



Observing Application

Date : Sep, 05 2011
 Proposal ID : VLA/11B-220
 Legacy ID : AS1153
 PI : Lorant Sjouwerman
 Type : Director's Discretionary
 Time - Exploratory Time
 Category : Active Galactic Nuclei
 Total Time : 21.0

The putative Intermediate Mass Black Hole in the Globular cluster NGC 6388

Abstract:

During August 2011 the putative intermediate mass black hole in NGC6388 has prompted my interest in proposing for possible observations during move time (starting September 12). An old radio non-detection contradicts an August 2011 paper by Lutzgendorf et al (A&A 533, A36), where the latter infer a mass of 17000 Msun using stellar dynamics. During August a new X-ray flare and radio follow-up with ATCA (rms 15-20 uJy) non-detection imposed an even lower radio upper mass limit of less than 600 Msun (ATel #3617, 2011 September 1) using the Black Hole fundamental plane method. With the latest publications contradicting each other, the EVLA can significantly improve the radio picture with a few hours of observing, detect radio emission of an intermediate mass black hole for the first time, and possibly resolve the discrepancy between the methods of stellar dynamics and fundamental planes.

I realize this request may be large for an Exploratory proposal and I do not anticipate to be using it all. However, in case of a non-detection I plan to set the tightest limits possible and avoid hitting an artificial self-imposed limit if more time is available during move time.

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Related proposals:

Joint:

Not a Joint Proposal

Observing type(s):

Continuum

VLA Resources

Name	Conf.	Frontend & Backend	Setup
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Name	Conf.	Frontend & Backend	Setup
upC	Any	C Band 6 cm 4000-8000 MHz WIDAR ECSO	Comments: Plain 2GHz bandwidth in upper C band for sensitivity

Sources:

Name	Position		Velocity		Group
GC6388	Coordinate System	Equatorial	Convention	Radio	IMBH
	Equinox	J2000			
	Right Ascension	17:36:17.0	Ref. Frame	LSRK	
		00:00:00.0			
Declination	-44:44:15.0	Velocity	0.00		
	00:00:00.0				

Sessions:

Name	Session Time (hours)	Repeat	Separation	LST minimum	LST maximum	Elevation Minimum
GCatC	3.50	6	0 day	16:00:00	19:30:00	0

Session Constraints:

Name	Constraints	Comments
GCatC		Prefer observations as early as possible in the A to D move for highest resolution to be able to distinguish between different X-ray sources

Session Source/Resource Pairs:

Session Name	Source	Resource	Time	Figure of Merit	Subarray
GCatC	GC6388	upC	3.5 hour	0.003 mJy/bm	

Present for observation: no

Staff support: None

Plan of Dissertation: no