VSOP PROPOSAL COVER SHEETS

ID :

TR :

SR :

DEADLINE : 17 November, 1995
SEND TO : VSOP SOG, ISAS, 3-1-1 Yoshinodai, Sagamihara, Kanagawa 229, JAPAN

Please read Appendix C of Announcement of Opportunity for details on how to fill in this Cover Sheet.

(1) Date prepared : 1995 November 13

(2) Proposal title : High Frequency Variables

(3)	INVESTIGATORS	INSTITUTION
P.I.	Glen Langston	NRAO, Green Bank
co-I.	Frank Ghigo	NRAO, Green Bank
co-I.	Anthony Minter	NRAO, Green Bank
co-I.		
co-I.		
co-I.		
co-I.		
co-I.		
co-I.		

(4) Principal Investigator (or contact person) details...

Name : Glen Langston
Address : NRAO
:P.O. Box 2
:Green Bank, WV 24944
:U.S.A.

Internet : glangsto@nrao.edu
Other e-mail :
Fax :001-304-456-2200
Telephone : 001-304-456-2224

(5) Proposal Abstract :

We propose high resolution observations of a sample of radio sources monitored by the Green Bank interferometer. Over 160 sources are monitored daily by the Green Bank Interferometer, following the long term variations of these sources at S and X band. For a few sources, the percentage variation at X band is much greater than at S band. Most notable of these sources is 1413+135, which is 17 times more variable at X band than S band. 1413+135 is possibly a gravitational lens system, but as yet, there is no explanation for this remarkable variability. We have selected a sample of 4 bright radio sources which are more than 5 times more variable at X band than S band. We propose 5. GHz observations with VSOP + VLBA + GB 140' for this sample.

(6) Proposal Category (indicate all that apply):

Object type:

☑ AGN, ☐ Masers, ☐ Stellar, ☐ Other :

Experiment type:

☑ Single-observation, ☐ Monitoring, ☐ Polarization,
☐ Time-critical, ☐ Target of Opportunity, ☐ Other :

(7) VSOP spacecraft observing mode (see Section 3 and Table 5 of the VSOP Proposer's Guide):

☑ 2 channel x 16 MHz, 2-bit (Standard mode),
☐ 2 channel x 32 MHz, 1-bit,
☐ 1 channel x 32 MHz, 2-bit

Phase calibration tones:

☑ On (Standard continuum mode),
☐ Off (Standard spectral line mode)

(Include justification of any non-standard choice at (14) below)

(8) Ground radio telescope setup

Polarization :

☑ VSOP Standard (IEEE LCP), ☐ Non-standard :

Recording mode :

☑ As for VSOP spacecraft (Standard), ☐ Other :

(9) Investigator participation in scheduling

☑ PI (or co-I) wishes to participate in scheduling ground radio telescopes
☐ PI (or co-I) wishes to participate in scheduling the space radio telescope

(10) Preferred correlator (see Sections 9.11 and 12 of VSOP Proposer's Guide):

☐ No preference, ☐ Mitaka, ☑ Socorro, ☐ Other :

(11) Preferred post-correlation data analysis location:

☑ Home Institution, ☐ Mitaka, ☐ NRAO AOC, ☐ JIVE, ☐ Other

(12) Post-correlation data analysis assistance required:

☐ None, ☑ Consultation, ☐ Extensive help

(13) Details of proposed experiments

An 'experiment' is one or more observations of one source in one wavelength band.
A request to observe the same source in all 3 wavelength bands requires 3 columns to be filled in.
To observe the same source at the same frequency multiple times – a 'monitoring experiment' – requires only one column to be filled in.
Number of experiments in this proposal: 4

	Experiment 1	Experiment 2	Experiment 3	Experiment 4
Source name	0201+113	1116+128	1413+135	2344+092
RA (hh mm ss.s)	02h01m05.997s	11h16m20.8	14h13m33.910	23h44m03.773
Dec (dd mm ss)	11d20'22.85	12d51'06.7	13d34'17.40	09d14'05.45
J2000 or B1950?	B1950	B1950	B1950	B1950
Observing frequency band (GHz)	5	5	5	5
Continuum observations:				
Standard VSOP freq. channels?	☑	☑	☑	☑
Channel A range (MHz)				
Channel B range (MHz)				
Spectral line observations:				
Ch.A spectral line rest freq. (MHz)				
Ch.A LSR velocity (km/s)				
Ch.B spectral line rest freq. (MHz)				
Ch.B LSR velocity (km/s)				
Min. spectral channels per IF channel				
Correlator averaging time (sec)				
FWHM of field of view required (mas)				
No. of correlating passes (if >1)				
Measured total flux density (Jy)	0.82	1.70	1.10	1.50
Measured correlated flux density on > 5000 km baseline (Jy)	0.45	0.50	1.3	0.4
Image RMS needed (mJy/beam)				
Ground Radio Telescopes:				
Preferred choice:				
Number of medium telescopes	1	1	1	1
Number of large telescopes	0	0	0	0
Suggested array given at Item (14)	☑	☑	☑	☑
Minimum acceptable:				
Number of medium telescopes	1	1	1	1
Number of large telescopes	0	0	0	0
Suggested array given at Item (14)	☑	☑	☑	☑
Length of observation:				
Preferred length (orbits)	3	3	3	3
Minimum acceptable length (orbits)	2	2	2	2
Scheduling constraints:				
Preferred P.A. of beam *major* axis (deg)				
'No holes' (u,v) coverage?	☑	☑	☑	☑
Or maximum resolution (u,v) coverage?	☐	☐	☐	☐
Preferred range of dates for scheduling (for monitoring experiments give range for 1st observation only)	to	to	to	to
For monitoring programs:				
Number of observations	1	1	1	1
Mean interval (days)				
Acceptable variance from mean (days)				

(14) Additional notes to the scheduler :

The flux density estimates for 5000 km baselines are based on the source variability data from the Green Bank Interferometer measurements. The proposed observations will be analyzed in conjunction with X band observations of the array: VLBA + Y1 + NRAO 140'. The 5 GHz observations with this array and VSOP will give the required angular resolution.

(15) Attach a scientific and technical justification, not in excess of 2 pages of text and 2 pages of figures. Up to one page of (u,v) plots per source may optionally be included. (Refer to the VSOP Announcement of Opportunity for detailed instructions.) Preprints and reprints will not be forwarded to the Scientific Review Committee.

Send two paper copies of the complete proposal to:

VSOP Observing Proposals
VSOP Science Operations Group
Institute of Space and Astronautical Science
3-1-1 Yoshinodai, Sagamihara
Kanagawa 229 JAPAN

In addition, e-mail the completed LaTeX file to submit@vsopgw.isaslan1.isas.ac.jp

Cover Sheets of accepted proposals will be made available to the astronomical community.

Proposals must be received at ISAS by 17 November 1995