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 : 2 Oct 2000

(2) Proposal title : 5 GHz Observations of the Vela Pulsar

(3)	INVESTIGATORS	INSTITUTION
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(5) Proposal Abstract :

We propose 5 GHz observations of the Vela pulsar using the VSOP. With previously-made 1.6 GHz observations, these will clarify the dependence of the size of the pulsar's emission region on observing frequency. This dependence, and the structure of the emission region at the higher frequency, will provide important information on pulsar emission mechanisms.

(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: 1

(8) Details of proposed experiments

	Experiment 1	Experiment 2	Experiment 3	Experiment 4
Source name (J*hhmm*±*ddmm*)	J0835-4510			
Alternative name				
RA(J2000) (hh mm ss.ssss)	08 34 52.3561			
Dec(J2000) (dd mm ss.sss)	-45 05 26.008			
Observing frequency band (GHz)	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	2048			
Correlator averaging time (sec)	2			
No. of correlating passes (if >1)				
Total flux density (Jy)	0.3			
Correlated flux (mJy)	300			
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 Mean interval (days)				
Related VSOP proposal code(s)	v029			

(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:

- [ ] On (Standard continuum mode),
- [x] 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, ☑ Consultation desired, ☐ No assistance required

(11) Additional notes to the scheduler :

Flux density of 300 mJy is averaged over the pulse. Gating at Penticton will increase SNR by a factor of about 3.
We request the antennas: TI, HH, MO, and MK. We anticipate that baselines to TI will be the most useful. TI provides sensitivity,MO provides a short baseline for size measurement, and HH and MK will provide intermediate-length baselines useful for tracing changes in the distribution of visibility with baseline length.

(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