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 : 16 November.1995

(2) Proposal title : A search for molecular torus in a IR-luminous radio-excess galaxy NGC 5793

(3)	INVESTIGATORS	INSTITUTION
P.I.	Yoshiaki Hagiwara	Nobeyama Radio Observatory
co-I.	Ryohei Kawabe	Nobeyama Radio Observatory
co-I.	Seiji Kameno	Nobeyama Radio Observatory
co-I.	Sachiko Kawabe-Okumura	Nobeyama Radio Observatory
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(4) Principal Investigator (or contact person) details...

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(5) Proposal Abstract :

NGC5793 is an edge-on spiral galaxy which is seen in absorption against a radio continuum source located near its nucleus. Also, known as one of the inflared luminous galaxies ,but no definite evidence for existence of AGN components inside the galaxy has ever been shown in any wave lengths. According to the observation at frequencies of radio and IRAS bands , the flux at radio 21cm continuum is too strong compared with that of IRAS wave bands. It indicates that the strong non-thermal emission mechanism in it and that its nucleus is hidden in the dusty molecular gas which is often seen in the Seyfert 2 type galaxies and inside that AGN must exist. We propose to detect a molecular ring around its nucleus using OH absorption line. And this unusual property of NGC5793 may lead to solve the unified theory between Quasars and Seyferts.

(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:

	Experiment 1	Experiment 2	Experiment 3	Experiment
Source name	NGC 5793	NGC 5793		
RA (hh mm ss.s)	14 56 37.03	14 56 37.03		
Dec (dd mm ss)	-16 29 41.38	-16 29 41.38		
J2000 or B1950?	B1950	B1950		
Observing frequency band (GHz)	1.6	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)	1667			
Ch.A LSR velocity (km/s)	3530			
Ch.B spectral line rest freq. (MHz)	1720			
Ch.B LSR velocity (km/s)	3530			
Min. spectral channels per IF channel	1024			
Correlator averaging time (sec)	60			
FWHM of field of view required (mas)				
No. of correlating passes (if >1)				
Measured total flux density (Jy)	1.07 Jy			
Measured correlated flux density on > 5000 km baseline (Jy)	1.0Jy at 2000km baseline			
Image RMS needed (mJy/beam)				
Ground Radio Telescopes:				
Preferred choice:				
Number of medium telescopes	3	3		
Number of large telescopes	5	5		
Suggested array given at Item (14)	☐	☐	☐	☐
Minimum acceptable:				
Number of medium telescopes	2	2		
Number of large telescopes	3	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)				
'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				
Mean interval (days)				
Acceptable variance from mean (days)				

(14) Additional notes to the scheduler :

22GHz correlated and total fluxes unknown - value is empty . Refer to scientific justification.

(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