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: Nov 17, 2003

(2) Title of Proposal: Radio Spectrum of the X-ray Jet in the z=4.3 Quasar GB 1508+5714

(3) AUTHORS (Add * for new location)	INSTITUTION	E-mail	G/U	Students Only: For Thesis?	Students Only: Ph.D. Year
Teddy Cheung	Brandeis University	ccheung@brandeis.edu	G	No	2004
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(4) Related VLA previous proposal number(s): AC651

(5) Contact author for scheduling: Teddy Cheung
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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)	B				
(9) Wavelength(s) (400, 90, 20, 6, 3.5, 2, 1.3, 0.7 cm)	6, 3.5				
(10) Time requested (hours)	2				

(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 a radio counterpart to the X-ray jet in the z=4.3 quasar GB 1508+5714 by examining archival VLA data at 1.4 GHz. This proposal requests additional observations at 5 and 8.4 GHz in order to measure the radio spectrum of the jet. These measurements will help to (1) confirm our conclusion that the X-ray emission is inverse Compton scattered emission off the CMB from the radio jet, and (2) probe the physical conditions in this extremely high redshift jet.

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)
GB1508+5714	15 10, +57.0	B	6		50	2	$3''$	0.02	10^5	1
		B	3.5		50	2	$3''$	0.02	10^5	1

*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).

v4.2 8/03