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: April 5, 2005

(2) Title of Proposal: A Baryon-Rich, Starless Halo?

(3) AUTHORS (Add * for new location)	INSTITUTION	E-mail	G/U	Students Only: For Thesis?	Students Only: Ph.D. Year
Riccardo Giovanelli	Cornell University	riccardo@astro.cornell.edu			
ALFALFA consortium	http://egg.astro.cornell.edu/alfalfa/people.php				

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

(5) Contact author for scheduling: Riccardo Giovanelli
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Ithaca, NY 14853

(6) Telephone: 607-255-6505
E-mail: riccardo@astro.cornell.edu
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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)	C				
(9) Wavelength(s) (400, 90, 20, 6, 3.5, 2, 1.3, 0.7 cm)	20 cm				
(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 request C configuration time to observe a source detected by the ALFALFA survey, which uses the Arecibo multifeed L band system. The source, of about $2 - -3 \times 10^7$ $M_\odot$ in HI, has no apparent optical counterpart, nor is there any large galaxy in its vicinity. The source therefore appears as a good candidate to be a baryon–rich, starless halo.

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.)	HI			
Rest Frequency (MHz)	1420.4058			
Velocity (km/s)	550			
Observing frequency (MHz)	1417			
Correlator mode	4			
IF bandwidth(s) (MHz)	1.5625			
Hanning smoothing (y/n)	y			
Number of channels per IF	64			
Frequency Resolution (kHz/channel)	24.414			
Rms noise (mJy/bm, nat. weight., 1 hr)	0.97			
Rms noise (K, nat. weight., 1 hr)	2.90			

(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 ○ RA hh mm	2000 ⊗ 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)
HI1330+0930	12 30	+ 09.5	C	20	4	1.5625	0.01	2′	∼0.5	10	6

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

Notes to the table (if any): Peak line flux inferred from single dish spectrum

(19) Restrictions to elevation (other than hardware limits) or HA range (give reason): None

(20) Preferred range of dates for scheduling (give reason):
Given the source location in the sky, we request observations at the start of the C-array cycle to avoid solar interference.

(21) Dates which are not acceptable: None

(22) Special hardware, software, or operating requirements: None

(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