



Observing Application

Date : Apr, 22 2010
 Proposal ID : VLBA/10A-148
 Legacy ID : BB291
 PI : Catherine Brocksopp
 Type : Rapid Response - Target of Opportunity
 Category : Stellar, Galactic, Astrometry/Geodesy
 Total Time : 12.0

Catch the decaying radio core of the new X-ray transient XTE J1752-223

Abstract:

We propose new VLBA ToO observations of the new X-ray transient XTEJ1752-223, which entered its first known outburst and showed a series of radio flares after the X-ray hard-soft state transition on 21 Jan. 2010. The Galactic jet showed the most rapid jet deceleration 0.36 mas/day^2 ever seen, as well as evidence for multiple ejection events in the rapid VLBA and EVN observations (11 Feb - 22 Mar, 2010). The recent brightening (0.45 mag) in infrared H-band on 12 April 2010 strongly indicates the turn-on of the compact jet and the end of the soft state (ATel 2549). To identify the stationary radio core which can help to estimate the initial proper motions of these detected component, determine the intrinsic jet speed, and directly test the unified model presented by Fender et al. (2004 & 2009), we request two 6-hour VLBA experiments at 5 GHz with an separation of 2-3 days. As the transient has a decaying flux and will be undetectable probably for several decades in a few weeks, we wish to run the observations asap.

Authors:

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Related proposals:

BB290

Joint:

Not a Joint Proposal

Observing type(s):

Continuum, Monitoring, Phase Referencing

VLBA Resources

Name	Wavelength	Processor	Stations	Observing Parameters	Correlation Parameters
VLBA	6 cm	Socorro-DiFX	VLBA <input checked="" type="checkbox"/> Br <input checked="" type="checkbox"/> Fd <input checked="" type="checkbox"/> Hn <input checked="" type="checkbox"/> Kp <input checked="" type="checkbox"/> La <input checked="" type="checkbox"/> Mk <input type="checkbox"/> Kp <input checked="" type="checkbox"/> Ov <input checked="" type="checkbox"/> Pt <input checked="" type="checkbox"/> Sc <hr/> HSA Ar Ef GBT VLA-Y27 <hr/> VLA-Y1 <hr/> Geodetic	Bandwidth: 16 MHz Baseband Channels 8 Sample Rate (Msample/s) 32 Bits/Sample 2 Polarization RCP & Agg. Bit Rate (Mbits/sec) 512	Full Polarization Pulsar Gate Correlator Passes 1 Integration Period (sec) 2.0 Spectral Points /BBC 32 No of Fields 0

Sources:

Name	Position		Velocity		Group
XTE J1752-223	Coordinate System	Equatorial	Convention	Optical	XTEJ1752
	Equinox	J2000			
	Right Ascension	17:52:15.64 00:00:00.0	Ref. Frame	Barycentric	
	Declination	-22:20:31 00:00:00	Velocity	0	
J1755-2232	Coordinate System	Equatorial	Convention	Optical	XTEJ1752
	Equinox	J2000			
	Right Ascension	17:55:26.285 00:00:00	Ref. Frame	Barycentric	
	Declination	-22:32:10 00:00:00	Velocity	0	
NRAO0530	Coordinate System	Equatorial	Convention	Optical	XTEJ1752
	Equinox	J2000			
	Right Ascension	17:33:02.705787 00:00:00	Ref. Frame	Barycentric	
	Declination	-13:04:49 00:00:00	Velocity	0	

Sessions:

Name	Session Time (hours)	Repeat	Separation	GST minimum	GST maximum	Elevation Minimum
ToO	6.00	2	3 day	22:00:00	04:00:00	0

Session Constraints:

Name	Constraints	Comments
ToO	We will appreciate it if the observations can be scheduled asap. We prefer a separation of 2-3 day	We will provide the schedule asap if the proposal is approved.

Session Source/Resource Pairs:

Session Name	Source	Resource	Time	Figure of Merit
ToO	XTE J1752-223 J1755-2232 NRAO0530	VLBA	6.0 hour	0.06 mJy/bm