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 : Two-epoch VSOP Observations of PKS 0312-770

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(5) Proposal Abstract :

We propose two-epoch contemporaneous VSOP observations of PKS 0312−770 at 1.6 and 5.0 GHz. PKS 0312−770 is one of two quasars in the first targets of the Chandra X-ray Observatory. The other one (PKS 0637−752) has been seen for the first time a powerful X-ray jet. The similarities between two make PKS 0312−770 an ideal source for comparing and contrasting with PKS 0637−752. The proposed VSOP observations will produce the first high resolution images ever made at radio wavelengths which, when combined with Chandra observations, have the potential to provide insight into the important energy conversion process and help us to understand how these jets are formed, collimated, maintained and (if any) transferred. Since there is a strong correlation between radio core emission and X-ray emission, VSOP measurements of radio beaming parameters (such as the Doppler boosting factor etc) will be an excellent indication of the presence of a relativistically beamed X-ray component in these quasars.

(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: 2

(8) Details of proposed experiments

	Experiment 1	Experiment 2	Experiment 3	Experiment 4
Source name (J*hhmm*±*ddmm*)	J0311-7651	J0311-7651		
Alternative name	PKS 0312-770	PKS 0312-770		
RA(J2000) (hh mm ss.ssss)	03 11 55.2505	03 11 55.2505		
Dec(J2000) (dd mm ss.ssss)	-76 51 50.848	-76 51 50.848		
Observing frequency band (GHz)	5	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)				
Min. spectral channels per IF channel				
Correlator averaging time (sec)				
No. of correlating passes (if >1)				
Total flux density (Jy)	0.70	0.62		
Correlated flux (mJy)	240±20*	240±20*		
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	2	2		
Mean interval (days)	365	365		
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 :

* The estimated correlated flux density of 240±20 mJy was from the 2.3 GHz measurements on baselines of $\sim 10^4$ km (Preston et al. 1985)

Suggested preferred array: Phased ATCA, Ceduna (5 GHz only), Mopra, Hobart, Hartebeesthoek, Tidbinbilla (1.6 GHz only) and HALCA

Suggested minimum array: Phased ATCA, Hobart, Hartebeesthoek and HALCA

(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