



Observing Application

Date: Apr 9, 2007
 Proposal ID: VLA/07B-252
Legacy ID: AK664
 PI: Stan Kurtz
 Type: Rapid Response
 Exploratory Time
 Category: Galactic
 Total time: 4.0000005 hour

Class II Methanol Masers in Northern Sources

Abstract:

For the first time since methanol masers were discovered over 30 years ago, the powerful type II maser line at 6.7 GHz can be studied with a large (N greater than 10) northern radio interferometer. The sensitivity and imaging power of the EVLA promise to usher in a new era in methanol maser studies. As an initial project, we propose to observe a small sample of well-known objects, all of which have single-dish detections of the 6.7 GHz line reported in the literature. These sources also show class I 44 GHz methanol maser emission - in contrast to the widely accepted anti-correlation between class I and class II masers. Although in many cases the anti-correlation may hold, in general it has not been tested, because the existing 6.7 GHz observations are of relatively low angular resolution. We propose to test the anti-correlation by comparing for the first time class I and class II maser positions determined via VLA/EVLA observations.

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Joint:

Not a Joint Proposal

Observing type(s):

Spectroscopy, *

Resources:

Resource name	Tele. Conf.	Frontend & Backend	Set up
maser	VLA A	C Band 6 cm 4200 - 7700 MHz VLA Correlator - Spectral Line	IF mode: 1 Bandwidth: 0.78125 MHz Number of channels: 256 Spectral resolution: 3.052 kHz Rest frequencies: 6668 MHz

Sources:

Source name	RA / RA Range	DEC / DEC Range	System	Velocity/z	Group name
G31.41	18:47:34.4 00:00:00.0	-01:12:44 00:00:00	J2000	95 km/s	
G34.26	18:53:18.0 00:00:00.0	01:15:00 00:00:00	J2000	60 km/s	
G45.07	19:14:25.6 00:00:00.0	11:09:26 00:00:00	J2000	60 km/s	
G45.12	19:13:27.6 00:00:00.0	10:53:37 00:00:00	J2000	60 km/s	
G45.47	19:14:26.0 00:00:00.0	11:09:26 00:00:00	J2000	60 km/s	
W51N	19:23:40.0 00:00:00.0	14:31:10 00:00:00	J2000	60 km/s	
W51E	19:23:44.0 00:00:00.0	14:30:30 00:00:00	J2000	60 km/s	
I20126	20:14:26.0 00:00:00.0	41:13:33 00:00:00	J2000	-4 km/s	
ON1	20:10:09.0 00:00:00.0	31:31:40 00:00:00	J2000	11 km/s	
ON2	20:21:44.0 00:00:00.0	37:26:40 00:00:00	J2000	-2 km/s	

Sessions:

Session Name	Session Time	Repeat	Separation	LST Minimum	LST Maximum	Elevation Minimum
session	2.0000002 hours	2	0 day	16:00:00	23:00:00	20

Session Constraints:

Session Name	Constraint	Comments
session		

Session Source/Resource Pairs:

Session Name	Source	Resource	Time	Figure of Merit
session	G31.41/	maser	0.2 hour	60mJy/bm
session	G34.26/	maser	0.2 hour	60mJy/bm
session	G45.07/	maser	0.2 hour	60mJy/bm
session	G45.12/	maser	0.2 hour	60mJy/bm
session	G45.47/	maser	0.2 hour	60mJy/bm
session	W51N/	maser	0.2 hour	60mJy/bm
session	W51E/	maser	0.2 hour	60mJy/bm
session	I20126/	maser	0.2 hour	60mJy/bm
session	ON1/	maser	0.2 hour	60mJy/bm
session	ON2/	maser	0.2 hour	60mJy/bm

Total Time per Configuration:

Configuration	Total Time
A	4.0000005

Present for observation: no Staff support: Consultation