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 : 3-May-1998

(2) Proposal title : Imaging of Strong GPS Sources

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(5) Proposal Abstract :

We propose high resolution imaging of six strong GPS sources with compact double structure. Space-ground baselines are needed to achieve the resolution to accurately measure component sizes *at the frequency of the spectral peak*, an essential requirement in distinguishing between free-free and synchrotron self absorption mechanisms. Many of the components of these sources are only just beginning to show signs of any internal structure on the longest Earth-only baselines and space VLBI presents the only possible opportunity to examine their structure at the frequency of the peak in any detail.

(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*)	J1939-6342	J0024-4202	J0240-2309	J1723-6500
Alternative name	PKS 1934-638	PKS 0022-423	PKS 0237-233	PKS 1718-649
RA(J2000) (hh mm ss.ssss)	19 39 25.026	00 24 42.990	02 40 08.1747	17 23 41.029
Dec(J2000) (dd mm ss.ssss)	-63 42 45.63	-42 02 03.95	-23 09 15.736	-65 00 36.61
Observing frequency band (GHz)	1.6	1.6	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	128	128	128	128
Correlator averaging time (sec)				
No. of correlating passes (if >1)				
Total flux density (Jy)	15.6	3.5	7.2	3.8
Correlated flux (mJy)	800	500	1200	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)	V101	V101	V101	V101

	Experiment 5	Experiment 6	Experiment 7	Experiment 8
Source name (J*hhmm*±*ddmm*)	J1130-1449	J2136+0041		
Alternative name	PKS 1127-145	PKS 2134+004		
RA(J2000) (hh mm ss.ssss)	11 30 07.0524	21 36 38.5866		
Dec(J2000) (dd mm ss.ssss)	-14 49 27.386	+00 41 54.217		
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	128	128		
Correlator averaging time (sec)				
No. of correlating passes (if >1)				
Total flux density (Jy)	7.4	10.7		
Correlated flux (mJy)	1500	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)	V101	V101		

(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 :

For sources *south* **of** $\delta - 25°$**:**
Preferred ground array: ATCA, Mopra, Hobart, Tidbinbilla, Hartebeesthoek, + Ceduna(5GHz only)
For sources *north* **of** $\delta - 25°$**:**
Preferred ground array: As above + VLBA, Goldstone(1.6GHz only), Shanghai, Usuda.
If the translation VLBA/S2 is not feasible, separate VLBA and S2 correlations are requested and the two datasets will be combined later with the loss of the transcontinental baselines. To allievate this we request parallel VLBA & S2 recording in as many stations as practicable.

(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