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 : 01-May-1998

(2) Proposal title : A morphological and spectral study of GPS galaxies and quasars.

(3)	INVESTIGATORS	INSTITUTION
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(5) Proposal Abstract :

Sources with peaked radio spectra, the Compact Steep Spectrum (CSS) and Gigahertz Peaked Spectrum (GPS) sources, are almost certainly young objects, and therefore ideal for use in the study of the initial evolution of extragalactic radio sources. We are studying faint GPS and CSS sources and comparing the results with their bright counterparts to disentangle redshift and radio power effects. It is clearly of interest to examine these sources at a number of points along their evolutionary track using radio data with a range of angular resolution, limiting flux density and observing frequency. As a part of this programme, we were granted observing time with VSOP at 5 GHz for a 'mini-survey' sample of 11 GPS sources (v085), and recently also 15 GHz observations with the VLBA and Effelsberg to obtain matched-beam spectral index information on the individual components in these objects. We now request 1.6 GHz observations of 8 of the sources with VSOP/HALCA which we will combine with ground-based matched-beam images at 5 GHz and convolved 15 GHz images to determine the spectra of optically thin and thick components and so derive the magnetic field strength in individual components.

(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: 8

(8) Details of proposed experiments

	Experiment 1	Experiment 2	Experiment 3	Experiment 4
Source name (J*hhmm*±*ddmm*)	J0111+3906	J0251+4315	J0555+3948	J0626+8202
Alternative name	0108+388	0248+430	0552+398	0615+820
RA(J2000) (hh mm ss.ssss)	01 11 37.26	02 51 34.55	05 55 30.80	06 26 02.99
Dec(J2000) (dd mm ss.ssss)	+39 06 27.4	+43 15 15.9	+39 48 49.2	+82 02 25.1
Observing frequency band (GHz)	1.6	1.6	1.6	1.6
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)	10	20	10	10
Min. spectral channels per IF channel				
Correlator averaging time (sec)	20	20	20	20
No. of correlating passes (if >1)				
Total flux density (Jy)	0.44	0.83	1.75	0.78
Correlated flux (mJy)	400	800	1500	500
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)	v085a	v085c1, v085c2	v085e	v085g

	Experiment 5	Experiment 6	Experiment 7	Experiment 8
Source name (J*hhmm*±*ddmm*)	J0650+6001	J1335+4542	J1407+2827	J2022+6136
Alternative name	0646+600	1333+459	1404+286	2021+614
RA(J2000) (hh mm ss.ssss)	06 50 31.25	13 35 21.95	14 07 00.4	20 22 06.65
Dec(J2000) (dd mm ss.ssss)	+60 01 44.6	+45 42 38.7	+28 27 14.6	+61 36 58.8
Observing frequency band (GHz)	1.6	1.6	1.6	1.6
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)	10	10	10	20
Min. spectral channels per IF channel				
Correlator averaging time (sec)	20	20	20	20
No. of correlating passes (if >1)				
Total flux density (Jy)	0.44	0.35	0.83	2.1
Correlated flux (mJy)	400	330	700	2000
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)	v085k	v085o	v085q	v085m (vt906)

(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 :

1) We prefer to have a global array composed of the VLBA, 6 EVN stations including at least one large telescope, and one large telescope in the U.S.A. (17 stations).
2) For the weak sources (0108+388, 0646+600, and 1333+459) we request 4 large telescopes in the array.
3) The number of telescopes is more important than the position angle of the synthesized beam.

(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