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 8, 1998

(2) Proposal title : What causes the turnover spectrum in GPS sources ?

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:

(5) Proposal Abstract :

GHz-Peaked Spectrum (GPS) sources have convex spectra with the peak frequency in GHz range. Turnover spectrum in GPS source is considered to be due to synchrotron self absorption or free-free absorption. Recently, our VSOP observation of a GPS source, OQ208, showed asymmetric absorption towards double lobes of OQ208. This result suggests free-free absorption external plasma existing around the source. We propose VSOP observations at 1.6 and 5 GHz of the nearest GPS source NGC 1052 to confirm whether free-free absorption is common characteristic in GPS sources or not. For this study, it is neccesary to observe optically thick part of the spectrum with enough high resolution, and only VSOP observations towards nearby GPS allow us to obtain high resolution images at 1.6 and 5 GHz.

(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:2

(8) Details of proposed experiments

	Experiment 1	Experiment 2	Experiment 3	Experiment 4
Source name (J*hhmm*±*ddmm*)	J0241-0815	J0241-0815		
Alternative name	NGC1052	NGC1052		
RA(J2000) (hh mm ss.ssss)	02 41 04.7984	02 41 04.7984		
Dec(J2000) (dd mm ss.ssss)	-08 15 20.750	-08 15 20.750		
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)	40	40		
Min. spectral channels per IF channel	32	32		
Correlator averaging time (sec)	2	2		
No. of correlating passes (if >1)				
Total flux density (Jy)	1	1		
Correlated flux (mJy)	700	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)				

(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 :

In order to detect weak component due to absorption, we request VLBA and large telescopes in north and south hemispheres, phased VLA, Usuda, ATCA and Mopra.
The priod which we can get good uv-coverage is from Jan. 9th to 31st in 1998.

(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