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 : November 10 1995

(2) Proposal title : Spectral Imaging of 4C39.25 and 4C73.18

(3)	INVESTIGATORS	INSTITUTION
P.I.	A.P. Lobanov	NRAO, USA
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co-I.		
co-I.		

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

Name : A.P. Lobanov
Address : NRAO, P.O. Box 0
: Socorro, NM 87801
: USA
:

Internet : alobanov@nrao.edu
Other e-mail :
Fax : (+1) 505 835 7027
Telephone : (+1) 505 835 7449

(5) Proposal Abstract :

We propose to obtain high-dynamic range images of 4C39.25 and 4C73.18 at 1.6 and 5 GHz for the purpose of mapping the turnover frequency distribution in these sources. The matching data at 8.4, 15, and 22 GHz will be obtained from supporting ground-based observations with the VLBA. The turnover frequency maps will be used for measuring and studying fine spectral variations along and across the jet. In these maps, we expect to be able to localize the regions of shocked emission, and search for possible presence of a thermal plasma surrounding a relativistic channel in the jet. Such data will provide useful constraints for the models applied to these sources.

(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: 4

	Experiment 1	Experiment 2	Experiment 3	Experiment 4
Source name	4C39.25	4C39.25	4C73.18	4C73.18
RA (hh mm ss.s)	09 23 55.3157	09 23 55.3157	19 28 49.3510	19 28 49.3510
Dec (dd mm ss)	+39 15 23.511	+39 15 23.511	+73 51 44.901	+73 51 44.901
J2000 or B1950?	B1950	B1950	B1950	B1950
Observing frequency band (GHz)	1.6	5	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)	<100	<50	<100	<50
No. of correlating passes (if >1)				
Measured total flux density (Jy)	2.7	7.5	3.9	2.9
Measured correlated flux density on > 5000 km baseline (Jy)	1.0	0.6	0.8	0.5
Image RMS needed (mJy/beam)	10	10	10	10
Ground Radio Telescopes:				
Preferred choice:				
Number of medium telescopes	14	14	14	14
Number of large telescopes	1	1	1	1
Suggested array given at Item (14)	☑	☑	☑	☑
Minimum acceptable:				
Number of medium telescopes	10	10	10	10
Number of large telescopes	0	0	0	0
Suggested array given at Item (14)	☑	☑	☑	☑
Length of observation:				
Preferred length (orbits)	4	4	4	4
Minimum acceptable length (orbits)	3	3	2	2
Scheduling constraints:				
Preferred P.A. of beam *major* axis (deg)				
'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)	98-03-15 to 98-05-01	98-03-15 to 98-05-01	97-01-15 to 97-05-31	97-01-15 to 97-05-31
For monitoring programs:				
Number of observations				
Mean interval (days)				
Acceptable variance from mean (days)				

(14) Additional notes to the scheduler :

Preferred array for all experiments: VLBA, EF, MC, NO, ON, TR.
Minimum accepted array for all experiments: VLBA.

(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