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: 19 May 2006

(2) Title of Proposal: Excited OH in OH/IR stars: The fastest proposal I've ever written

(3) AUTHORS (Add * for new location)	INSTITUTION	E-mail	G/U	Students Only: For Thesis?	Students Only: Ph.D. Year
Vincent L. Fish	NRAO	vfish@nrao.edu			
Loránt O. Sjouwerman	NRAO	lsjouwer@nrao.edu			

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

(5) Contact author for scheduling: Vincent L. Fish
address: 1003 Lopezville Rd.
Socorro, NM 87801

(6) Telephone: (505) 835-7098
E-mail: vfish@nrao.edu
Fax: (505) 835-7027

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

(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 observe the 4750 and 4765 MHz transitions of OH in OH/IR stars with detected 1612 MHz emission. Candidate sources will be chosen from existing catalogs of evolved stars with known 1612 MHz maser emission. Particular sources will be selected to fill present gaps in the VLA schedule during dynamic scheduling (i.e., move times). In the event of a detection, follow-up observations may allow us to distinguish between models of Elitzur et al. (1976) and Gray et al. (2005) regarding the details of the pumping in the masers. Depending on the results, these observations may form the basis of an eventual larger survey.

(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.)	OH	OH		
Rest Frequency (MHz)	4750.656	4765.562		
Velocity (km/s)	varies	varies		
Observing frequency (MHz)				
Correlator mode	4	4		
IF bandwidth(s) (MHz)	1.5625	1.5625		
Hanning smoothing (y/n)	no	no		
Number of channels per IF	128	128		
Frequency Resolution (kHz/channel)				
Rms noise (mJy/bm, nat. weight., 1 hr)	2.2	2.2		
Rms noise (K, nat. weight., 1 hr)				

(17) Number of sources:	**10 per hour**

(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)

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

Notes to the table (if any): **Selection criteria: OH/IR stars with 1612 MHz maser emission in undersubscribed LST range during reconfiguration**

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

(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