VLBA PROPOSAL COVERSHEET

rcvd:

DEADLINES: 1st of Feb., June, Oct.

(1) Date Prepared: May 26, 2006

(2) Title of Proposal: The First Magnetar Proper Motion from the Transient AXP XTE J1810−197

(3) AUTHORS (Add * for new location)	INSTITUTION	E-mail	G/U	Students Only: For Thesis?	Students Only: Ph.D. Year
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(4) Related previous or current VLBI proposal(s): ○ Resubmission

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(7) Scientific Category: ⊗ astrometry & geodesy ⊗ galactic ○ extragalactic ○ other:
Rapid Response Science: ⊗ Known Transient ○ Exploratory ⊗ Target of Opportunity

(8) Wavelength(s) requested (those not available on the global network are indicated with a small circle):
○ 90cm ○ 50cm ○ 30cm ○ 21cm ○ 18cm ○ 13cm ⊗ 6cm ○ 5cm ⊗ 3.6cm ○ 3.6/13cm
○ 2cm ○ 1.3cm ○ 7mm ○ 3mm
⊗ Global Network standard bands ○ Special frequencies:

(9) Recording format: ○ Default continuum setup (VLBA only), ⊗ VLBA/MkIV, ○ MkIII: Mode
Bandwidth per BaseBand channel:
Aggregate bit rate: 256 Mbps (8 BB channels at 16 MSamples/sec of ○ 1 bit, ⊗ 2 bit)

(10) ○ Multi-epoch observation: ___ epochs of ___ hours each, separated by ___

(11) Network	Requested antennas	Total time requested
EVN & MERLIN		
VLBA	ALL (or any 9)	4 hrs
other NRAO		
Non-VLBI Intruments		

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

We propose a first-epoch observation of the remarkable transient AXP XTE J1810−197 with the VLBA; a normal proposal (June 1) will request future epochs in order to determine the first proper motion ever measured for a magnetar. The X-rays from this transient are fading, and will be back to pre-outburst level by the end of the year. While we can not be certain how rapidly the radio pulses will fade, we consider it prudent to make a first-epoch observation as soon as possible in order to take advantage of this opportunity to test theories of magnetar birth which posit high velocities.

Scheduler use only

(8/03)

(13) Observation type: ⊗ Interferometry, ○ Spectroscopy, ⊗ Pulsar, ⊗ Phase referencing

(14) Proposal is ⊗ Suitable ○ Unsuitable for dynamic scheduling.

(15) Polarization: ○ Single Polarization ⊗ Dual Circular Polarization
Global network standard for single polarization is LCP for all λs except 13cm (RCP) and 3.6cm (RCP).

(16) Tape usage (Show <recording time>/<total time>): ______

(17) Assistance required:
Observation Setup: ⊗ Consultation, ○ Extensive help, ○ Observe file preparation
Postprocessing: ⊗ Consultation, ○ Extensive help, ○ Calibration service

(18) Processor: ⊗ Socorro, ○ JIVE, ○ Haystack, ○ Bonn, ○ Washington, ○ Other____________
Special processing: ⊗ XPol, ⊗ Pulsar gate, ○ Multiple Fields:______
Averaging time: ______ Spectral channels per baseband channel: ______
⊗ Other special processing: Both gated and ungated correlation passes requested

(19) Postprocessing Location: Columbia, CfA, NRAO-SOC

(20) Source list: ⊗ J2000 ○ B1950
If more than 4 sources, please attach list. If more than 30, give only selection criteria and GST range(s)

	Source 1	Source 2	Source 3	Source 4
Name(s)	XTE J1810−197			
RA (hh mm)	18 09 51.08			
Dec (dd.d)	-19 43 51.2			
GST range (Europe)				
GST range (US)				
GST range (Other)				
Band(s)	6 cm, 3.6 cm			
Flux density (Total, Jy)	0.006			
Flux density (correlated, mJy)	6.0			
RMS needed (mJy/beam)	0.10			
Peak/RMS needed				

(21) Preferred VLBI session or range of dates for scheduling, and why:
As soon as practical owing to the transient nature of the source.

(22) Dates which are NOT acceptable, and why:
NONE

(23) Attach a self-contained scientific justification, not in excess of 1000 words.
Preprints or reprints will not be forwarded to the referees.

Information about the capabilities of the VLBA may be found on the World Wide Web by starting at the NRAO home page, http://www.nrao.edu, and selecting the VLBA from "Sites and Telescopes."

A brief summary of the capabilities of the EVN antennas is given in the EVN STATUS TABLE in the EVN USER GUIDE, which may be found at http://www.evlbi.org/user_guide/user_guide.html.

Please include the full postal addresses for first-time users or for those that have moved (if not contact author).