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: September 22, 2005

(2) Title of Proposal: Monitoring the SiO Masers toward V838 Monocerotis

(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): AC725, AC802

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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)	Any				
(9) Wavelength(s) (400, 90, 20, 6, 3.5, 2, 1.3, 0.7 cm)	0.7, 1.3 cm				
(10) Time requested (hours)	6.0				

(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)

We propose to monitor the SiO maser emission and continue our search for water maser emission from the enigmatic eruptive variable star V838 Monocerotis. It appears that the star cannot be a normal AGB star, so that SiO masers are a somewhat different phenomenon than those we normally think of in the circumstellar shells of Mira variables such as TX Camelopardalis or evolved supergiants like VY Canis Majoris. It is important to continue monitoring the SiO masers for the near-term to determine if the flux density increase continues. We thus request 1.5 hours once per month for the next 4 months. A standard proposal to continue monitoring will be submitted for refereeing at the October 2005 deadline.

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.)	SiO; J=1-0, v=2	SiO; J=1-0, v=1	H_2O	
Rest Frequency (MHz)	42820.542	43122.808	22235.080	
Velocity (km/s)	+55.0 (LSR)	+55.0 (LSR)	+55.0 (LSR)	
Observing frequency (MHz)				
Correlator mode	2AD	2AD	1A	
IF bandwidth(s) (MHz)	6.25	6.25	6.25	
Hanning smoothing (y/n)	n	n	n	
Number of channels per IF	64	64	128	
Frequency Resolution (kHz/channel)	97.7	97.7	48.8	
Rms noise (mJy/bm, nat. weight., 1 hr)	4.2	4.2	2.4	
Rms noise (K, nat. weight., 1 hr)	13	13	7	

(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)
V838 Mon	07 04, -03.8	Any	0.7	2AD	6.25			7		4 x 75 min.
V838 Mon	07 04, -03.8	Any	1.3	1A	6.25			6		4 x 15 min.

*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): Above 30 degrees elevation if possible, high frequency.

(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