

# VSOP AO2 PROPOSAL COVER SHEETS

DEADLINE : 8 May, 1998

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

(1) Date prepared : 4th May 1998

(2) Proposal title : Cores of Lobe-dominated Quasars with VSOP - Epoch 2

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

The study of the parsec-scale morphology and kinematics of quasars is central to the understanding of extragalactic radio source jet physics, and the classification of various types of objects. In the "unified schemes" the properties of sources should depend crucially upon the angle of a relativistically moving plasma with respect to the line of sight. Core-dominated sources should show properties corresponding to an axis nearly pointing at the observer - superluminal motion, exaggeration of small bends, and strong and variable cores. In contrast, in lobe-dominated quasars these properties should be weak or absent. We wish to make SECOND EPOCH VSOP OBSERVATIONS of our small sample of LOBE-DOMINATED QUASARS, to compare the submas structures and component velocities with those of the stronger core-dominated quasars. Our sources are at high declinations, and are thus ideal for efficient use of VSOP-GRT time.

(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: 3

### (8) Details of proposed experiments

|                                       | Experiment 1                        | Experiment 2                        | Experiment 3                        | Experiment 4             |
|---------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|--------------------------|
| Source name ( <i>Jhhmm±ddmm</i> )     | J0728+6748                          | J1139+6547                          | J0825+6157                          |                          |
| Alternative name                      | 3C179                               | 3C263                               |                                     |                          |
| RA(J2000) (hh mm ss.ssss)             | 07 28 11.566                        | 11 39 57.043                        | 08 25 38.643                        |                          |
| Dec(J2000) (dd mm ss.ssss)            | +67 48 47.19                        | +65 47 49.25                        | +61 57 28.68                        |                          |
| Observing frequency band (GHz)        | 5                                   | 5                                   | 5                                   |                          |
| <i>Continuum observations:</i>        |                                     |                                     |                                     |                          |
| Standard VSOP freq. channels?         | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Channel A range (MHz)                 |                                     |                                     |                                     |                          |
| Channel B range (MHz)                 |                                     |                                     |                                     |                          |
| <i>Spectral line observations:</i>    |                                     |                                     |                                     |                          |
| 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)               | 0.6                                 | 0.2                                 | 0.6                                 |                          |
| Correlated flux (mJy)                 | 400                                 | 150                                 | 400                                 |                          |
| <i>Ground Radio Telescopes:</i>       |                                     |                                     |                                     |                          |
| Suggested array given at Item (10)?   | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| <i>GRT observing mode:</i>            |                                     |                                     |                                     |                          |
| 128Mbps LCP (standard)                | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 128Mbps LCP/RCP                       | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/> |
| 256Mbps LCP/RCP                       | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/> |
| <i>Preferred correlator:</i>          |                                     |                                     |                                     |                          |
| No preference                         | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/> |
| Mitaka                                | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/> |
| Penticton                             | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/> |
| Socorro                               | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| <i>Monitoring programs:</i>           |                                     |                                     |                                     |                          |
| Number of observations                |                                     |                                     |                                     |                          |
| Mean interval (days)                  |                                     |                                     |                                     |                          |
| Related AO1 proposal code(s)          | V054                                | V054                                | V054                                |                          |

(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 (10) below)

(10) Additional notes to the scheduler :

Because of the weak nature of these sources, and the desire to have 15 GHz VLBA "snapshot" observations in the tracking station gaps, we strongly request that our array of choice be used.

Experiment 1: VLBA + EB

Experiment 2: VLBA + EB

Experiment 3: VLBA + EB

(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, Sagami-hara

Kanagawa 229-8510 JAPAN

In addition, e-mail the completed L<sup>A</sup>T<sub>E</sub>X file to [submit@vsop.isas.ac.jp](mailto: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**