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 : 14-Nov-1995

(2) Proposal title : High-resolution imaging of nearby lobe-dominated radiogalaxies

(3)	INVESTIGATORS	INSTITUTION
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co-I.	P. Dewdney, W. Cannon, R. Wietfeldt	DRAO (Can), ISTS (Can), ISTS (Can)
co-I.	P. Edwards	ISAS (Jpn)

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

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(5) Proposal Abstract :

We propose multiple-epoch imaging with VSOP at 5GHz of the three lobe-dominated radiogalaxies Pictor A, PKS 2152-699 and PKS 0521-365. These three objects are among the closest and brightest examples of the FR-II type, rendering excellent (sub-parsec) linear resolution with VSOP imaging. Three epochs are requested for each object, to allow estimates of jet speed to be obtained. These images will greatly enhance our understanding of the jet parameters and other radio properties of these sources, which have all been studied extensively with ground-based radio arrays and in other wavebands. We require 4 (minimum 3) orbits on each of these sources to obtain good uv-coverage with the limited Southern hemisphere array.

(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 : Canadian S-2

(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: 3

	Experiment 1	Experiment 2	Experiment 3	Experiment 4
Source name	Pictor A	PKS 2152-699	PKS 0521-365	
RA (hh mm ss.s)	05 19 49.75	21 57 05.9806	05 22 57.9848	
Dec (dd mm ss)	-45 46 43.8	-69 41 23.683	-36 27 30.850	
J2000 or B1950?	J2000	J2000	J2000	
Observing frequency band (GHz)	5	5	5	
Continuum observations:				
Standard VSOP freq. channels?	$\boxed{\surd}$	$\boxed{\surd}$	$\boxed{\surd}$	
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)	15.4Jy	12.7Jy	9.4Jy	
Measured correlated flux density on > 5000 km baseline (Jy)	~0.5Jy	~0.5Jy	~1.2Jy	
Image RMS needed (mJy/beam)	2	2	2	
Ground Radio Telescopes:				
Preferred choice:				
Number of medium telescopes	5	3	5	
Number of large telescopes	1	1	1	
Suggested array given at Item (14)	$\square$	$\square$	$\square$	$\square$
Minimum acceptable:				
Number of medium telescopes	3	3	3	
Number of large telescopes	1	1	1	
Suggested array given at Item (14)	$\boxed{\surd}$	$\boxed{\surd}$	$\boxed{\surd}$	$\square$
Length of observation:				
Preferred length (orbits)	4	4	4	
Minimum acceptable length (orbits)	3	3	3	
Scheduling constraints:				
Preferred P.A. of beam *major* axis (deg)	0^o	-45^o	45^o	
'No holes' (u,v) coverage?	$\boxed{\surd}$	$\boxed{\surd}$	$\boxed{\surd}$	
Or maximum resolution (u,v) coverage?	$\square$	$\square$	$\square$	$\square$
Preferred range of dates for scheduling (for monitoring experiments give range for 1st observation only)	97-01-01 to 97-02-15	97-01-01 to 97-02-15	97-01-01 to 97-02-15	to
For monitoring programs:				
Number of observations	3	3	3	
Mean interval (days)				
Acceptable variance from mean (days)				

(14) Additional notes to the scheduler :

Exp 1, Pref Array = VLBA, ATCA, Hobart, Mopra, Hart
Exp 2, Pref Array = ATCA, Hobart, Mopra, Hart
Exp 3, Pref Array = VLBA, ATCA, Hobart, Mopra, Hart

(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