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: May 3, 2006

(2) Title of Proposal:

Possible OH masers in M31; toward a proper motion of M31?

(3) AUTHORS (Add * for new location)	INSTITUTION	E-mail	G/U	Students Only For Thesis?	Ph.D. Year
Lorant Sjouwerman	NRAO-AOC	lsjouwer@nrao.edu			
Andreas Brunthaler*	MPIfR-Bonn	brunthal@mpifr-bonn.mpg.de			

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

(5) Contact author for scheduling: Lorant Sjouwerman
address: NRAO-AOC

(6) Telephone: +1-505-835-7332
E-mail: lsjouwer@nrao.edu
Fax:

(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)	A−>B				
(9) Wavelength(s) (400, 90, 20, 6, 3.5, 2, 1.3, 0.7 cm)	18 cm				
(10) Time requested (hours)	2				

(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 for two hours of VLA Exploratory time in LST 21:30-03:30 in one of the larger arrays (move is okay). The objective is to verify whether there is an OH maser in the spiral arm of M31. If so, it is the first detection of a maser in M31, which opens up the possibility to measure the motion of M31 in the Local Group.

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.)	OH main			
Rest Frequency (MHz)	1667, 1665			
Velocity (km/s)	−300 (helio)			
Observing frequency (MHz)	1669, 1667			
Correlator mode	4			
IF bandwidth(s) (MHz)	3.1 (550 km/s)			
Hanning smoothing (y/n)	n			
Number of channels per IF	64			
Frequency Resolution (kHz/channel)	48 (9 km/s)			
Rms noise (mJy/bm, nat. weight., 1 hr)	1.7			
Rms noise (K, nat. weight., 1 hr)				

(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)
0039+412	00 42, +41.5	A−>B	18	4	3.1			1.5		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):

(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