VSOP AO2 PROPOSAL COVER SHEETS

DEADLINE : 8 May, 1998
SEND TO : VSOG, ISAS, 3-1-1 Yoshinodai, Sagamihara, Kanagawa 229-8510, JAPAN

Please read Appendix C of Announcement of Opportunity for details on how to fill in this Cover Sheet.

(1) Date prepared : May 01 1998

(2) Proposal title : Imaging the sub–parsec scale jets of NGC 1052.

(3)	INVESTIGATORS	INSTITUTION
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(5) Proposal Abstract :

We propose 1.6 and 5 GHz VSOP observations of the two–sided jets in the nearby ($z = 0.0049$) elliptical galaxy NGC 1052. The main goals of the proposed observations are: 1) to study the morphology of the curved jets on scales of <100 light days, 2) to probe at high resolution the free–free absorbing region detected around the nucleus, and 3) to determine the opacity variations and pressure gradients along the jet, and to measure the density and temperature of the plasma in the nuclear region of NGC 1052. The proposed observations will be complemented by the data from continued multi–frequency VLBA observations of NGC 1052 at higher frequencies. The enhanced resolution of VSOP images plays a key role in the study of the free–free absorption where VSOP data provide resolution necessary for reliable measurements.

(6) Proposal Category (indicate all that apply):

Object type:
☑ AGN, ☐ Maser, ☐ Stellar, ☐ Pulsar, ☐ Other :

Observation type:
☑ Continuum, ☐ Spectral Line, ☐ Polarization, ☐ Time-critical, ☐ Other :

(7) Number of proposed experiments

An 'experiment' is one or more observations of one source at a fixed HALCA set-up. A request to observe the same source at 1.6 GHz and separately at 5 GHz requires two columns to be filled in in item (8) below. A request to observe the same source with HALCA simultaneously observing at 1.6 GHz and 5 GHz requires one column to be filled in. Multi-epoch observations of the same source at the same frequency – a 'monitoring experiment' – requires only one column to be filled in. Suggested observing dates, especially for for time-critical and monitoring experiments, should be specified in item (10).

The number of experiments in this proposal is: 2

(8) Details of proposed experiments

	Experiment 1	Experiment 2	Experiment 3	Experiment 4
Source name (J*hhmm*±*ddmm*)	J0241-0815	J0241-0815		
Alternative name	NGC 1052	NGC 1052		
RA(J2000) (hh mm ss.ssss)	02 41 04.7984	02 41 04.7984		
Dec(J2000) (dd mm ss.ssss)	−08 15 20.750	−08 15 20.750		
Observing frequency band (GHz)	1.6	5.0		
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)				
FWHM of field of view required (mas)				
Min. spectral channels per IF channel				
Correlator averaging time (sec)				
No. of correlating passes (if >1)				
Total flux density (Jy)	0.8	3.2		
Correlated flux (mJy)	400	800		
Ground Radio Telescopes:				
Suggested array given at Item (10)?	☑	☑	☐	☐
GRT observing mode:				
128Mbps LCP (standard)	☑	☑	☐	☐
128Mbps LCP/RCP	☐	☐	☐	☐
256Mbps LCP/RCP	☐	☐	☐	☐
Preferred correlator:				
No preference	☐	☐	☐	☐
Mitaka	☐	☐	☐	☐
Penticton	☐	☐	☐	☐
Socorro	☑	☑	☐	☐
Monitoring programs:				
Number of observations				
Mean interval (days)				
Related AO1 proposal code(s)				

(9) 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),

☐ Other:

Phase calibration tones:

☑ On (Standard continuum mode),

☐ Off (Standard spectral line mode)

(Include justification of any non-standard choice at (10) below)

(10) Additional notes to the scheduler :

Preferred array: VLBA, EB, GB — with Effelsberg and Green Bank added to facilitate fringe fitting.
Preferred time allocations during the AO2 period: Jan 05–Feb 05 and Jul 20–Aug 15, 1999. We however note that a *uv*–coverage most suitable for the purpose of matching the resolutions of the ground and space VLBI data is achieved on Oct 1–10, 1998 (respective *uv*–coverage plots are attached to the scientific justification).

(11) 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 229-8510 JAPAN

In addition, e-mail the completed LaTeX file to submit@vsop.isas.ac.jp

Information from the Cover Sheets of scheduled proposals will be made available from the VSOP WWW site.

Proposals must be received at ISAS by 8 May 1998