



VLA OBSERVING APPLICATION

A
rcvd:

DEADLINES: 1st of Feb., June., Oct. for next configuration following review
INSTRUCTIONS: Each numbered item must have an entry or N/A
E-MAIL TO: propsoc@nrao.edu (different for some Rapid Response Science)
OR MAIL TO: Director NRAO, 520 Edgemont Rd., Charlottesville, VA 22903-2475

- (1) Date Prepared: Aug. 10, 2004
(2) Title of Proposal: Exploratory H2O Maser Observations Toward W33A

Table with 6 columns: (3) AUTHORS, INSTITUTION, E-mail, G/U, Students Only (For Thesis?, Ph.D. Year). Rows include Crystal Brogan, Claire Chandler, and Yancy Shirley.

(4) Related VLA previous proposal number(s):

(5) Contact author for scheduling: Crystal Brogan, address: Institute for Astronomy, 640 North A'ohoku Place, Hilo, HI 96781
(6) Telephone: 808-932-2319, E-mail: cbrogan@ifa.hawaii.edu, Fax: 808-933-0737

(7) Scientific Category: solar system, galactic, extragalactic, other; Rapid Response Science: Known Transient, Exploratory, Target of Opportunity

Table with 6 columns for configurations. (8) Configurations: A; (9) Wavelength(s): 1.3cm; (10) Time requested: 2 hr

(11) Type of observation: continuum, spectroscopy, multichannel continuum, polarimetry, solar, pulsar, high-time resolution, Pie Town link, other

(12) Suitable for dynamic scheduling? Suitable, Unsuitable

(13) ABSTRACT (do not write outside this space)

We have recently (July 21, 04) obtained high resolution 342 GHz SMA spectral line and continuum data for the high mass protostellar object W33A. From these data combined with existing near infrared data we have been able to trace the location of a possible disk and small scale jet/outflow. The relationship between CH3OH, OH, and H2O masers within such regions is currently a matter of vigorous study. In particular we would like to determine whether the H2O masers trace the disk, jet, or outflow components toward W33A. We have analyzed archival C configuration 1.3 cm data and find evidence that the masers are associated with all three components, but these data are of poor quality and have insufficient spatial resolution to constrain the morphology of the individual maser spots. Additionally the 40 km s^-1 bandwidth of these data may not trace all of the maser features. We request 2 hours of exploratory A-configuration time to map out the H2O masers toward W33A with high resolution and wider velocity coverage.

(14) Observer present for observations? Yes No Data analysis at? Home AOC or CV (2 weeks notice)

(15) Help required: None Consultation Friend (extensive help)

(16) Spectroscopy only	line 1	line 2	line 3	line 4
Transition (HI, OH, etc.)	H ₂ O			
Rest Frequency (MHz)	22235			
Velocity (km/s)	37			
Observing frequency (MHz)				
Correlator mode	4			
IF bandwidth(s) (MHz)	3.125			
Hanning smoothing (y/n)	y			
Number of channels per IF	64			
Frequency Resolution (kHz/channel)	48.828			
Rms noise (mJy/bm, nat. weight., 1 hr)	2.5			
Rms noise (K, nat. weight., 1 hr)				

(17) Number of sources:

(If more than 10 please attach list. If more than 30 give only selection criteria and LST range(s).)

(18) NAME	Coordinates		Conf.	λ (cm)	Corr. mode	Band- width per IF (MHz)	Total Flux (Jy)*	LAS	Required rms (mJy/bm)	Required dynamic range	Time request (hr)
	1950 <input type="radio"/> RA hh mm	2000 <input checked="" type="radio"/> Dec. \pm xx.x ^o									
W33A	18 14,	-17.9	A	1.3	2IF	3.125	3 Jy	0.1''	10	400	2

*For spectral line, this should be the total flux at the peak of the line

Notes to the table (if any):

(19) Restrictions to elevation (other than hardware limits) or HA range (give reason):

(20) Preferred range of dates for scheduling (give reason):

Toward the end of the move from D to A configuration would be perfect.

(21) Dates which are not acceptable:

Not during beginning of move from D to A. We need good imaging capabilities and all the resolution we can get.

(22) Special hardware, software, or operating requirements:

(23) Please attach a self-contained Scientific Justification not in excess of 1000 words. (Preprints or reprints will be ignored.)

Please include the full addresses (postal and e-mail) for first-time users or for those that have moved (if not contact author).

When your proposal is scheduled, the contents of the cover sheets become public information (Any supporting pages are for refereeing only).