PROPOSAL COVERSHEET

DEADLINES: 1st of Feb., June, Oct.
EMAIL TO: toosoc@nrao.edu

rcvd:

(1) Date Prepared: February 9, 2006

(2) Title of Proposal: Catching the Flare in CTA 102 (Target of Oportunity)

(3) AUTHORS (Add * for new location)	INSTITUTION	E-mail	G/U	Students Only For Thesis?	Ph.D. Year
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(4) Related previous or current VLBI proposal(s): BS157 ○ 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:______ (______ BB channels at ______ MSamples/sec of ○ 1 bit, ○ 2 bit)

(10) ⊗ Multi-epoch observation: 3 epochs of 6 hours each, separated by 1 month

(11) Network	Requested antennas	Total time requested
EVN & MERLIN		
VLBA	ALL	GST 03:00–09:00
other NRAO		
Non-VLBI Intruments		

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

The high-redshift quasar CTA102 currently undergoes a major flare at cm-wavelengths. As obtained within the UMRAO program, the 2-cm radio source flux density has reached a historical maximum at the end of January 2006, over 6 Jy. We propose to obtain three multi-frequency VLBA observations of CTA102 to determine the parsec-scale structural and spectral evolution of the flaring component during its maximum and decay. Three RXTE X-ray observations are taking place until Feb 10th and follow-up X-ray and IR monitoring observations are underway so that the milliarcsecond-resolution VLBA jet-component spectra can be complemented to compile broadband spectra of the flare over the whole electromagnetic spectrum. These proposed observations would bridge the gap between performed multi-frequency VLBA observations (polarisation calibrator in BS157, P.I. Savolainen) and proposed ones (pol. cal. in BW86, P.I. Wiik). We plan to submit a full proposal in the June deadline.

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: ______________________________

(19) Postprocessing Location: MPIfR / NASA/GSFC

(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)	CTA 102 (4C 11.69)			
RA (hh mm)	22 32			
Dec (dd.d)	+14.5			
GST range (Europe)				
GST range (US)	3:00–9:00			
GST range (Other)				
Band(s)	Q, K, U, X, C, S			
Flux density (Total, Jy)	∼6			
Flux density (correlated, mJy)	6000			
RMS needed (mJy/beam)	5			
Peak/RMS needed	∼1000			

(21) Preferred VLBI session or range of dates for scheduling, and why:
Feb, Mar, Apr 2006

(22) Dates which are NOT acceptable, and why:

(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).