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 : 6-May-1998

(2) Proposal title : Structural Variability in the Core-jet of the Galaxy M81

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(5) Proposal Abstract :

We propose to search for structural changes in images of the extremely compact core-jet of the nearby spiral galaxy M81 with a linear resolution of up to 1,000 AU. Our goals are to (1) search for components in the bent and structurally variable jet recently found with ground-based VLBI albeit with marginal linear resolution at the source; (2) measure the components' proper motion; (3) address the question of jet fading in the context of jet motion; and (4) contribute to the discussion of a continuum of AGN activity with radio luminosities ranging from that of SgrA* to that of M81 and those of powerful radio galaxies and quasars. We propose three experiments at 1.6 GHz and three experiments at 5 GHz, each one between a few days and a few weeks apart so that component speeds of about c could be detected.

(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*)	J0955+6903	J0955+6903		
Alternative name	M81	M81		
RA(J2000) (hh mm ss.ssss)	9 55 33.17315	9 55 33.17315		
Dec(J2000) (dd mm ss.ssss)	69 03 55.0618	69 03 55.0618		
Observing frequency band (GHz)	1.6	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)	10 mas X 10 mas	6 mas X 6 mas		
Min. spectral channels per IF channel	16	16		
Correlator averaging time (sec)				
No. of correlating passes (if >1)				
Total flux density (Jy)	0.10 to 0.15	0.10 to 0.15		
Correlated flux (mJy)	0.10	0.10		
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	3	3		
Mean interval (days)	23	6		
Related AO1 proposal code(s)	v063a	v063b		

(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 :

Preferred Choice of Array (1.6 GHz): VSOP, EF, JB, WB, MC, ON, NT, GO, NR, RO, UD, VL
Mimimum acceptable Array (1.6 GHz): VSOP, with largest telescopes

Preferred Choice of Array (5 GHz): VSOP, EF, JB, WB, MC, NT, ON, GO, NR, RO, UD, VL
Mimimum acceptable Array (5 GHz): VSOP with largest telescopes

(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