Observing Application

Date :	Feb, 11 2009
Proposal ID :	VLA/09A-186
Legacy ID :	AL738
PI :	Ari Laor
Type :	Rapid Response - Exploratory Time
Category :	Extragalactic
Total Time :	5.0

Radio Constraints on the Quasar SDSS J153636.22, a Candidate Binary Black Hole

Abstract:

The recently discovered quasar SDSS J153636.22+044127.0 shows two broad-line emission systems (Boroson & Lauer 2009). This unique quasar is interpreted as a binary black hole system with a separation of 0.1 pc = 0.02 milliarcseconds. The alternate interpretation of a chance superposition of two unrelated quasars is unlikely, based on the optical localization region, a circle of radius 1 arcsecond. We predict a flux density of 0.05-0.2 mJy for this radio-quiet quasar and we will observe it with sub-arcsecond resolution. If two radio sources are detected, the alternative interpretation of a chance superposition of two unrelated quasars will be supported. If a single radio source is detected, the tighter VLA localization region - a circle of radius 0.35 arcseconds - will further strengthen the case against a chance superposition.

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Related proposals:

Joint:

Not a Joint Proposal

Observing type(s):

Continuum, Single Pointing(s)

VLA Resources

Name	Conf.	Frontend & Backend	Setup
Bconfig4cm	B	X Band 3.6 cm 8080 - 8750 MHz VLA Correlator - Single Channel Continuum	Rest frequencies: 8435.1,8485.1 MHz Bandwidth: 50 MHz

Sources:

Name	RA / RA Range	Dec / Dec Range	Epoch	Velocity / z	Group
SDSS J153636.22	15:36:36.2 00:00:00.0	+04:41:27 00:00:00	J2000	Redshift : 0.388	Candidate binary

Sessions:

Name	Session Time (hours)	Repeat	Separation	LST minimum	LST maximum	Elevation Minimum
Mine	5.00	1	0 day	00:00:00	24:00:00	0

Session Constraints:

Name	Constraints	Comments
Mine		Dynamic scheduling is acceptable.

Session Source/Resource Pairs:

Session Name	Source	Resource	Time	Figure of Merit	Subarray
Mine	SDSS J153636.22	Bconfig4cm	5.0 hour	0.01 mJy/bm	

Present for observation: no Staff support: None Plan of Dissertation: no