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 : 8-May-1998

(2) Proposal title : VLBI counter-jet search for AGN

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(5) Proposal Abstract :

We propose counter-jet finding observations to VSOP. If the counter-jet is dietected, fundamental physical parameters ;the jet velocity, viewing angle to line of sight, can be determined. And it makes possible to check unified model. And we can compare the Doppler boosting factor calculated from counter-jet observations and ones from various jet emission models (eg. SSC, Energy equipartition model). For it, we propose VSOP and Japanese Xray satellite ASCA coordinated observations. We selected possible counter-jet objects by ground VLBI observations, which are detected proper motions. If we can't detect it, current jet radio emission models is not enough or AGN jet is asymmetric or one-sided at VLBI scale. So we want observations are scheduled twice in close days because of accident on VSOP or ASCA accident. And for two high proper motion object, we propose 3 observations to detect it.

(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

The number of experiments in this proposal is: 15

(8) Details of proposed experiments

	Experiment 1	Experiment 2	Experiment 3	Experiment 4
Source name (J*hhmm*±*ddmm*)	J1230+1223	J0319+4130	J1632+8232	J0713+4349
Alternative name	3C274	3C84	NGC6251	
RA(J2000) (hh mm ss.ssss)	12 30 49.45	03 19 48.093	16 32 31.971	07 13 38.1641
Dec(J2000) (dd mm ss.ssss)	12 23 30.2	41 30 43.77	82 32 16.46	43 49 17.207
Observing frequency band (GHz)	5	5	5	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	32	32	32	32
Correlator averaging time (sec)	2	2	2	2
No. of correlating passes (if >1)				
Total flux density (Jy)	61	42		1.8
Correlated flux (mJy)	1000	6000	670	630
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	2	2	2	2
Mean interval (days)	10	10	10	10
Related AO1 proposal code(s)				

	Experiment 5	Experiment 6	Experiment 7	Experiment 8
Source name (J*hhmm*±*ddmm*)	J1800+7828	J0508+8432	J0626+8202	J0721+7120
Alternative name				
RA(J2000) (hh mm ss.ssss)	18 00 45.6839	05 08 42.3633	06 26 03.0061	07 21 53.4484
Dec(J2000) (dd mm ss.ssss)	78 28 04.018	84 32 04.544	82 02 25.567	71 20 36.363
¡Observing frequency band (GHz)	5	5	5	5
Continuum observations:	☑	☑	☑	☑
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	32	32	32	32
Correlator averaging time (sec)	2	2	2	2
No. of correlating passes (if >1)				
Total flux density (Jy)	3.3	1.1	1.0	
Correlated flux (mJy)	1440	550	610	500
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	2	2	2	2
Mean interval (days)	10	10	10	10
Related AO1 proposal code(s)				

	Experiment 9	Experiment10	Experiment11	Experiment12
Source name (J*hhmm*±*ddmm*)	J1042+1203	J0418+3801	J1824+5651	J0157+7442
Alternative name	3C245	3C111		
RA(J2000) (hh mm ss.ssss)	10 42 44.6052	04 18 21.07	18 24 07.0683	01 57 34.9648
Dec(J2000) (dd mm ss.ssss)	12 03 31.264	38 01 32.6	56 51 01.49	74 42 43.230
Observing frequency band (GHz)	5	5	5	5
Continuum observations:	☑	☑	☑	☑
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	32	32	32	32
Correlator averaging time (sec)	2	2	2	2
No. of correlating passes (if >1)				
Total flux density (Jy)			1.9	
Correlated flux (mJy)	590	2900	1130	640
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	2	3	2	2
Mean interval (days)	10	30	10	10
Related AO1 proposal code(s)				

	Experiment13	Experiment14	Experiment15	Experiment16
Source name (J*hhmm*±*ddmm*)	J1153+8058	J0853+5756	J2202+4216	
Alternative name			BL Lac	
RA(J2000) (hh mm ss.ssss)	11 53 12.4993	08 53 31.0	22 02 43.29	
Dec(J2000) (dd mm ss.ssss)	80 58 29.154	57 56 58	42 16 39.8	
Observing frequency band (GHz)	5	5	5	5
Continuum observations: ☑ 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	32	32	32	
Correlator averaging time (sec)	2	2	2	
No. of correlating passes (if >1)				
Total flux density (Jy)				
Correlated flux (mJy)	500	1980	1600	
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)	2 10	2 10	3 40	
Related AO1 proposal code(s)				

(9) VSOP spacecraft observing mode (see Section 3 and Table 5 of the VSOP Proposer's Guide):

- [x] 2 channel x 16 MHz, 2-bit (Standard mode),
- [ ] Other:

Phase calibration tones:

- [x] 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 :

We need very high dynamic range mapping. So well calibrted GRTs are essential. VLBA is preferable. But other well calibrated GRTs are acceptable.

(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