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 19, 2005

(2) Title of Proposal: VLA observations of very faint X-ray transients discovered during our June X-ray observations

(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 VLA previous proposal number(s):

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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)	Any				
(9) Wavelength(s) (400, 90, 20, 6, 3.5, 2, 1.3, 0.7 cm)	3.5, 6 cm				
(10) Time requested (hours)	6 hours				

(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 VLA observations of the newly recognized group of very faint X-ray transients (VFXTs). Such systems are 10 to 1000 times fainter than the classical transients which are accreting neutron stars and black holes in binary systems. Most VFXTs are found close to the Galactic Center. We have an approved monitoring program using the X-ray telescopes *Chandra* and *XMM-Newton* to search for new VFXTs in a region of ∼2 square degrees centered on the Galactic Center. In June, September and October 2005 a set of *XMM-Newton* and *Chandra* observations will be performed, likely finding ∼3–5 new VFXTs. We propose VLA follow-up observations of the VFXTs found during our June X-ray observations, which will significantly help to elucidate their nature. It will be the first time that such quick follow-up observations are performed. Through the normal 1 February deadline of the VLA we have already secured similar VLA observations for the September and October X-ray observations.

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:	**3**

(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)
Jun VFXT-1	17 45, –29 00	Any	3.5,6		50	0.1-1	pt.	0.03	1000	2
Jun VFXT-2	17 45, –29 00	Any	3.5,6		50	0.1-1	pt.	0.03	1000	2
Jun VFXT-3	17 45, –29 00	Any	3.5,6		50	0.1-1	pt.	0.03	1000	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):
As soon as possible after 8 June 2005, and definitely by 19 June 2005. The *Chandra* observations are scheduled for 5 June 2005; we will analyse the data and find coordinates for the new transients by 8 June 2005.

(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