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 : 10.10.1995

(2) Proposal title : VSOP Observations of 3C216 and 3C446

(3)	INVESTIGATORS	INSTITUTION
P.I.	I. Fejes	FÖMI SGO, Hungary
co-I.	R.W. Porcas	MPIfR, Germany
co-I.	R.T. Schilizzi, H.S. Sanghera	JIVE, The Netherlands
co-I.	T. Venturi	IRA, Italy
co-I.	S. Frey, B. Kakucs, Zs. Paragi	FÖMI SGO, Hungary
co-I.		
co-I.		
co-I.		
co-I.		

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

Name : Dr. Istvan Fejes
Address : FÖMI Satellite Geodetic Observatory
: Pf. 546
: H-1373 BUDAPEST
: Hungary
Internet : fejes@novell.sgo.fomi.hu
Other e-mail :
Fax : (+36) 27 310 982
Telephone : (+36) 27 310 980

(5) Proposal Abstract :

Despite their different classifications, 3C216 and 3C446 exhibit several striking similarities (e.g. CSS characteristics, superluminal motion, extreme misalignment of mas and the more extended structure, sudden as well as smooth curvature of the jets etc.) Questions remain as to the nature of the basic mechanism of the inner structural evolution concerned. VSOP space VLBI observations at 1.6, 5, and 22 GHz are requested to image these sources on the scales from 0.2 mas to 15 mas. Basic questions which we would like to clarify by these observations are: Is 3C446 a more distant "relative" of CSS sources? What are the similarities in the core-jet relation of these sources and what are the differences, particularly, close to the core? What are the spectral properties? Is there evidence of interaction with a dense interstellar medium on this scale, or can the curved jet structure be explained by precession?

(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: 6

	Experiment 1	Experiment 2	Experiment 3	Experiment 4
Source name	3C216	3C446	3C216	3C446
RA (hh mm ss.s)	09 07 08	22 25 47.3	09 07 08	22 25 47.3
Dec (dd mm ss)	42 02 49	-04 57 01	42 02 49	-04 57 01
J2000 or B1950?	J2000	J2000	J2000	J2000
Observing frequency band (GHz)	1.6	1.6	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)	3.7	6.5	1.6	5
Measured correlated flux density				
on > 5000 km baseline (Jy)	1	1	0.6	2.16
Image RMS needed (mJy/beam)	0.5	0.7	0.5	0.7
Ground Radio Telescopes:				
Preferred choice:				
Number of medium telescopes	6	6	6	6
Number of large telescopes	2	2	2	2
Suggested array given at Item (14)	☐	☐	☐	☐
Minimum acceptable:				
Number of medium telescopes	3	3	3	3
Number of large telescopes	1	1	1	1
Suggested array given at Item (14)	☐	☐	☐	☐
Length of observation:				
Preferred length (orbits)	4	4	4	4
Minimum acceptable length (orbits)	2	2	2	2
Scheduling constraints:				
Preferred P.A. of beam *major* axis (deg)		10		10
'No holes' (u,v) coverage?	☑	☐	☑	☐
Or maximum resolution (u,v) coverage?	☐	☐	☐	☐
Preferred range of dates for scheduling				
(for monitoring experiments give	to	to	to	to
range for 1st observation only)				
For monitoring programs:				
Number of observations				
Mean interval (days)				
Acceptable variance from mean (days)				

	Experiment 5	Experiment 6	Experiment 7	Experiment 8
Source name	3C216	3C446		
RA (hh mm ss.s)	09 07 08	22 25 47.3		
Dec (dd mm ss)	42 02 49	-04 57 01		
J2000 or B1950?	J2000	J2000		
Observing frequency band (GHz)	22	22		
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)	0.73	3.64		
Measured correlated flux density on > 5000 km baseline (Jy)	0.12	2.18		
Image RMS needed (mJy/beam)	0.5	0.7		
Ground Radio Telescopes:				
Preferred choice:				
Number of medium telescopes	6	6		
Number of large telescopes	2	2		
Suggested array given at Item (14)	☐	☐	☐	☐
Minimum acceptable:				
Number of medium telescopes	3	3		
Number of large telescopes	1	1		
Suggested array given at Item (14)	☐	☐	☐	☐
Length of observation:				
Preferred length (orbits)	4	4		
Minimum acceptable length (orbits)	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				
Mean interval (days)				
Acceptable variance from mean (days)				

(14) Additional notes to the scheduler :

5th experiment correlated flux at 5000 km baseline was estimated according to the formula given in the user guide assuming a Gaussian core FWHM of 0.4 mas. This, we consider as a very conservative estimate (see scientific justification).

(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