VSOP AO2 PROPOSAL COVER SHEETS

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

(1) Date prepared : 4th MAY 1998

(2) Proposal title : Second epoch Space-VLBI astrometry on the quasars 1038+52A,B

(3)	INVESTIGATORS	INSTITUTION
P.I.	M.J.Rioja	Istituto di Radioastronomia, Bologna, ITALY
co-I.	R.W.Porcas	MPIfR, Bonn, GERMANY
co-I.		
co-I.		
co-I.		
co-I.		
co-I.		
co-I.		
co-I.		

(4) Principal Investigator (or contact person) details...

Name : Maria Rioja
E-mail : rioja@ira.bo.cnr.it
Fax : 39 51-639 9431
Phone : 39 51-639 9383

Address : Istituto di Radioastronomia,
: Via P. Gobetti 101
: I-40129 Bologna
: ITALY
:

(5) Proposal Abstract :

The pair of quasars 1038+528 A and B, separated by 33", has been monitored for nearly 15 years with dual frequency ground-VLBI. Although their small separation permits precise relative astrometry at the μas level, an interpretation of changes in terms of time and frequency variations in source structure is limited by the interferometer beam size. Space VLBI offers a unique chance to improve the map resolution and allow a more precise interpretation of these variations, and we have succeeded in producing a VSOP phase referenced map of quasar B from 1.6 GHz observations in Nov 1997. We now propose second epoch observations at 1.6 and 5 GHz. Although orbit uncertainties prevent us improving on ground VLBI astrometric precisions, we hope to map any source structure changes at both frequencies, and to detect any change or "jitter" in the A and B source positions at 1.6 and 5 GHz using Space-VLBI relative astrometry.

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

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

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

(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*)	J1041+5233	J1041+5233		
Alternative name				
RA(J2000) (hh mm ss.ssss)	10 41 47.800	10 41 47.800		
Dec(J2000) (dd mm ss.ssss)	52 33 41.0	52 33 41.0		
Observing frequency band (GHz)	1.6	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)	2	2		
Total flux density (Jy)	0.5	0.4		
Correlated flux (mJy)	350	300		
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)	V046	V046		

(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 :

Our strongly preferred array is the VLBA + Eb (+Ro and Go at 1.6 GHz) because the source is relatively weak, and we wish to make use of the gaps in tracking station coverage of VSOP to observe with the VLBA in "snapshot" mode at S/X .

Experiment 1 (1.6 GHz): VLBA + Eb + Ro + Go
Experiment 2 (5 GHz) : VLBA + Eb
Please note that 2 correlation passes are needed for each experiment - one at each of the A and B quasar positions. The position provided is the mid-point between the quasars which should be used for observing.

(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