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 : 8 November 1995

(2) Proposal title : Two-Epoch Mapping of Three Variable CGRO Blazars

(3)	INVESTIGATORS	INSTITUTION
P.I.	W. T. Vestrand	University of New Hampshire, USA
co-I.	J. G. Stacy	USRA & University of New Hampshire, USA
co-I.	J. S. Ulvestad	Jet Propulsion Laboratory, USA
co-I.	J. A. Biretta	Space Telescope Science Institute, USA
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co-I.		
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(4) Principal Investigator (or contact person) details...

Name : W. T. Vestrand
Address : Space Science Center
: Morse Hall
: University of New Hampshire
: Durham, NH 03824 USA

Internet : vestrand@unhsmm.unh.edu
Other e-mail :
Fax : +1-603-862-2755
Telephone : +1-603-862-2653

(5) Proposal Abstract :

We propose two-epoch 5-GHz VSOP observations of three active γ-ray blazars with known or probable superluminal properties. The three important γ-ray AGN, 0208−512, 0804+499, and 1633+382, are currently being monitored by multiwavelength campaigns that span the entire spectrum from GeV γ-rays to cm radio wavelengths, and are ideal, but relatively little studied, candidates for VLBI measurements. The most popular γ-ray blazar models predict the emergence of a new VLBI jet component a period of months to years after a γ-ray flare with an apparent transverse speed that is predictable from the multiwavelength properties of the outburst. The high resolution of VSOP measurements is clearly important for these sources, both to test the models for γ-ray blazars and to better delineate the VLBI structure.

(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: 3

	Experiment 1	Experiment 2	Experiment 3	Experiment 4
Source name	0208−512	0804+499	1633+382	
RA (hh mm ss.s)	02 10 46.2	08 08 39.7	16 35 15.5	
Dec (dd mm ss)	−51 01 02	+49 50 37	+38 08 05	
J2000 or B1950?	J2000	J2000	J2000	
Observing frequency band (GHz)	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)	3.0	1.6	2.6	
Measured correlated flux density on > 5000 km baseline (Jy)	2.4	1.3	2.1	
Image RMS needed (mJy/beam)	20	10	20	
Ground Radio Telescopes:				
Preferred choice:				
Number of medium telescopes	4	10	15	
Number of large telescopes	2	0	2	
Suggested array given at Item (14)	☑	☑	☑	☐
Minimum acceptable:				
Number of medium telescopes	3	5	5	
Number of large telescopes	0	0	0	
Suggested array given at Item (14)	☐	☐	☐	☐
Length of observation:				
Preferred length (orbits)	3	3	4	
Minimum acceptable length (orbits)	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)	97-05-10 to 97-09-01	97-03-15 to 97-05-05	97-03-01 to 97-05-15	to
For monitoring programs:				
Number of observations	2	2	2	
Mean interval (days)	520	365	520	
Acceptable variance from mean (days)	60	60	60	

(14) Additional notes to the scheduler :

(1) Preferred array for 0208−512: HT HO MR CG TI MK
(2) Preferred array for 0804+499: VLBA
(3) Preferred array for 1633+382: VLBA EF JO MC NO ON TR WB
(4) All sources are highly variable. Correlated fluxes are taken from 1-mas resolution 5-GHz observations. For 1633+382, the average of 3 values is used.
(5) Only one preferred correlator could be nominated, and this is the VLBA correlator. Because of compatibility issues, this correlator cannot be used for 0208−512, so either the Mitaka correlator or an S2 correlator is required.
(6) In the preferred array for 0208−512, the code 'MK' indicates the Mauna Kea VLBA antenna, which is not listed separately in the Proposer's Guide. TI is included because it might have a 5-GHz receiver, although this also is not listed.

(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