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 : 27 September, 1999

(2) Proposal title : An extremely Doppler-boosting source: OT081

(3)	INVESTIGATORS	INSTITUTION
P.I.	Satoru Iguchi	NAO, Mitaka, Japan
co-I.	K. Fujisawa	NAO, Mitaka, Japan
co-I.	M. Inoue	NAO, Mitaka, Japan
co-I.	S. Kameno	NAO, Mitaka, Japan
co-I.		
co-I.		
co-I.		
co-I.		
co-I.		

(4) Principal Investigator (or contact person) details...

Name : Satoru IGUCHI
E-mail : iguchi@hotaka.mtk.nao.ac.jp
Fax : +81-422-34-3869
Phone : +81-422-34-3601

Address : National Astronomical
: Observatory
: 2-21-1 Osawa, Mitaka,
: Tokyo 181-8588,
: Japan

(5) Proposal Abstract :

We have shown that OT081 possibly has the very large Doppler factor (δ) of 128$\pm$10 and the very large Lorentz factor (Γ) of 64$\pm$5. These values are the largest δ and Γ we have known to date, respectively. The Lorentz factor of 64 probably exceeds the terminal velocity achieved by photon pressure and the limit of Compton-drag. The systematic errors, however, are possible to be included in these values because the derived values strongly depend on the size of component. Our aim is to inspect the large Doppler factor of 128 and the large Lorentz factor of 64. We propose the dual-polarization VSOP observation for the accurate measurement of Doppler factor.

(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*)	J1751+096			
Alternative name	OT081			
RA(J2000) (hh mm ss.ssss)	17 51 32.8185			
Dec(J2000) (dd mm ss.ssss)	+09 39 00.728			
Observing frequency band (GHz)	5			
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	64			
Correlator averaging time (sec)	2			
No. of correlating passes (if >1)				
Total flux density (Jy)	2.3			
Correlated flux (mJy)	1530			
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)	v118a			

(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 VLBA is the best for the dual-polarization VLBI observation because the same type telescopes are effective to calibrate the instrumental polarization. In the dual-polarization observation, the detection limit should carefully be estimated. This source has the flux density of 1530 mJy in the unresolved component D. The component has the fractional polarization of about 5 %, so that the detection limit of VSOP observation is necessary to be more than 76 mJy. We request the large telescopes, for example, VLA, EB, GB.

(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