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 : 4 May, 1998

(2) Proposal title : 5.0 & 1.6 GHz Monitoring of the Centaurus A Nuclear Jet

(3)	INVESTIGATORS	INSTITUTION
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(5) Proposal Abstract :

We propose to monitor Centaurus A, the nearest active galaxy, extensively at 5 GHz and 1.6 GHz on several different time scales during early–mid 1999 when the (u,v) coverage is optimal. These observations will produce images of the sub-parsec jet components with a resolution 25 times better than images in our extensive 8.4 GHz monitoring campaign and 3 times better than our 22 GHz studies. The data will allow us to better understand the complex behavior of the sub-parsec jet flow, to test theoretical models for the differences between Fanaroff & Riley classes I and II, and to use jet structure to probe the environment of the central engine.

(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: 4

(8) Details of proposed experiments

	Experiment 1	Experiment 2	Experiment 3	Experiment 4
Source name (J*hhmm±ddmm*)	J1325-4301	J1325-4301	J1325-4301	J1325-4301
Alternative name	CEN-A	CEN-A	CEN-A	CEN-A
RA(J2000) (hh mm ss.ssss)	13 25 27.6152	13 25 27.6152	13 25 27.6152	13 25 27.6152
Dec(J2000) (dd mm ss.ssss)	-43 01 08.8018	-43 01 08.8018	-43 01 08.8018	-43 01 08.8018
Observing frequency band (GHz)	5	5	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	128	128	128	128
Correlator averaging time (sec)				
No. of correlating passes (if >1)				
Total flux density (Jy)	70	70	70	170
Correlated flux (mJy)	1000	1000	1000	1400
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	4	4	4	2
Mean interval (days)	1	7	60	180
Related AO1 proposal code(s)	v033, v140	v033, v140	v033, v140	v033, v140

(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 :

For experiments 1-3, the preferred array is VLBA, VL, HO, MR, and CG.
For experiment 4, the preferred array is VLBA, VL, GO, HO, MR, TI, and CG.
Hartebeesthoek (HT) also would be especially useful, because of its distance from Australia.

The experiments should be intermingled contiguously, as stated in the scientific justification. The two 1.6 GHz observations should occur within a week or less of the first and last 5.0 GHz observations. Availability of resources will be the most important criterion in determining the weeks with daily observations.

(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