



Observing Application

Date : Jul, 27 2012
 Proposal ID : VLA/12A-493
 Legacy ID : AM1178
 PI : Elisabeth Mills
 Type : Director's Discretionary
 Time - Exploratory Time
 Category : Interstellar Medium
 Total Time : 1.5

Masers Tracing Cloud Evolution in the Galactic Center?

Abstract:

We propose to make a short exploratory observation to follow up on our exciting detection of many dozens of 36 GHz methanol masers in a Galactic center cloud M0.25+0.1. We propose to make a matched array observation (C band in B array) in order to compare to our K and Ka band DnC observations which we are currently analyzing (and in which we detect the 36 GHz masers). The goals of this short observation are three fold: (1) to study the radio continuum image at C band for this relatively undiscovered region of the Galactic center (2) to search for 6.7 GHz methanol 6.0 GHz OH masers that may help us understand the current distribution of 36 GHz methanol masers, and (3) to observe several species of molecular gas that will complement what we have observed in our K and Ka band study. Ultimately, this exploratory observation will help us plan future follow up observations of the surprisingly active molecular clouds at the Galactic center.

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Related proposals:

VLA/11B-210

Joint:

Not a Joint Proposal

Observing type(s):

Continuum, Spectroscopy, Single Pointing(s)

VLA Resources

Name	Conf.	Frontend & Backend	Setup
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Name	Conf.	Frontend & Backend	Setup
C-Band	B	C Band 6 cm 4000-8000 MHz WIDAR RSRO	<p>Comments: Goals:</p> <p>***1.5 GHz continuum coverage for sensitive continuum map ***Two maser lines, OH and CH₃OH, at ~ km/s resolution ***Five lines tracing dense gas properties at ~3 km/s resolution</p> <p>Baseband 1: ***6x continuum spectral windows, 128 MHz, 128 channels ***1x spectral window (H₂ 13CO line) , 512 channels, 32 MHz ***1x spectral window (H₂CO, CH lines) , 1024 channels, 64 MHz ***1x spectral window (HC₅N line) , 512 channels, 32 MHz</p> <p>Baseband 2: ***6x continuum spectral windows, 128 MHz, 128 channels ***1x spectral window (CH₃OH maser line) , 512 channels, 8 MHz ***1x spectral window (OH maser line) , 2048 channels, 64 MHz</p>

Testing Resource Images

Sources:

Name	Position		Velocity		Group
Lima	Coordinate System	Equatorial	Convention	Radio	M0.25+0.01
	Equinox	J2000			
	Right Ascension	17:46:10.0	Ref. Frame	LSRK	
		00:00:20.0			
Declination	-28:43:30.0	Velocity	35.00		
	00:03:00.0				

Sessions:

Name	Session Time (hours)	Repeat	Separation	LST minimum	LST maximum	Elevation Minimum
C-band pointing	1.50	1	0 day	15:30:00	20:30:00	14

Session Constraints:

Name	Constraints	Comments
C-band pointing		RMS noise is for continuum sensitivity

Session Source/Resource Pairs:

Session Name	Source	Resource	Time	Figure of Merit	Subarray
C-band pointing	Lima	C-Band	1.5 hour	0.005 mJy/bm	

Present for observation: yes

Staff support: None

Plan of Dissertation: no