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 : 6 November 1995

(2) Proposal title : Cores of Lobe-dominated Quasars

(3)	INVESTIGATORS	INSTITUTION
P.I.	R.W.Porcas	MPIfR, Bonn, Germany
co-I.	J.A.Zensus	NRAO, Charlottesville, VA, USA
co-I.	D.H.Hough	Trinity University, San Antonio, TX, USA
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(4) Principal Investigator (or contact person) details...

Name : Richard Porcas
Address : Max-Planck-Institut fuer Radioastronomie
: Auf dem Huegel 69
: D-53121 BONN
: Germany

Internet : porcas@mpifr-bonn.mpg.de
Other e-mail :
Fax : (+49) 228 525 229
Telephone : (+49) 228 525 288

(5) Proposal Abstract :

The study of the parsec-scale morphology and kinematics of quasars is central to the understanding of extragalactic radio source jet physics, and the classification of various types of objects. In the "unified schemes" a central tenet is that the properties of sources depend crucially upon the angle of a relativistically moving plasma beam with respect to the line of sight. Core-dominated radio sources should show properties corresponding to a source axis nearly pointing at the observer - superluminal motion, exaggeration of small bends, and strong and variable cores. In contrast, in lobe- dominated quasars, these properties should be weak or absent. We wish to observe a small sample of three quasars of this latter type, to compare their sub-mas structures (as measured with VSOP-ground baselines) with those of the stronger core-dominated quasars. Our sources are at high declinations, and are thus ideal for efficient use of VSOP-GRT time.

(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: 5

	Experiment 1	Experiment 2	Experiment 3	Experiment 4
Source name	3C179	3C179	3C263	0821+621
RA (hh mm ss.s)	07 23 04.9	07 23 04.9	11 37 09.3	08 21 22.9
Dec (dd mm ss)	67 54 53	67 54 53	66 04 27	62 07 16
J2000 or B1950?	B1950	B1950	B1950	B1950
Observing frequency band (GHz)	5	22	5	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)	0.6	0.3	0.2	0.6
Measured correlated flux density on > 5000 km baseline (Jy)	0.4	0.2	0.15	0.4
Image RMS needed (mJy/beam)	0.5	0.7	0.5	0.7
Ground Radio Telescopes:				
Preferred choice:				
Number of medium telescopes	10	10	10	10
Number of large telescopes	2	2	2	2
Suggested array given at Item (14)	☑	☑	☑	☑
Minimum acceptable:				
Number of medium telescopes	5	5	5	5
Number of large telescopes	1	1	1	1
Suggested array given at Item (14)	☐	☐	☐	☐
Length of observation:				
Preferred length (orbits)	4	4	4	4
Minimum acceptable length (orbits)	2	2	2	2
Scheduling constraints:				
Preferred P.A. of beam *major* axis (deg)	0	0	20	-30
'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)	97-02-14 to 97-03-15	97-02-14 to 97-03-15	97-04-14 to 97-05-15	97-04-14 to 97-05-15
For monitoring programs:				
Number of observations				
Mean interval (days)				
Acceptable variance from mean (days)				

	Experiment 5	Experiment 6	Experiment 7	Experiment 8
Source name	0821+621			
RA (hh mm ss.s)	08 21 22.9			
Dec (dd mm ss)	62 07 16			
J2000 or B1950?	B1950			
Observing frequency band (GHz)	22			
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)	0.60			
Measured correlated flux density on > 5000 km baseline (Jy)	0.4			
Image RMS needed (mJy/beam)	0.5			
Ground Radio Telescopes:				
Preferred choice:				
Number of medium telescopes	10			
Number of large telescopes	2			
Suggested array given at Item (14)	☑	☐	☐	☐
Minimum acceptable:				
Number of medium telescopes	5			
Number of large telescopes	1			
Suggested array given at Item (14)	☐	☐	☐	☐
Length of observation:				
Preferred length (orbits)	4			
Minimum acceptable length (orbits)	2			
Scheduling constraints:				
Preferred P.A. of beam *major* axis (deg)	-30			
'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)	97-04-14 to 97-05-15	to	to	to
For monitoring programs:				
Number of observations				
Mean interval (days)				
Acceptable variance from mean (days)				

(14) Additional notes to the scheduler :

Because of the weak nature of these sources, their relatively high declinations, and the need to determine well their structures on ground-ground baselines at the VSOP observing epoch, we strongly request that our array of choice be used. This is VLBA + Effelsberg (+ Goldstone at 22 GHz)

(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