VLBA PROPOSAL COVERSHEET

DEADLINES: 1st of Feb., June, Oct.
EMAIL TO: toosoc@nrao.edu

rcvd:

(1) Date Prepared: November 11, 2004

(2) Title of Proposal: A TOO Proposal to Measure the Scattered Size of the Remarkable Scintillator PKS 0405−385 in order to determine the Distance to the Scattering Screen.

(3) AUTHORS (Add * for new location)	INSTITUTION	E-mail	Students Only G/U	For Thesis?	Ph.D. Year
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(4) Related previous or current VLBI proposal(s): ◯ Resubmission

(5) Contact author for scheduling: David Jauncey
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(7) Scientific Category: ◯ astrometry & geodesy ◯ galactic ⊗ extragalactic ◯ other:
Rapid Response Science: ◯ Known Transient ◯ Exploratory ⊗ Target of Opportunity

(8) Wavelength(s) requested (those not available on the global network are indicated with a small circle):
◯ 90cm ◯ 50cm ∘ 30cm ◯ 21cm ⊗ 18cm ◯ 13cm ◯ 6cm ∘ 5cm ◯ 3.6cm ◯ 3.6/13cm
∘ 2cm ◯ 1.3cm ◯ 7mm ∘ 3mm
⊗ Global Network standard bands ◯ Special frequencies:_____

(9) Recording format: ⊗ Default continuum setup (VLBA only), ◯ VLBA/MkIV, ◯ MkIII: Mode_____
Bandwidth per BaseBand channel: _____
Aggregate bit rate:_____ (_____ BB channels at _____ MSamples/sec of ◯ 1 bit, ◯ 2 bit)

(10) ◯ Multi-epoch observation: _____ epochs of _____ hours each, separated by _____

(11) Network	Requested antennas	Total time requested
EVN & MERLIN		
VLBA	ALL	13 hours
other NRAO		
	Hartebeesthoek (South Africa), Hobart (Australia)	13 hours
Non-VLBI Intruments		

(12) ABSTRACT (Do not write outside this space. Please type)
We ask to measure the angular size at 1.7 GHz of the scattering disk in the remarkable episodic scintillator PKS 0405−385 (Kedziora-Chudczer et al., 1997, ApJ, 490, L9) which has recently resumed scintillating (Cimo et al., 2004, IAU Circular 8403). PKS 0405−385 was the first of the rapid inter-hour variables, where this rapid variability is due to ISS in an usuaual discrete screen at a distance of ∼10 to 20 pc. The scattered size, or lower limit of 1 mas, will provide a determination of, or significant limit to the distance to the scattering screen. We ask for a ToO observation because of the ever present possibility that the scintillation may cease abruptly. The last scintillation episode in this source was in 1998-99.

Scheduler use only
(8/03)

(13) Observation type: ⊗ Interferometry, ○ Spectroscopy, ○ Pulsar, ○ Phase referencing

(14) Proposal is ○ Suitable ⊗ Unsuitable for dynamic scheduling.

(15) Polarization: ○ Single Polarization ⊗ Dual Circular Polarization
Global network standard for single polarization is LCP for all λs except 13cm (RCP) and 3.6cm (RCP).

(16) Tape usage (Show <recording time>/<total time>): _____

(17) Assistance required:
Observation Setup: ○ Consultation, ○ Extensive help, ○ Observe file preparation
Postprocessing: ○ Consultation, ○ Extensive help, ○ Calibration service

(18) Processor: ○ Socorro, ○ JIVE, ○ Haystack, ○ Bonn, ⊗ Washington, ○ Other_____
Special processing: ⊗ XPol, ○ Pulsar gate, ○ Multiple Fields: _____
Averaging time: _____ Spectral channels per baseband channel: _____
○ Other special processing: _____

(19) Postprocessing Location: Australia Telescope National Facility

(20) Source list: ⊗ J2000 ○ B1950
If more than 4 sources, please attach list. If more than 30, give only selection criteria and GST range(s)

	Source 1	Source 2	Source 3	Source 4
Name(s)	PKS 0405−385			
RA (hh mm)	04:06:59.0353470			
Dec (dd.d)	-38:26:28.042231			
GST range (Europe)				
GST range (US)	4 to 17 (on different antennas)			
GST range (Other)	2030 to 0800 (HartRAO), 1130 to 0100 (Hobart)			
Band(s)	18cm			
Flux density (Total, Jy)	∼ 1			
Flux density (correlated, mJy)	∼ 1000			
RMS needed (mJy/beam)				
Peak/RMS needed				

(21) Preferred VLBI session or range of dates for scheduling, and why:
As soon as possible because the source might stop scintillating. Would be ideal (but not essential) to have it coincide with a separate LBA observation that is scheduled for DOY 323 (Thu Nov 18th, 2004).

(22) Dates which are NOT acceptable, and why:
Need to negotiate observations with HartRAO and Hobart

(23) Attach a self-contained scientific justification, not in excess of 1000 words.
Preprints or reprints will not be forwarded to the referees.

Information about the capabilities of the VLBA may be found on the World Wide Web by starting at the NRAO home page, http://www.nrao.edu, and selecting the VLBA from "Sites and Telescopes."

A brief summary of the capabilities of the EVN antennas is given in the EVN STATUS TABLE in the EVN USER GUIDE, which may be found at http://www.evlbi.org/user_guide/user_guide.html.

Please include the full postal addresses for first-time users or for those that have moved (if not contact author).