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
SEND TO: Director NRAO, 520 Edgemont Rd., Charlottesville, VA 22903-2475

(1) Date Prepared: 28 Sep 2001

(2) Title of Proposal: A VLA Survey for Pulsar Astrometry with the VLBA

(3) AUTHORS	INSTITUTION	Who Will Come To The VLA?	For Grad Students Only: Observations For Ph.D. Thesis?	For Grad Students Only: Anticipated Ph.D. Year
S. Chatterjee, J. M. Cordes, D. Wong	Cornell University			
W. Brisken, W. M. Goss, E. B. Fomalont, J. Benson, M. McKinnon	NRAO	x		
S. E. Thorsett	U. C. Santa Cruz			
M. Kramer, A. Lyne	Jodrell Bank, U. K.			
T. J. W. Lazio; D. C. Backer	NRL; U. C. Berkeley			
A. Golden	National University of Ireland			

(4) Related VLA previous proposal number(s): N/A

(5) Contact author
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(7) Scientific Category: ⊗ astrometry,geodesy & techniques, ○ solar, ○ propagation, ○ planetary, ○ stellar, ⊗ pulsar, ⊗ ISM, ○ galactic center, ○ galactic structure & dynamics (HI), ○ normal galaxies, ○ active galaxies, ○ cosmology

(8) Configurations (one per column) (A, B, C, D, BnA, CnB, DnC, Any)	A	A			
(9) Wavelength(s) (400, 90, 20, 18, 6, 3.5, 2, 1.3, 0.7 cm)	21 cm	3.5 cm			
(10) Time requested (hours)	17	15			

(11) Type of observation: ⊗ imaging, ⊗ point source, ○ monitor, ⊗ continuum, ○ lin poln, ○ circ poln, ○ solar, ○ VLBI, (check all that apply) ○ spectroscopy, ⊗ multichannel continuum, ○ phased array, ⊗ pulsar, ○ high-time resolution ○ Pie Town link, ⊗ other Survey for a large VLBA project.

(12) ABSTRACT (Do not write outside this space. Please type.)

We propose a large, multi-epoch VLBA project that aims to measure the parallaxes and proper motions of a large sample of pulsars. Currently, parallax measurments exist for 17 pulsars, including 6 from pulse timing analyses and 10 determined using the VLBA. (See Table 1 for a summary.) We propose to double this sample with a program of dynamically scheduled observations using 4 observations per target per year over a period of two years. VLA observations are required for improved pulsar positions and to search for in-beam calibrators.

NRAO use only
(03/00)

(13) Observer present for observations? ⊗ Yes ○ No Data reduction at? ○ Home ⊗ AOC or CV (2 weeks notice)

(14) Help required: ⊗ None ○ Consultation ○ Friend (extensive help)

(15) Spectroscopy Only:

	line 1	line 2	line 3	line 4
Transition (HI, OH, etc.)				
Rest Frequency (MHz)				
Velocity (km/s)				
Observing frequency (MHz)				
Correlator mode				
IF bandwidth(s) (MHz)				
Hanning smoothing (y/n)				
Number of channels per IF				
Frequency Resolution (kHz/channel)				
Rms noise (mJy/bm, nat. weight., 1 hr)				
Rms noise (K, nat. weight., 1 hr)				

(16) Number of sources 62 (If more than 10 please attach list. If more than 30 give only selection criteria and LST range(s).)

(17) NAME	Epoch: 1950 ○ 2000 ⊗ RA hhmm Dec ± xx.x°	Config.	Band (cm)	Band-width (MHz)	Total Flux		Largest angular size	Required rms (mJy/bm)	Time requested (hours)
					line (Jy)*	cont. (Jy)			
Pulsar selection criteria are explained in text.									
	0500 to 0900 LST	A	21	25					4
	1330 to 0230 LST	A	21	25					13
	0515 to 0845 LST	A	3.5	50					3.5
	1415 to 0145 LST	A	3.5	50					11.5

*this should be the total flux at the peak of the line

Notes to the table (if any):

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

(19) Preferred range of dates for scheduling (give reason): Please schedule the 20 cm observations early in the A-array and the 3.5 cm observations a month later as the 20 cm results impact the sources observed at 3.5 cm.

(20) Dates which are not acceptable:

(21) Special hardware, software, or operating requirements: N/A

(22) 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).