# 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 October 2000

**(2)** Proposal title : Dual-Frequency VSOP Observations of PKS 1741−038

| **(3)** | INVESTIGATORS | INSTITUTION |
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**(5)** Proposal Abstract :

We propose dual-frequency observations of the gamma-ray loud quasar PKS 1741−038. Recently Zhou et al. (2000) revealed correlation between the radio flare and emergence of VLBI jet component in the gamma-ray loud blazar PKS 0420−014. Trichromatic light curves of PKS 1741−038 show that the source has the biggest flare near the middle of 1997, and also has large lags between individual light curves. We carried out two-epoch VSOP observations (first-epoch observation was done near the flare) and revealed that the source has brightness temperatures greater than $10^{12}$ K for all observing sessions. Then we can investigate following source properties at and after the flare; (1) verification for emergence of jet components with radio flares and proper motion measurement, (2) brightness temperature and Doppler factor variation measurements.

**(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: 2

**(8)** Details of proposed experiments

| | Experiment 1 | Experiment 2 | Experiment 3 | Experiment 4 |
|---|---|---|---|---|
| Source name (J*hhmm*±*ddmm*) | J1743−0350 | J1743−0350 | | |
| Alternative name | OT−68 | OT−68 | | |
| RA(J2000) (hh mm ss.ssss) | 17 43 58.8561 | 17 43 58.8561 | | |
| Dec(J2000) (dd mm ss.sss) | −03 50 04.616 | −03 50 04.616 | | |
| 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) | 3.85 | 1.82 | | |
| Correlated flux (mJy) | 950 | 650 | | |
| *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) | 180 | 180 | | |
| Related VSOP proposal code(s) | w083 | w083 | | |

**(9)** VSOP spacecraft observing mode (see Section 3 and Table 2 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 :

**(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**