VSOP AO2 PROPOSAL COVER SHEETS

DEADLINE : 8 May, 1998
SEND TO : VSOG, ISAS, 3-1-1 Yoshinodai, Sagamihara, Kanagawa 229-8510, JAPAN

Please read Appendix C of Announcement of Opportunity for details on how to fill in this Cover Sheet.

(1) Date prepared : 15 April 1998

(2) Proposal title : THE BASE OF THE JET IN FR-I/FR-II TRANSITION OBJECT NGC6251

(3)	INVESTIGATORS	INSTITUTION
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(5) Proposal Abstract :

We propose to image the base of the unusually long and straight radio jet associated with the elliptical galaxy NGC 6251 at both 1.6 and 5 GHz. This object has a radio luminosity near the dividing line between FR-I and FR-II radio galaxies and indeed contains some morphological features from each class: a prominent jet (and weaker counterjet) and two widely separated radio lobes containing "warm spot" where the jets appear to terminate. Previous ground-based global VLBI observations of NGC 4261 at 1.6 GHz have produced a series of high dynamic range images. These indicate a wide range of apparent proper motions for features in the first 30 mas of the jet, with a nearly stationary feature always visible ≈ 25 mas from the base of the jet and possible much faster motions within 12 mas of the base. Higher resolution images of the first several mas will clarify the jet morphology in the region where rapid apparent motion occurs.

(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*)	J1632+8232	J1632+8232		
Alternative name	NGC 6251	NGC 6251		
RA(J2000) (hh mm ss.ssss)	16 32 31.970	16 32 31.970		
Dec(J2000) (dd mm ss.ssss)	+82 32 16.40	+82 32 16.40		
Observing frequency band (GHz)	1.6	5.0		
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	128	128		
Correlator averaging time (sec)				
No. of correlating passes (if >1)				
Total flux density (Jy)	13.6	7.4		
Correlated flux (mJy)	500	600		
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):

- [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 :

VLBA plus at least two large ground telescopes (phased VLA and Bonn) requested for both 5 and 1.6 GHz. Large ground telescopes are especially needed for initial ground-space fringe detection at 1.6 GHz, where the correlated flux density of the source is not far above the detection limit for VSOP-VLBA baselines. In addition, we request simultaneous VLBA and S2 recording at tracking stations to allow phase cal tone extraction at the Penticton correlator and subsequent coherent fringe-fitting with both IFs. September or October 1999 would be a good time for these observations based on (u,v) coverage.

(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