



Observing Application

Date: Sep 13, 2006
 Proposal ID: VLA/07C-100
Legacy ID: AC853
 PI: Buck Creel
 Type: Rapid Response
 Exploratory Time
 Category: Stellar
 Total time: 11.0 hour

OH and H2O maser emission survey of young planetary nebulae

Abstract:

OH and water masers have been identified in a number of proto-planetary nebulae (PPNe) and two young planetary nebulae (YPNe). This maser emission can be used to find the trigonometric parallax of these otherwise radio-dim, poorly understood targets, as well as trace the kinematics in different parts of the circumstellar gas. This proposal seeks to survey a number of YPNe and PPNe for OH and water maser emission; sources detected will be added to our source list for follow-up VLBA parallax and kinematic observations.

Authors:

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Joint:

Not a Joint Proposal

Observing type(s):

Spectroscopy, *

Resources:

Resource name	Tele. Conf.	Frontend & Backend	Set up
H2O maser	VLA Any	K Band 1.3 cm 21200 - 25200 MHz VLA Correlator - Spectral Line	IF mode: 1 Bandwidth: 6.25 MHz Number of channels: 128 Spectral resolution: 48.828 kHz Rest frequencies: 22235.08 MHz
OH maser	VLA Any	L Band 20 cm 1240 - 1700 MHz VLA Correlator - Spectral Line	IF mode: 2 Bandwidth: 1.5625 MHz Number of channels: 256 Spectral resolution: 6.104 kHz Rest frequencies: 1665.401, 1667.358 MHz

Sources:

Source name	RA / RA Range	DEC / DEC Range	System	Velocity/z	Group name
Generic Source	03:00:00.0 04:00:00.0	+25:00:00 40:00:00	J2000	0 km/s	

Sessions:

Session Name	Session Time	Repeat	Separation	LST Minimum	LST Maximum	Elevation Minimum
ypnohh2o	11.0 hours	1	0 day	23:00:00	07:00:00	0

Session Constraints:

Session Name	Constraint	Comments
ypnohh2o		Exploratory proposal for dynamic time. Total of 11 hours can easily be scheduled in 1+ hr blocks. Thirty-five sources observable in LST range 23 - 7 hrs. Criteria are young planetary nebulae or expected proto-planetary nebulae, with central LSR velocities known from optical or other molecular observations.

Session Source/Resource Pairs:

Session Name	Source	Resource	Time	Figure of Merit
ypnohh2o	Generic Source/	H2O maser	3.5 hour	10.0mJy/bm
ypnohh2o	Generic Source/	OH maser	7.5 hour	10.0mJy/bm

Total Time per Configuration:

Configuration	Total Time
Any	11.0

Present for observation: no Staff support: Consultation