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 : 3 November, 1995

(2) Proposal title : VSOP+VLBA Observations of 4C39.25 at λ1.3cm and λ6cm

(3)	INVESTIGATORS	INSTITUTION
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(4) Principal Investigator (or contact person) details...

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(5) Proposal Abstract :

We propose to observe the compact source 4C 39.25 with the VLBA and VSOP for two epochs at 1.3 cm and one epoch at 6 cm. We intend to monitor the 'collision' of the superluminally moving component b with the stationary component a, taking advantage of the high angular resolution provided by VSOP at centimetre wavelengths, and to understand the reasons of the dramatic increase in total flux density of the radio source. Combination of the results from these experiments with our ongoing VLBI monitoring with earth-based arrays at cm- and mm-wavelengths will give us the necessary structural- and spectral-information required to test the physical jet models we have developpped for this source.

(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: 2

	Experiment 1	Experiment 2	Experiment 3	Experiment 4
Source name	4C39.25	4C39.25		
RA (hh mm ss.s)	09 23 55.314	09 23 55.314		
Dec (dd mm ss)	39 15 23.6	39 15 23.6		
J2000 or B1950?	B1950	B1950		
Observing frequency band (GHz)	22	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)	12.0	10.5		
Measured correlated flux density on > 5000 km baseline (Jy)	0.5-3.5	1-5		
Image RMS needed (mJy/beam)	50.0	20.0		
Ground Radio Telescopes:				
Preferred choice:				
Number of medium telescopes	10	10		
Number of large telescopes	–	–		
Suggested array given at Item (14)	☑	☑	☐	☐
Minimum acceptable:				
Number of medium telescopes	7	7		
Number of large telescopes				
Suggested array given at Item (14)	☑	☑	☐	☐
Length of observation:				
Preferred length (orbits)	4	2		
Minimum acceptable length (orbits)	2	2		
Scheduling constraints:				
Preferred P.A. of beam *major* axis (deg)	0	0		
'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)	April 1, 1997 to May 5, 1997	April 1, 1997 to May 5, 1997	to	to
For monitoring programs:				
Number of observations	2	1		
Mean interval (days)	330			
Acceptable variance from mean (days)	30			

(14) Additional notes to the scheduler :

- The preferred array for the experiments, both at 22GHz and 5GHz, are VLBA+VSOP.
- The inclusion of Go, Ro or EF at 22GHz would benefit the experiments, since there are deep minima in the visibility curves.

(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