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: 2005 August 9

(2) Title of Proposal: A Search for ∼1 yr Recurrent Activity from the Bursting Transient GCRT J1745-3009
Exploratory Proposal

(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): AH872

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(7) Scientific Category: ◯ solar system ⊗ galactic ◯ extragalactic ◯ other:

Rapid Response Science: ◯ Known Transient ⊗ Exploratory ◯ Target of Opportunity

(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)	90 cm 20 cm				
(10) Time requested (hours)	9				

(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 have detected bursting activity at 330 MHz from the Galactic center radio transient, GCRT J1745-3009, at two epochs: 30 September 2002 and 28 September 2003. No other detections at this or other wavelengths, in quiescence or in a bursting state, have been reported. Assuming the source becomes active at regular intervals, it should recur next on 22 September 2005. We propose to monitor the source in the dual 90/20 cm observing mode for three hours each on 21, 22, and 23 September in order to determine if bursting activity recurs regularly, and if so, to constrain the duration of such activity. Simultaneous detections at two frequencies will constrain the spectrum of the source, which, together with the temporal properties gleaned, will yield important insight into the nature of this object.

NRAO use only
(08/03)

(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)
GCRT J1745-3009	17 45, -30.2	C	90/20	LP		~1/?		~30/?		3x3

*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): 3 hours on each of 21, 22, 23 September 2005.
If the transient bursting activity recurs at regular intervals, the next should occur on 22 September 2005. The other dates will be useful to constrain the duration of bursting activity.

(21) Dates which are not acceptable:

(22) Special hardware, software, or operating requirements:

(23) Please attach a self-contained <u>Scientific Justification</u> **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).

v4.2 8/03