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 : VSOP OBSERVATIONS OF THE GRAVITATIONAL LENS SYSTEM 1030+074

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(5) Proposal Abstract :

B1030+074 is a new, double-image gravitational lens system, discovered during the course of the Jodrell Bank - VLA Astrometric Survey, with a separation of 1.56 arcsecs between its images. Both the source and lens galaxy redshifts are know, and as there is evidence for radio variability, it seems a promising candidate for measuring the Hubble constant. VLBA 5 GHz maps reveal a core-jet structure in the stronger image, but nothing in the other, which is 16 times weaker and hence must be much smaller. We request VSOP observations at both 5 GHz and 1.6 GHz in order to search for the core-jet structure that should be present in the weaker image. Comparison of the two image structures will provide valuable constraints on the lens mass model.

(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: 2

(8) Details of proposed experiments

	Experiment 1	Experiment 2	Experiment 3	Experiment 4
Source name (J*hhmm*±*ddmm*)	J1033+0711	J1033+0711		
Alternative name				
RA(J2000) (hh mm ss.ssss)	10 33 34.0246	10 33 34.0246		
Dec(J2000) (dd mm ss.ssss)	+07 11 26.1217	+07 11 26.1217		
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)	2	2		
Total flux density (Jy)	0.3	0.2		
Correlated flux (mJy)	300	200		
Ground Radio Telescopes:				
Suggested array given at Item (10)?	☑	☑	☐	☐
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 AO1 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 (10) below)

(10) Additional notes to the scheduler :

Because of the weakness of the source, it is essential to have at least one large GRT, and preferably more.
For experiment 1 (5 GHz) we would prefer VLBA + Eb.
For experiment 2 (1.6 GHz) we would like VLBA + Eb + Jb1 + Ro + Go (or at least one large GRT in both Europe and USA) because of the low source declination.
Note: We need 2 correlator passes - one for each image position

(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, Sagamihara
Kanagawa 229-8510 JAPAN

In addition, e-mail the completed LaTeX file 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 8 May 1998