VLA OBSERVING APPLICATION

NRAO

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: 1 June 2005

(2) Title of Proposal: An Astrometric Position for a New Relativistic Binary Pulsar

(3) AUTHORS (Add * for new location)	INSTITUTION	E-mail	G/U	Students Only: For Thesis?	Students Only: Ph.D. Year
S. Chatterjee*	NRAO and CfA	schatterjee@cfa.harvard.edu			
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for the					
ALFA Pulsar Consortium					

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

(5) Contact author for scheduling: S. Chatterjee
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(6) Telephone: 617 495 9245
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Fax: 617 496 7969

(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)	B or CnB				
(9) Wavelength(s) (400, 90, 20, 6, 3.5, 2, 1.3, 0.7 cm)	20 cm				
(10) Time requested (hours)	0.75				

(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 brief exploratory VLA observations in the B or B→C configuration in order to determine the position of a recently discovered relativistic binary pulsar with sub-arcsecond precision. Unlike other binary systems, the pulsar is young and thus probably subject to timing noise, which limits the achievable positional accuracy through timing. A VLA position will (i) decouple the timing solution from the positional uncertainty and allow the refinement of post-Keplerian timing parameters in the short term, (ii) allow the assessment of an in-beam calibrator and set the stage for a VLBA/HSA astrometric campaign to determine its proper motion and parallax, and (iii) enable follow-up observations at other wavelengths.

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.)				
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)				

(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)
J1906+0747	19 06 +07 47	B	20	4	25			0.02	> 20	0.75

*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