VSOP AO4 PROPOSAL COVER SHEETS

DEADLINE : 2 October, 2000
SEND TO : VSOG, ISAS, 3-1-1 Yoshinodai, Sagamihara, Kanagawa 229-8510, JAPAN

(1) Date prepared : 9/29/00

(2) Proposal title : High Fidelity VSOP Imaging of GPS Sources

(3)	INVESTIGATORS	INSTITUTION
P.I.	M. L. Lister	JPL, USA
co-I.	D. W. Murphy	JPL, USA
co-I.	R. A. Preston	JPL, USA
co-I.		
co-I.		
co-I.		
co-I.		
co-I.		
co-I.		

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

Name : M. L. Lister
E-mail : lister@sgra.jpl.nasa.gov
Fax : 1-818-393-6890
Phone : 1-818-354-4909

Address : JPL
: MS 238-332
: 4800 Oak Grove Drive
: Pasadena, CA 91106
: USA

(5) Proposal Abstract :

We propose to conduct a high fidelity VSOP imaging survey by combining observations from at least two well-separated epochs. During this interval HALCA's orbit will have precessed sufficiently such that the combined datasets will have unprecedented (u,v) coverage. Our images will therefore not suffer from the large on-source errors found in most space-VLBI images that have large holes in the (u,v) plane. Our sample consists of four Gigahertz-Peaked Spectrum (GPS) sources in the Pearson-Readhead sample whose structure and flux densities are exceptionally stable, making them ideal targets for this technique. These high fidelity images will lead to a better understanding of jet bending on small scales in these powerful AGNs, and will likely be an important legacy of the VSOP project.

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

Object type:

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

Observation type:

☑ Continuum, ☐ Spectral Line, ☐ Polarization, ☐ Time critical,
☐ Phase-reference, ☐ 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 (11).

The number of experiments in this proposal is: 4

(8) Details of proposed experiments

	Experiment 1	Experiment 2	Experiment 3	Experiment 4
Source name (J*hhmm*±*ddmm*)	J0111+3906	J0411+7657	J2022+6137	J2344+8227
Alternative name	0108+388	0404+769	2021+614	2342+821
RA(J2000) (hh mm ss.ssss)	01h11m37.3169s	04h10m45.51s	20h22m06.6816s	23h44m03.698s
Dec(J2000) (dd mm ss.sss)	+39d06m28.104s	+76d56m44.5s	+61d36m58.804s	+82d26m40.47s
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				
Correlator averaging time (sec)				
No. of correlating passes (if >1)				
Total flux density (Jy)				
Correlated flux (mJy)				
Ground Radio Telescopes:				
Suggested array given at Item (11)?	☑	☑	☑	☑
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	4	2
Mean interval (days)	180	180	90	180
Related VSOP proposal code(s)			V030	

(9) VSOP spacecraft observing mode (see Section 3 and Table 2 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 (11) below)

(10) Assistance with preparation of ground telescope schedule files:

[ ] VSOG assistance requested, [x] Consultation desired, [ ] No assistance required

(11) Additional notes to the scheduler :

In order to maximize (u,v) coverage, we request our observations of 0108+388, 0404+769, and 2342+821 be scheduled six months apart, with the VLBA as the ground array. For the case of 2021+614, which is close to the ecliptic pole, we request 4 well-spaced observations during 2001 also with the VLBA. Possible observation dates are in Jan, May, Jul, and Nov 2001. Interaction between the PI and the VSOP scheduler would be useful for choosing optimum observing epochs.

(12) Attach a scientific and technical justification, not in excess of 2 pages of text and 2 pages of figures. Refer to the VSOP Announcement of Opportunity for detailed instructions. Preprints and reprints will not be forwarded to the Scientific Review Committee.

EITHER e-mail the completed LaTeX file to submit@vsop.isas.ac.jp and 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

OR e-mail the completed LaTeX Cover Sheets file and, in a separate e-mail, the postscript file of the scientific and technical justification, 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 2 October 2000