VSOP AO3 PROPOSAL COVER SHEETS

DEADLINE : 1 October, 1999
SEND TO : VSOG, ISAS, 3-1-1 Yoshinodai, Sagamihara, Kanagawa 229-8510, JAPAN

(1) Date prepared : 30 September, 1999

(2) Proposal title : VSOP observation of OH masers in Orion-KL

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(5) Proposal Abstract :

The Orion-KL region is one of the well-studied star forming region. It has all 3 major maser emisson, H_2O, OH and SiO. So this is important source to know about the outflow in this area, the emitting mechanisum of those maser lines, and the structure and the environment of IRc2 (source I), young stellar object.
It was believed that the OH emission from Orion is too extend to observe with space-baseline. We found that it is marginally possible to observe with VSOP, from the analysis of pre-launch operation test observation in 1996.
Therefore, we propose a observation to confirm the posibility of VSOP obseration, before submitting more complicate observations, such as polarization, multi-epoch observation.

(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 (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*)	Orion-A			
Alternative name	Orion-KL			
RA(J2000) (hh mm ss.ssss)	05 35 14.480			
Dec(J2000) (dd mm ss.ssss)	−05 22 29.771			
Observing frequency band (GHz)	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)	1612			
Ch.A LSR velocity (km/s)	0			
Ch.B spectral line rest freq. (MHz)	1666			
Ch.B LSR velocity (km/s)	0			
FWHM of field of view required (mas)	30000			
Min. spectral channels per IF channel	8192			
Correlator averaging time (sec)	1 sec			
No. of correlating passes (if >1)	2			
Total flux density (Jy)	9			
Correlated flux (mJy)	2100			
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)				

(9) VSOP spacecraft observing mode (see Section 3 and Table 5 of the VSOP Proposer's Guide):

☑ 2 channel x 16 MHz, 2-bit (Standard mode),

☐ Other:

Phase calibration tones:

☐ 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, ☑ Consultation desired, ☐ No assistance required

(11) Additional notes to the scheduler :

We required some GRT's with high sensitibity in both southern and northern hemispheres. We also required Mitaka correlator with the high specrtum resolution mode. So possible GRTs are TI, UD, Y, AT, with SH, HH, MK(if possible). We also want to have some correlation passes, in case there is some components are shown in the autocorrelation spectrum. We want to have some short baseline with overlapping ground baseline. So preferable period of observation is Feb-10 – Mar-10, 2000.

(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 1 October 1999