VLBA PROPOSAL COVERSHEET

rcvd:

DEADLINES: 1st of Feb., June, Oct.
EMAIL TO: toosoc@nrao.edu
OR MAIL TO: Director NRAO, Edgemont Rd. Charlottesville, VA 22903-2475, USA

(1) Date Prepared: January 12, 2008

(2) Title of Proposal: Is the transient in NGC2770 a relativistic SN explosion?

(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

(5) Contact author for scheduling: Alicia Soderberg
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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: 32 MHz
Aggregate bit rate: 256 (____ BB channels at ____ 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	10
other NRAO		
Non-VLBI Intruments		

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

On Jan 9 2008 we serendipitously discovered an extremely luminous X-ray burst in NGC 2770 (d=27 Mpc) with the Swift/XRT. We have since shown the source to have radio, UV/optical and X-ray counterparts and our optical spectroscopy shows evidence for an associated Type Ibc supernova. The broadband properties of the source are similar to those of sub-energetic GRBs and XRFs and therefore it is likely that this transient represents the relativistic explosion of a massive star. We request DDT VLBA observations at 1 month after the explosion to measure/constrain the expansion speed of the ejecta and thus determine the nature of this amazing transient.

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: 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)	NGC2770-Transient	NGC2770-Transient		
RA (hh mm)	09:09:30.6517	09:09:30.6517		
Dec (dd.d)	+33:08:20.153	+33:08:20.153		
GST range (Europe)				
GST range (US)	4-14	4-14		
GST range (Other)				
Band(s)	1.3cm	3.6cm		
Flux density (Total, Jy)	$>$ 0.0011	$>$ 0.0011		
Flux density (correlated, mJy)	$>$ 0.5	$>$ 0.5		
RMS needed (mJy/beam)	0.1	0.1		
Peak/RMS needed	3	3		

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

(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).