PROPOSAL COVERSHEET

rcvd:

DEADLINES: 1st of Feb., June, Oct.

(1) Date Prepared: September 25, 2007

(2) Title of Proposal: A Misaligned Relativistic Jet in SN 2007gr?

(3) AUTHORS (Add * for new location)	INSTITUTION	E-mail	Students Only G/U	For Thesis?	Ph.D. Year
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(4) Related previous or current VLBI proposal(s): IG002, RP007 ○ 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: 8 MHz
Aggregate bit rate: 512 (16 BB channels at 16 MSamples/sec of ○ 1 bit, ⊗ 2 bit)

(10) ○ Multi-epoch observation: 2 epochs of 10h hours each, separated by 4 months

(11) Network	Requested antennas	Total time requested
EVN & MERLIN	Cm (or Da), Ef, Jb1 (or Jb2), Hh, Mc, Nt, On25, Tr, Wb(14)	2×10h
VLBA		
other NRAO	GBT	2×7h
Non-VLBI Intruments		

(12) ABSTRACT (Do not write outside this space. Please type)
The most powerful supernovae Ib/c are believed to be connected to long duration gamma-ray burst events. Although there were clear associations between three gamma bursts and type Ib/c supernovae, not all long duration gamma bursts were related to supernovae, and not all type Ib/c supernovae have an associated GRB. It has been proposed that some of the orphan type Ib/c supernovae produce relativistic GRB jets, that are not oriented within our line of sight, explaining the lack of an observable gamma-ray burst. So far this idea has never been confirmed. We propose follow-up EVN+GBT observations of the recent SN 2007gr, which was successfully detected in an e-VLBI experiment on 6-7 September 2007. The distance of the source is only 7.3 Mpc, the closest ever radio-detected type Ib/c supernova, which makes it an ideal case to study the supernova-GRB connection.

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: 1s Spectral channels per baseband channel: 16
◯ Other special processing: ______________________________________

(19) Postprocessing Location: JIVE

(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)	SN2007GR	J0253+3835	J0230+4032	J0247+3254
RA (hh mm)	02h 43m 27.97151s	02h 53m 08.888097s	02h 30m 45.710827s	02h 47m 41.232256s
Dec (dd.d)	+37 20' 44.6873"	+38 35' 24.99792"	+40 32' 53.06741"	+32 54' 31.83650"
GST range (Europe)	23:00-09:00 GST	23:00-09:00 GST	23:00-09:00 GST	23:00-09:00 GST
GST range (US)	02:00-09:00 GST	02:00-09:00 GST	02:00-09:00 GST	02:00-09:00 GST
GST range (Other)				
Band(s)	C (5 GHz)	C (5 GHz)	C (5 GHz)	C (5 GHz)
Flux density (Total, Jy)	0.0004 Jy	0.4 Jy	0.3 Jy	0.3 Jy
Flux density (correlated, mJy)	0.1–0.4 mJy	300 mJy	150 mJy	200 mJy
RMS needed (mJy/beam)	0.005 mJy/beam	0.1 mJy/beam	0.1 mJy/beam	0.1 mJy/beam
Peak/RMS needed	20	1000	1000	1000

(21) Preferred VLBI session or range of dates for scheduling, and why:
The requested telescopes may be available at the end of the 6cm EVN session in early November. Observations within 100 days of the initial explosion are required (not later than November). Follow-up observations are requested in the first EVN session in 2008, with the same array — depending on the success of the first run.

(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).