VSOP AO2 PROPOSAL COVER SHEETS

DEADLINE : 8 May, 1998
SEND TO : VSOG, ISAS, 3-1-1 Yoshinodai, Sagamihara, Kanagawa 229-8510, JAPAN

(1) Date prepared : 8 May 1998

(2) Proposal title : Second epoch images of the TeV emitters Mkn421 and Mkn501

(3)	INVESTIGATORS	INSTITUTION
P.I.	P. Edwards	ISAS, Japan
co-I.	K. Fujisawa, G. Moellenbrock, H. Hirabayashi,	ISAS, Japan
co-I.	F. Makino, T. Takahashi	ISAS, Japan
co-I.	T. Weekes	Whipple Observatory, CfA, USA
co-I.	H. Kobayashi, Y. Murata, R. Okayasu, K. Wajima,	ISAS, Japan
co-I.		
co-I.		
co-I.		
co-I.		

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

Name : Philip Edwards
E-mail : pge@vsop.isas.ac.jp
Fax : +81-427-51-3972
Phone : +81-427-51-3972

Address : ISAS
: 3-1-1 Yoshinodai, Sagamihara,
: Kanagawa 229-8510
: Japan
:

(5) Proposal Abstract :

The two confirmed extragalactic sources of gamma-rays above 300 GeV are Mkn 421 and Mkn 501. The former is a weak EGRET source and the latter has not been detected by EGRET. Both display marked variability at TeV energies and this proposal seeks second epoch 5 GHz VSOP images (following our AO1 observations) to determine whether the TeV activity is a precursor to activity visible with the highest angular resolution observations.

(6) Proposal Category (indicate all that apply):
Object type:
☑ AGN, ☐ Maser, ☐ Stellar, ☐ Pulsar, ☐ Other :
Observation type:
☑ Continuum, ☐ Spectral Line, ☐ Polarization, ☐ Time-critical, ☐ Other :

(7) Number of proposed experiments

An 'experiment' is one or more observations of one source at a fixed HALCA set-up. A request to observe the same source at 1.6 GHz and separately at 5 GHz requires two columns to be filled in in item (8) below. A request to observe the same source with HALCA simultaneously observing at 1.6 GHz and 5 GHz requires one column to be filled in. Multi-epoch observations of the same source at the same frequency – a 'monitoring experiment' – requires only one column to be filled in. Suggested observing dates, especially for for time-critical and monitoring experiments, should be specified in item (10).

The number of experiments in this proposal is: 2

(8) Details of proposed experiments

	Experiment 1	Experiment 2	Experiment 3	Experiment 4
Source name (J*hhmm*±*ddmm*)	J1104+3812	J1653+3945		
Alternative name	Mkn 421	Mkn 501		
RA(J2000) (hh mm ss.ssss)	11 04 27.3231	16 53 52.2167		
Dec(J2000) (dd mm ss.ssss)	38 12 31.6470	39 45 36.6091		
Observing frequency band (GHz)	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)				
FWHM of field of view required (mas)				
Min. spectral channels per IF channel	32	32		
Correlator averaging time (sec)				
No. of correlating passes (if >1)				
Total flux density (Jy)	0.725	1.42		
Correlated flux (mJy)	224	430		
Ground Radio Telescopes:				
Suggested array given at Item (10)?	☐	☐	☐	☐
GRT observing mode:				
128Mbps LCP (standard)	☑	☑	☐	☐
128Mbps LCP/RCP	☐	☐	☐	☐
256Mbps LCP/RCP	☐	☐	☐	☐
Preferred correlator:				
No preference	☑	☑	☐	☐
Mitaka	☐	☐	☐	☐
Penticton	☐	☐	☐	☐
Socorro	☐	☐	☐	☐
Monitoring programs:				
Number of observations				
Mean interval (days)				
Related AO1 proposal code(s)	v130	v130		

(9) VSOP spacecraft observing mode (see Section 3 and Table 5 of the VSOP Proposer's Guide):

- [x] 2 channel x 16 MHz, 2-bit (Standard mode),
- [ ] Other:

Phase calibration tones:

- [x] On (Standard continuum mode),
- [ ] Off (Standard spectral line mode)

(Include justification of any non-standard choice at (10) below)

(10) Additional notes to the scheduler :

Correlated fluxes are maximum derived values from Pearson-Readhead 5GHz map for Mkn501, and from Caltech-Jodrell survey 5GHz map for Mkn421.

Suggested epoch for Mkn421: Nov/Dec 1999
Suggested epoch for Mkn501: Sep 1999

(11) 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 229-8510 JAPAN
In addition, e-mail the completed LaTeX file to submit@vsop.isas.ac.jp

Information from the Cover Sheets of scheduled proposals will be made available from the VSOP WWW site.

Proposals must be received at ISAS by 8 May 1998