VLA OBSERVING APPLICATION

A

rcvd:

DEADLINES: 1st of Feb., June., Oct. for next configuration following review
INSTRUCTIONS: Each numbered item must have an entry or N/A
E-MAIL TO: propsoc@nrao.edu (different for some Rapid Response Science)
OR MAIL TO: Director NRAO, 520 Edgemont Rd., Charlottesville, VA 22903-2475

(1) Date Prepared: 13 Feb 2006

(2) Title of Proposal: Target of Opportunity observations of recurrent nova RS Oph

(3) AUTHORS (Add * for new location)	INSTITUTION	E-mail	G/U	Students Only: For Thesis?	Students Only: Ph.D. Year
Dr Stewart Eyres*	Univ. of Central Lancashire	spseyres@uclan.ac.uk			
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(4) Related VLA previous proposal number(s):

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(7) Scientific Category: ○ solar system ⊗ galactic ○ extragalactic ○ other:

Rapid Response Science: ○ Known Transient ○ Exploratory ⊗ Target of Opportunity

Joint Proposal: ⊗ VLA/VLBA ○ VLA/GBT ○ VLA/VLBA/GBT

(8) Configurations (one per column) (A+Pt, A, B, C, D, BnA, CnB, DnC, Any)	A				
(9) Wavelength(s) (400, 90, 20, 6, 3.5, 2, 1.3, 0.7 cm)	1.3, 3.5, 6, 20				
(10) Time requested (hours)	18x0.5				

(11) Type of observation: ⊗ continuum ○ spectroscopy ○ multichannel continuum ○ polarimetry ○ solar
(check all that apply) ○ pulsar ○ high-time resolution ⊗ Pie Town link ○ other:

(12) Suitable for dynamic scheduling? ○ Suitable ○ Unsuitable

(13) ABSTRACT (do not write outside this space)

RS Oph is a recurrent nova, with previous outbursts occuring in 1898, 1933, 1958, 1967 and 1985. It has just been identified (12.34 Feb UT) as being in outburst (visual mag 4.5 compared with quiescence of about 11 mag). In 1985 upwards of 40 observations in the radio characterised the emission as rapidly changing and elongated E-W. Observations proposed here seek to improve the coverage in the early stages of the outburst and provide spectral index images of the ejecta. These observations will be complemented by VLBA, MERLIN/EVN, Swift-XRT and XMM-Newton observations, as well as numerous optical and infrared spectroscopic observations. Together these provide a chance to understand the outburst, ejecta development and energetics of the system in detail never before achieved. To make this possible we are looking at ∼30 min observation every 10 days for a year, starting as soon as possible.

NRAO use only
(10/04)

(14) Observer present for observations? ◯ Yes ⊗ No Data analysis at? ⊗ Home ◯ AOC or CV (2 weeks notice)

(15) Help required: ◯ None ⊗ Consultation ◯ Friend (extensive help)

(16) Spectroscopy only	line 1	line 2	line 3	line 4
Transition (HI, OH, etc.)				
Rest Frequency (MHz)				
Velocity (km/s)				
Observing frequency (MHz)				
Correlator mode				
IF bandwidth(s) (MHz)				
Hanning smoothing (y/n)				
Number of channels per IF				
Frequency Resolution (kHz/channel)				
Rms noise (mJy/bm, nat. weight., 1 hr)				
Rms noise (K, nat. weight., 1 hr)				

(17) Number of sources:	**1**

(If more than 10 please attach list. If more than 30 give only selection criteria and LST range(s).)

(18) NAME	Coordinates 1950 ◯ 2000 ⊗ RA hh mm Dec. ± xx.x°	Conf.	λ (cm)	Corr. mode	Band-width per IF (MHz)	Total Flux (Jy)*	LAS	Required rms (mJy/bm)	Required dynamic range	Time request (hr)
RS Oph	17 50 -06.7	A	1.3		50	0.03	0.2″			0.13
			3.5		50	0.03	0.2″			0.12
Repeat each set			6		50	0.03	0.2″			0.12
every ten days			20		50	0.03	0.2″			0.12

*For spectral line, this should be the total flux at the peak of the line

Notes to the table (if any):

(19) Restrictions to elevation (other than hardware limits) or HA range (give reason):

(20) Preferred range of dates for scheduling (give reason):

(21) Dates which are not acceptable:

(22) Special hardware, software, or operating requirements:

(23) Please attach a self-contained Scientific Justification **not in excess of 1000 words.** (Preprints or reprints will be ignored.)
Please include the full addresses (postal and e-mail) for first-time users or for those that have moved (if not contact author).
When your proposal is scheduled, the contents of the cover sheets become public information (Any supporting pages are for refereeing only).
v4.3 10/04