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 : 1998, April 24

(2) Proposal title : High Linear Resolution Imaging of $z < 0.06$ Sources

(3)	INVESTIGATORS	INSTITUTION
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(5) Proposal Abstract :

We have compiled a sample of the closest extragalactic objects in the Southern hemisphere ($|b| > 10°$) within a redshift of $z < 0.06$, and containing compact radio components suitable for imaging with VSOP.

VSOP imaging of nearby active galaxies at 5GHz will return the highest linear resolution possible with the mission.

The list comprises a diversity of source types, including GHz-Peaked-Spectrum (GPS), FR-I, FR-II, BL Lac and γ-ray sources. Observations with VSOP at 5GHz will give linear resolution of 0.3pc or better on all objects in the sample - matching or improving existing observations of these objects in any waveband. We propose repeat observations at an interval of approximately six months to detect any structural evolution.

(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: 6

(8) Details of proposed experiments

	Experiment 1	Experiment 2	Experiment 3	Experiment 4
Source name (J*hhmm*±*ddmm*)	J0519-4546	J0522-3627	J1325-4301	J1517-2422
Alternative name	Pictor A		Centaurus A	AP Libræ
RA(J2000) (hh mm ss.ssss)	05 19 49.75	05 22 57.985	13 25 27.620	15 17 41.814
Dec(J2000) (dd mm ss.ssss)	-45 46 43.800	-36 27 30.850	-43 01 08.800	-24 22 19.473
Observing frequency band (GHz)	5	5	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) FWHM of field of view required (mas)				
Min. spectral channels per IF channel	128	128	128	128
Correlator averaging time (sec)				
No. of correlating passes (if >1)				
Total flux density (Jy)	15.5	9.3	681	3.0
Correlated flux (mJy)	1100	1200	5500	2200
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)	 2 $\sim$200	 2 $\sim$200	 2 $\sim$200	 2 $\sim$200
Related AO1 proposal code(s)	V112	V112		

	Experiment 5	Experiment 6	Experiment 7	Experiment 8
Source name (J*hhmm*±*ddmm*)	J1723-6500	J2157-6941		
Alternative name	NGC 6328			
RA(J2000) (hh mm ss.ssss)	17 23 41.029	21 57 06.129		
Dec(J2000) (dd mm ss.ssss)	-65 00 36.610	-69 41 24.52		
Observing frequency band (GHz)	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)				
FWHM of field of view required (mas)				
Min. spectral channels per IF channel	128	128		
Correlator averaging time (sec)				
No. of correlating passes (if >1)				
Total flux density (Jy)	3.8	12.3		
Correlated flux (mJy)	3800	1200		
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	2	2		
Mean interval (days)	~200	~200		
Related AO1 proposal code(s)	V101	V112		

(9) VSOP spacecraft observing mode (see Section 3 and Table 5 of the VSOP Proposer's Guide):

- [x] 2 channel x 16 MHz, 2-bit (Standard mode),
- [ ] Other:

Phase calibration tones:

- [x] 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 :

We request an array of Southern Hemisphere telescopes consisting of the ATCA, Mopra, Hobart, Hartebeestoek, and Ceduna for those sources south of $\delta = -45°$. For all other sources, we request a combination of two arrays, the VLBA and the Southern Hemisphere array given above. For these combined experiments, if the volume of tape copying required for processing at a single correlator is too great, we request that the separate components of the experiments be correleted on separate correlators.

(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