VLBA PROPOSAL COVERSHEET

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

rcvd:

(1) Date Prepared: September 22, 2005

(2) Title of Proposal: VLBA Observations of the SiO Masers in V838 Monocerotis

(3) AUTHORS (Add * for new location)	INSTITUTION	E-mail	Students Only G/U	For Thesis?	Ph.D. Year
M. Claussen	NRAO	mclausse@nrao.edu			
K. Healy	ASU	kevin.healy@asu.edu			
H. Bond	STScI	bond@stsci.edu			
S. Starrfield	ASU	sumner.starrfield@asu.edu			
C. Woodward, R. Gehrz	Univ. Minnesota	chelsea@astro.umn.edu, gehrz@astro.umn.edu			
A. Evans	Keele University	ae@keele.ac.uk			
M. Rushton	Keele University	mtr@astro.keele.ac.uk	G	No	2005

(4) Related previous or current VLBI proposal(s): ○ Resubmission

(5) Contact author for scheduling: M. Claussen
Address: NRAO
P.O. Box O
Socorro, NM 87801

(6) Telephone: 505 835 7284
Fax: 505 835 7027

(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
Aggregate bit rate: 128 (4 BB channels at 16 MSamples/sec of ○ 1 bit, ⊗ 2 bit)

(10) ○ Multi-epoch observation: 2 epochs of 8 hours each, separated by 2 months

(11) Network	Requested antennas	Total time requested
EVN & MERLIN		
VLBA	ALL	16 hours + 2 hours (cal checks)
other NRAO	VLA for calibrator search	1 hour
Non-VLBI Intruments		

(12) ABSTRACT (Do not write outside this space. Please type)
We propose to use the VLBA to measure the distribution of masers in the circumstellar shell around V838 Monocerotis. This interesting star (which is unlikely to be a normal AGB star) underwent an outburst in early 2002, and SiO masers were discovered in February 2005. Between February and September the v=2 J=1→0 line has increased in peak flux density by nearly an order of magnitude. Because of the strength it is now possible to perform VLBI on these masers. A map of the distribution of SiO masers in V838 Mon will help to understand the outburst phenomenon by studying the kinematics and dynamics of the shell. We will also investigate the feasibility of measuring the parallax to V838 Mon.

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: 1.0 Spectral channels per baseband channel: 512
○ 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)	V838 Mon			
RA (hh mm)	07 04			
Dec (dd.d)	-03.8			
GST range (Europe)				
GST range (US)	10 - 18			
GST range (Other)				
Band(s)	0.7 cm			
Flux density (Total, Jy)	5 Jy			
Flux density (correlated, mJy)	50 mJy			
RMS needed (mJy/beam)	10 mJy			
Peak/RMS needed	5 sigma for weakest features			

(21) Preferred VLBI session or range of dates for scheduling, and why:
As soon as can be scheduled

(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).