



Observing Application

Date : Sep, 14 2009
 Proposal ID : VLBA/09B-132
 Legacy ID : BM317
 PI : James Miller-Jones
 Type : Rapid Response -
 Exploratory Time
 Category : Stellar, Galactic,
 Astrometry/Geodesy
 Total Time : 6.0

Exploratory HSA observations of the X-ray binary SWIFT J1753.5-0127

Abstract:

The black hole candidate X-ray binary SWIFT J1753.5-0127 was recently detected in a VLA survey to identify candidate black hole systems for an astrometric program to determine their parallaxes and proper motions. We request 6h of Exploratory Time with the HSA in preparation for a full HSA proposal to carry out astrometry on this source. This Exploratory Time will check that the source can be detected with VLBI, localize the source within the error circle derived from our C-configuration VLA observations, and ascertain whether extended jets are present in the system. We wish to use the VLBA, GBT and phased VLA, before the latter capability is lost. High sensitivity is required to localize the source within the error circle, given that it is too faint to self-calibrate on, and also to image any low surface brightness emission from extended jets in the system.

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Related proposals:

Joint:

Not a Joint Proposal

Observing type(s):

Continuum, Phase Referencing

VLBA Resources

Name	Wavelength	Processor	Stations	Observing Parameters	Correlation Parameters

Name	Wavelength	Processor	Stations	Observing Parameters	Correlation Parameters
HSA	3.6 cm	Socorro	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 checked="" type="checkbox"/> Kp <input checked="" type="checkbox"/> Ov <input checked="" type="checkbox"/> Pt <input checked="" type="checkbox"/> Sc <input checked="" type="checkbox"/> <hr/> HSA <input checked="" type="checkbox"/> Ar Ef GBT <input checked="" type="checkbox"/> VLA-Y27 <input checked="" type="checkbox"/> <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 <input checked="" type="checkbox"/> Pulsar Gate Correlator Passes: 2 Integration Period (sec): 2.0 Spectral Points /BBC: 8

Sources:

Name	RA / RA Range	Dec / Dec Range	Epoch	Velocity / z	Group
SWIFTJ1753.5-0127	17:53:28.3 00:00:00.0	-1:27:08 00:00:00	J2000	Velocity : 0.00	SWIFTJ1753.5

Sessions:

Name	Session Time (hours)	Repeat	Separation	GST minimum	GST maximum	Elevation Minimum
J17535	6.00	1	0 day	21:00:00	05:30:00	0

Session Constraints:

Name	Constraints	Comments

Session Source/Resource Pairs:

Session Name	Source	Resource	Time	Figure of Merit
J17535	SWIFTJ1753.5-0127	HSA	6.0 hour	0.01 mJy/bm

Staff support: None

Plan of Dissertation: no