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-Nov-1995

(2) Proposal title : Monitoring of the BL Lac object OJ287

(3)	INVESTIGATORS	INSTITUTION
P.I.	Patrick Charlot	Paris Observatory, France
co-I.	Hélène Sol	Meudon Observatory, France
co-I.	Lourdes Vicente	Meudon Observatory, France
co-I.		
co-I.		
co-I.		
co-I.		
co-I.		
co-I.		

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

Name : P. Charlot
Address : Observatoire de Paris
: 61 Avenue de l'Observatoire,
: 75014 Paris,
: France

Internet : charlot@obspm.fr
Other e-mail :
Fax : +33-1-40512291
Telephone : +33-1-40512230

(5) Proposal Abstract :

Our proposal consists in a monitoring program of observations of the BL Lac object OJ287 at 5 GHz (experiment 1), supplemented by a single-epoch multi-frequency observation of OJ287 (experiments 2 and 3). The major goal of the monitoring observations is to confirm the helical path of the jet which we suspect based on intensive monitoring with 8.4 GHz geodetic VLBI data. The multi-frequency observation is designed to determine the spectral index along the jet. The 22 GHz experiment, by providing a resolution of 50 μas, can also serve to estimate an upper limit or measure the jet radius. Our experiments require only few large telescopes since the source is strong enough. The suggested ground VLBI network is given in (14).

(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	OJ287	OJ287	OJ287	
RA (hh mm ss.s)	08 54 48.9	08 54 48.9	08 54 48.9	
Dec (dd mm ss)	20 06 31	20 06 31	20 06 31	
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)	1.8	2.8	2.2	
Measured correlated flux density on > 5000 km baseline (Jy)	1.0	0.8	1.2	
Image RMS needed (mJy/beam)	1	2	1	
Ground Radio Telescopes:				
Preferred choice:				
Number of medium telescopes	17	16	16	
Number of large telescopes	2	3	3	
Suggested array given at Item (14)	☑	☑	☑	☐
Minimum acceptable:				
Number of medium telescopes	4	4	4	
Number of large telescopes	1	1	1	
Suggested array given at Item (14)	☐	☐	☐	☐
Length of observation:				
Preferred length (orbits)	4	4	4	
Minimum acceptable length (orbits)	2	2	2	
Scheduling constraints:				
Preferred P.A. of beam *major* axis (deg)	−10	−10	−10	
'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)	97-01-15 to 97-02-15	98-01-15 to 98-02-15	98-01-15 to 98-02-15	to
For monitoring programs:				
Number of observations	5			
Mean interval (days)	90			
Acceptable variance from mean (days)	15			

(14) Additional notes to the scheduler :

Exp 1, Pref Array = VLBA + EF, MC, NO, ON, SG, UR (EVN) + KA, HT, US (other),
Suggested epochs of observations: 97-02-01, 97-05-01, 97-11-01, 98-02-01, 98-05-01.

Exp 2, Pref Array = same as for Exp 1 but UD and HT replaced by NB and TI,
Suggested epoch of observations: 98-02-01.

Exp 3, Pref Array = same as for Exp 1 but MC replaced by TI,
Suggested epoch of observations: 98-02-01.

OJ287 not observable between 97-05-21 and 97-10-14.

(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