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 : 17-nov-95

(2) Proposal title : Determining the Emission mechanism of the OVV Quasar 3C279

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

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(5) Proposal Abstract :

We propose to make three-epoch observations of the OVV quasar 3C279 at 5 and 22 GHz, plus one 1.6 GHz observation, in conjunction with observations across the electro-magnetic spectrum. By the high resolution, high dynamic range, circular beam images from VSOP, we can have fine morphological structures of the core to jet structure for the first time with spectral-index information. There is six months of good u-v coverage during the first AO period, and our three observations spaced in 3 months during this time will enable the time variation of the most compact components of the source to be examined. Jet collimation, jet flow, jet precession, and the question of the counter-jet existence are among the key questions we will be answering with these observations. Combined observations from radio through to X and gamma-ray regions will be organized to have the time and spectral information necessary to test the SSC model.

(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	3C279	3C279	3C279	
RA (hh mm ss.s)	12 53 35.8	12 53 35.8	12 53 35.8	
Dec (dd mm ss)	-05 31 08	-05 31 08	-05 31 08	
J2000 or B1950?	B1950	B1950	B1950	
Observing frequency band (GHz)	1.6	5	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)	12.	14.	10.	
Measured correlated flux density on > 5000 km baseline (Jy)	8.	9.	7.	
Image RMS needed (mJy/beam)	1.	1.	1.	
Ground Radio Telescopes:				
Preferred choice:				
Number of medium telescopes	7	7	7	
Number of large telescopes	1	1	1	
Suggested array given at Item (14)	☑	☑	☑	☐
Minimum acceptable:				
Number of medium telescopes	5	5	5	
Number of large telescopes	0	0	0	
Suggested array given at Item (14)	☐	☐	☐	☐
Length of observation:				
Preferred length (orbits)	3	3	3	
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)	98-04-10 to 98-04-20	98-01-15 to 98-07-15	98-01-15 to 98-07-15	to
For monitoring programs:				
Number of observations		3	3	
Mean interval (days)		90	90	
Acceptable variance from mean (days)		10	10	

(14) Additional notes to the scheduler :

Adding one or, preferably, two telescopes from the south is important for the (u,v) coverage: e.g. the phased ATCA and Parkes or Tid or Hobart. The observations at each epoch will be hopefully made within 10 days. We would like to coordinate observations combined with ASCA X-ray satellite. Even though we would try ASCA observation to fit to VSOP observations, but we may ask trade-off of the date. In case, 3C279 flares up, we might ask to change the observing date, because this is an extremely interesting event. Or, we may ask Target of Opportunity observation, depending on the situation.

(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