	Methanol Masers II
NGC7538	23:13:45.0 00:00:00.0	+61:28:11 00:00:00	J2000	Velocity : 0.00	Methanol Masers II

### Sessions:

Name	Session Time (hours)	Repeat	Separation	LST minimum	LST maximum	Elevation Minimum
1	2.00	1	0 day	00:05:00	09:00:00	20
2	8.00	1	0 day	16:00:00	24:00:00	20

### Session Constraints:

Name	Constraints	Comments

### Session Source/Resource Pairs:

Session Name	Source	Resource	Time	Figure of Merit	Subarray
1	S252 G232.2+1.0	X-Band	0.5 hour	0.1 mJy/bm	

Session Name	Source	Resource	Time	Figure of Merit	Subarray
1	S252 G232.2+1.0	K-Band	0.5 hour	0.2 mJy/bm	
1	S252 G232.2+1.0	Methanol	1.0 hour	1 mJy/bm	
2	G23.44-0.18 G23.01-041 G35.20+0.74 G35.20-1.74 W51 IRS2 G59.7+0.1 Cep A NGC7538	X-Band	2.0 hour	0.1 mJy/bm	
2	G23.44-0.18 G23.01-041 G35.20+0.74 G35.20-1.74 W51 IRS2 G59.7+0.1 Cep A NGC7538	Methanol	4.0 hour	1 mJy/bm	
2	G23.44-0.18 G23.01-041 G35.20+0.74 G35.20-1.74 W51 IRS2 G59.7+0.1 Cep A NGC7538	K-Band	2.0 hour	0.2 mJy/bm	

Present for observation: no

Staff support: None

Plan of Dissertation: no

