VLBA PROPOSAL COVERSHEET

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

rcvd:

(1) Date Prepared: April 3, 2006

(2) Title of Proposal: Monitoring the expanding radio remnant of RS Oph (2006)

(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): ○ 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: 6 epochs of 11 hours each, separated by 1 week

(11) Network	Requested antennas	Total time requested
EVN & MERLIN		
VLBA	VLBA	66 hours
other NRAO		
Non-VLBI Intruments		

(12) ABSTRACT (Do not write outside this space. Please type)
RS Oph is a recurrent nova with previous outbursts in 1898, 1933, 1958, 1967 and 1985. It was discovered in outburst again on 2006 Feb 12. We have already been awarded a TOO programme (BO026) to image RS Oph with VLBA at 6/18cm with very interesting results. These include an expanding ring interpreted as shocked gas and a recently discovered second component whose origin is not yet clear. Here we propose to obtain more imaging to follow the continuing evolution of the structure. We also aim to investigate the phase where we expect blow out into the cavity in the surrounding red giant wind created by the previous outburst. These observations are being complemented by our continuing observations with VLA, MERLIN, EVN, Swift, Chandra and XMM-Newton as well as optical/IR photometry/spectroscopy.

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>): 100%

(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: Jodrell Bank

(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 Oph			
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)	50 mJy			
Flux density (correlated, mJy)	30 mJy			
RMS needed (mJy/beam)	0.1			
Peak/RMS needed				

(21) Preferred VLBI session or range of dates for scheduling, and why:
April 16th to May 21st approximately.

(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).