VSOP PROPOSAL COVER SHEETS

ID :

TR :

SR :

DEADLINE : 17 November, 1995
SEND TO : VSOP SOG, ISAS, 3-1-1 Yoshinodai, Sagamihara, Kanagawa 229, JAPAN

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

(1) Date prepared : 9-November-1995

(2) Proposal title : The core-jet in the nearby spiral galaxy M81

(3)	INVESTIGATORS	INSTITUTION
P.I.	N. Bartel	York University, Canada
co-I.	M. Bietenholz	York University, Canada
co-I.		
co-I.		
co-I.		
co-I.		
co-I.		
co-I.		

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

Name : Nobert Bartel
Address : Dept. Phys. & Astronomy
: York University
: 4700 Keele St., North York
: Ontario, Canada, M3J 1P3

Internet : bartel@polaris.phys.yorku.ca
Other e-mail :
Fax : 1-416-736-5516
Telephone : 1-416-736-5424

(5) Proposal Abstract :

We propose to image 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) reveal unequivocally the bent jet, (2) search for components in it to measure their proper motion, (3) investigate the spectral indices of the core and the jet and address the question of jet fading, and (5) 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 one monitoring experiment at 1.6 GHz with 7 large antennas (EF, JO, GO, NR, RO, UD, VL – minimum EF, GO or RO, VL) and one single experiment at 5 GHz with 4 large antennas (EF, NR, UD, VL – minimum EF, UD, VL).

(6) Proposal Category (indicate all that apply):

Object type:

☑ AGN, ☐ Masers, ☐ Stellar, ☐ Other :

Experiment type:

☑ Single-observation, ☑ Monitoring, ☐ Polarization,
☐ Time-critical, ☐ Target of Opportunity, ☐ Other :

(7) 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),
☐ 2 channel x 32 MHz, 1-bit,
☐ 1 channel x 32 MHz, 2-bit

Phase calibration tones:

☑ On (Standard continuum mode),
☐ Off (Standard spectral line mode)

(Include justification of any non-standard choice at (14) below)

(8) Ground radio telescope setup

Polarization :

☑ VSOP Standard (IEEE LCP), ☐ Non-standard :

Recording mode :

☑ As for VSOP spacecraft (Standard), ☐ Other :

(9) Investigator participation in scheduling

☐ PI (or co-I) wishes to participate in scheduling ground radio telescopes
☐ PI (or co-I) wishes to participate in scheduling the space radio telescope

(10) Preferred correlator (see Sections 9.11 and 12 of VSOP Proposer's Guide):

☑ No preference, ☐ Mitaka, ☐ Socorro, ☐ Other :

(11) Preferred post-correlation data analysis location:

☑ Home Institution, ☐ Mitaka, ☐ NRAO AOC, ☐ JIVE, ☐ Other

(12) Post-correlation data analysis assistance required:

☐ None, ☑ Consultation, ☐ Extensive help

(13) Details of proposed experiments

An 'experiment' is one or more observations of one source in one wavelength band.
A request to observe the same source in all 3 wavelength bands requires 3 columns to be filled in.
To observe the same source at the same frequency multiple times – a 'monitoring experiment' – requires only one column to be filled in.
Number of experiments in this proposal: 2

	Experiment 1	Experiment 2	Experiment 3	Experiment 4
Source name	M81	M81		
RA (hh mm ss.s)	9 55 33.17315	9 55 33.17315		
Dec (dd mm ss)	69 03 55.0618	69 03 55.0618		
J2000 or B1950?	J2000	J2000		
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)				
Min. spectral channels per IF channel				
Correlator averaging time (sec)				
FWHM of field of view required (mas)				
No. of correlating passes (if >1)				
Measured total flux density (Jy)	0.1	0.1		
Measured correlated flux density on > 5000 km baseline (Jy)	0.1	0.1		
Image RMS needed (mJy/beam)				
Ground Radio Telescopes:				
Preferred choice:				
Number of medium telescopes				
Number of large telescopes	7	4		
Suggested array given at Item (14)	☑	☑	☐	☐
Minimum acceptable:				
Number of medium telescopes				
Number of large telescopes	4	3		
Suggested array given at Item (14)	☑	☑	☐	☐
Length of observation:				
Preferred length (orbits)	4	4		
Minimum acceptable length (orbits)	2	2		
Scheduling constraints:				
Preferred P.A. of beam *major* axis (deg)	160	160		
'No holes' (u,v) coverage?	☐	☐	☐	☐
Or maximum resolution (u,v) coverage?	☑	☑	☐	☐
Preferred range of dates for scheduling (for monitoring experiments give range for 1st observation only)	to	to	to	to
For monitoring programs:				
Number of observations	2			
Mean interval (days)	23			
Acceptable variance from mean (days)	7			

(14) Additional notes to the scheduler :

Preferred Choice of Array (1.6 GHz): VSOP, EF, JO, GO, NR, RO, UD, VL
Mimimum acceptable Array (1.6 GHz): VSOP, EF, GO or RO, VL

Preferred Choice of Array (5 GHz): VSOP, EF, NR, UD, VL
Mimimum acceptable Array (5 GHz): VSOP, EF, UD, VL

(15) 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 JAPAN

In addition, e-mail the completed LaTeX file to submit@vsopgw.isaslan1.isas.ac.jp

Cover Sheets of accepted proposals will be made available to the astronomical community.

Proposals must be received at ISAS by 17 November 1995