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 : 10 November, 1995

(2) Proposal title : Multi-Frequency High-Resolution Imaging Observations of OV−236

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

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(5) Proposal Abstract :

OV−236 exhibits variability at all the observed frequencies, but has a simple continuum spectral shape with two synchrotron components (one becomes self-absorbed at 3 mm (the mm-component), one at 3 cm (the cm-component)). VSOP observations, with its high resolution at cm wavelengths, provide a best tool for the investigation of the cm-component. Three experiments are proposed: single observations of OV−236 at each of three frequencies. We expect to obtain the spectrum and to derive the distributions of relativistic electrons and magnetic field. We also want to study the fine structure within the curved superluminal jet. In addition, 22 GHz VSOP data will be vital to explain 43 GHz ground VLBI results to facilitate a better understanding of the mm-component. Since OV−236 is strong and compact enough, we require few or no large ground antennas. We suggest a specific ground array for scheduler's reference only.

(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	OV−236	OV−236	OV−236	
RA (hh mm ss.s)	19 24 50.977	19 24 50.977	19 24 50.977	
Dec (dd mm ss)	−29 14 29.81	−29 14 29.81	−29 14 29.81	
J2000 or B1950?	J2000	J2000	J2000	
Observing frequency band (GHz)	5	22	1.6	
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)	17.1	17.3	8.0	
Measured correlated flux density on > 5000 km baseline (Jy)	10.2	16.1	2.2	
Image RMS needed (mJy/beam)	50	100	50	
Ground Radio Telescopes:				
Preferred choice:				
Number of medium telescopes	5	3	4	
Number of large telescopes	1	1	2	
Suggested array given at Item (14)	☑	☑	☑	☐
Minimum acceptable:				
Number of medium telescopes	4	3	4	
Number of large telescopes	0	0	0	
Suggested array given at Item (14)	☑	☑	☑	☐
Length of observation:				
Preferred length (orbits)	4	4	4	
Minimum acceptable length (orbits)	3	3	3	
Scheduling constraints:				
Preferred P.A. of beam *major* axis (deg)		−40		
'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				
Mean interval (days)				
Acceptable variance from mean (days)				

(14) Additional notes to the scheduler :

Exp 1, Pref Array = SG, HT, HO, MR, Perth and PA or CG
Exp 1, Min Acc Array = SG, HT, HO and MR

Exp 2, Pref Array = SG, HO, PA and TI or CG
Exp 2, Min Acc Array = SG, HO and PA

Exp 3, Pref Array = SG, HT, HO, MR, CG and PA or TI
Exp 3, Min Acc Array = SG, HT, HO and MR
Exp 3, 1.6 GHz correlated flux density of OV−236 is unknown - value given is at 2.3 GHz.

(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