VLBA PROPOSAL COVERSHEET

rcvd:

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

(1) Date Prepared: February 24, 2006

(2) Title of Proposal: The Expanding Shell and Jet of RS Ophiuchus

(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): BS146 ◯ Resubmission

(5) Contact author for scheduling: Amy Mioduszewski
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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: 256 (8 BB channels at 16 MSamples/sec of ◯ 1 bit, ⊗ 2 bit)

(10) ◯ Multi-epoch observation: 12 epochs of 4 hours each, separated by 2-3 days

(11) Network	Requested antennas	Total time requested
EVN & MERLIN		
VLBA	ALL	12×4 hours
other NRAO	Y1 when possible	12×4 hours
Non-VLBI Intruments		

(12) ABSTRACT (Do not write outside this space. Please type)
We propose intensive VLBA monitoring of the symbiotic recurrent nova RS Oph, currently in outburst, as it rises to maximum radio brightness. Twelve 4-hour observations during the next month will allow us to: 1- measure the shell radius, expansion speed, and rate of deceleration – parameters needed for outburst modeling and interpretation of data at every wavelength; 2- follow the entirely optically-thick period of the radio outburst, tracing the three-dimensional structure of the ejecta; 3- uncover the spatial and chronological relationship between the spherical ejecta and a possible collimated jet; and 4- identify the source(s) of non-thermal emission.

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, CfA, MSSL

(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)	RS Ophiuchus			
RA (hh mm)	17 50			
Dec (dd.d)	-06.7			
GST range (Europe)				
GST range (US)				
GST range (Other)				
Band(s)				
Flux density (Total, Jy)	0.03-0.1			
Flux density (correlated, mJy)	30-100			
RMS needed (mJy/beam)	0.1			
Peak/RMS needed	10:1			

(21) Preferred VLBI session or range of dates for scheduling, and why:
Observations every 2-3 days, starting NOW, to track the source during the optically-thick rise to maximum

(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).