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 5th, 1998

(2) Proposal title : Proper Motion in a Closely-Spaced Quasar Pair: 1342+662/1342+663

(3)	INVESTIGATORS	INSTITUTION
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(5) Proposal Abstract :

Space-VLBI can provide immediate improvements on the ground-based astrometry of closely-spaced radio sources. The intrinsic resolution that VSOP brings to the radio maps offers the possibility to combine high-resolution maps with high-precision astrometry, producing a three-to-fourfold improvement in the relative position determination. We propose VSOP+VLBA 5 GHz observations of the closely-spaced quasar pair 1342+662/1342+663. The combination of this epoch with a previous VSOP observation will put a 10 microarcseconds/yr bound on the relative proper motion of this pair. With a third observation, this bound will be set at the *submicroarcsecond* level, a precision unattainable from ground-only observations. Knowledge of VSOP capabilities in astrometry is key to use this technique later in the mission and in future space VLBI missions.

(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: 1 (see item (10))

(8) Details of proposed experiments

	Experiment 1	Experiment 2	Experiment 3	Experiment 4
Source name (J*hhmm*±*ddmm*)	J1343+6602	J1344+6606		
Alternative name				
RA(J2000) (hh mm ss.ssss)	13:43:45.9576	13:44:08.6791		
Dec(J2000) (dd mm ss.ssss)	66:02:25.749	66:06:11.649		
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				
Correlator averaging time (sec)				
No. of correlating passes (if >1)				
Total flux density (Jy)	0.30	0.60		
Correlated flux (mJy)	0.28	0.55		
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)	v032a	v032a		

(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 :

PHASE-REFRENCED OBSERVATIONS

Exp. 1 and Exp. 2 correspond to a single observations. Both source lie within the primary beam of VSOP and VLBA antennas. Preferred GRT's: VLBA

The coordinates to be used in the schedule are the mid point of the position of the two sources: RA=13:43:57.32 DEC=66:04:31.5 (J2000)

Two correlator passes are necessary (one for each source) using the positions specified in item (8)

(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