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: March 14, 2005

(2) Title of Proposal: Reappearance of the water maser in L1448C

(3) AUTHORS (Add * for new location)	INSTITUTION	E-mail	G/U	Students Only For Thesis?	Ph.D. Year
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(4) Related VLA previous proposal number(s):

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(7) Scientific Category: ○ solar system ⊗ galactic ○ extragalactic ○ other:

Rapid Response Science: ○ Known Transient ○ Exploratory ⊗ Target of Opportunity
Joint Proposal: ○ VLA/VLBA ○ VLA/GBT ○ VLA/VLBA/GBT

(8) Configurations (one per column) (A+Pt, A, B, C, D, BnA, CnB, DnC, Any)	B				
(9) Wavelength(s) (400, 90, 20, 6, 3.5, 2, 1.3, 0.7 cm)	1.3 cm				
(10) Time requested (hours)	1				

(11) Type of observation: ○ continuum ⊗ spectroscopy ○ multichannel continuum ○ polarimetry ○ solar
(check all that apply) ○ pulsar ○ high-time resolution ○ Pie Town link ○ other:

(12) Suitable for dynamic scheduling? ⊗ Suitable ○ Unsuitable

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

The water maser in L1448C is an extreme example of variability of masers in low-mass young stellar objects. Components as strong as 120 Jy were reported in 1993, but only non-detections have been reported since 1994. However, on 2005 March 13, we have just detected water maser emission in this source, using NASA's 70m antenna in Robledo de Chavela (Spain). We propose to map the water maser distribution with the VLA, to check whether it traces the same structure as in 1993, or we are witnessing a new episode of enhanced mass-loss activity.

NRAO use only
(10/04)

(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_2O ($6_{16} - 5_{23}$)			
Rest Frequency (MHz)	22235.08			
Velocity (km/s)	10			
Observing frequency (MHz)	22235			
Correlator mode	1A			
IF bandwidth(s) (MHz)	6.25			
Hanning smoothing (y/n)	n			
Number of channels per IF	128			
Frequency Resolution (kHz/channel)	48.8			
Rms noise (mJy/bm, nat. weight., 1 hr)	0.7			
Rms noise (K, nat. weight., 1 hr)	2.2			

(17) Number of sources:	**1**

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

(18) NAME	Coordinates 1950 ⊗ 2000 ○ RA hh mm Dec. ± xx.x°	Conf.	λ (cm)	Corr. mode	Band-width per IF (MHz)	Total Flux (Jy)*	LAS	Required rms (mJy/bm)	Required dynamic range	Time request (hr)
L1448C	03 23, +30.6	B	1.3	1A		6	< 0.5″	1.1	> 50	1

*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):
Best to avoid LST range $\sim 2:30 - 4:30$, when elevation is high ($> 75°$).
Slew time to/from phase calibrator 3C84 can be long in that case.

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

(21) Dates which are not acceptable:

(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).

v4.3 10/04