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 : Investigation of the rapid structural variability in quasar CTA102

(3)	INVESTIGATORS	INSTITUTION
P.I.	Fredrik T. Rantakyrö	IRA-CNR, Bologna, Italy/ JIVE
co-I.	L.B., Bååth	CBD, Halmstad University, Sweden
co-I.	D.L., Jones	JPL, USA
co-I.	A.E., Wehrle	IPAC, JPL, Caltech, USA
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(4) Principal Investigator (or contact person) details...

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(5) Proposal Abstract :

With VSOP we will be able to obtain accurate measurement of the brightness temperatures, size and morphological changes, and proper motion of the components as they move down the jet. Combined with several epochs of mmVLBI, γ-ray, and x-ray observations we gain further understanding not only of the bending of the jet in the plane of the sky but also in the third dimension, how the physical parameters of the plasma in the jet and in the surrounding medium such as the electron density and magnetic field varies with distance from core, thus giving vital information to our understanding of the physical mechanisms that creates, accelerates, and collimates the plasma jet in active galactic nuclei.

(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	CTA102	CTA102		
RA (hh mm ss.s)	22 32 36.40937	22 32 36.40937		
Dec (dd mm ss)	+11 43 50.9024	+11 43 50.9024		
J2000 or B1950?	J2000	J2000		
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)	1.5-4 (variable)	4-5 (variable)		
Measured correlated flux density on > 5000 km baseline (Jy)	0.5-1.0	0.9-1.5		
Image RMS needed (mJy/beam)	5	5		
Ground Radio Telescopes:				
Preferred choice:				
Number of medium telescopes	9	9		
Number of large telescopes	1	1		
Suggested array given at Item (14)	☐	☐	☐	☐
Minimum acceptable:				
Number of medium telescopes	6	6		
Number of large telescopes				
Suggested array given at Item (14)	☐	☐	☐	☐
Length of observation:				
Preferred length (orbits)	3	3		
Minimum acceptable length (orbits)	2	2		
Scheduling constraints:				
Preferred P.A. of beam *major* axis (deg)	90	90		
'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	2	2		
Mean interval (days)	240	360		
Acceptable variance from mean (days)	60	120		

(14) Additional notes to the scheduler :

(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