



# Observing Application

Date : Aug, 11 2010  
 Proposal ID : VLA/10B-238  
 Legacy ID : AJ364  
 PI : Peter Jonker  
 Type : Rapid Response -  
 Exploratory Time  
 Category : Stellar, Galactic  
 Total Time : 1.0

## Detecting radio emission from the nearest X-ray binary: IGR J19308+0530

### Abstract:

Recent optical observations have determined that the peculiar source IGR J19308+0530 is a nearby X-ray binary in quiescence. The source is at a distance of approximately 250 pc making this the most nearby X-ray binary known by a factor of 4-5, and an ideal target for studying the process of low-luminosity accretion. We here propose a 1-hour EVLA exploratory observation to search for the continuum radio emission of the X-ray binary in quiescence. If the compact object is a black hole one expects it to be clearly detected, scaling from the only other black hole X-ray binary that has been detected in quiescence, whereas if it is a neutron star we do not expect to detect the source. As well as constraining the nature of the compact object, a detection would pave the way for a VLBA campaign to determine a model-independent parallax distance to this system. Alternatively, a non-detection would warrant a search for millisecond radio pulsations from a neutron star accretor.

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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
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Name	Conf.	Frontend & Backend	Setup
EVLA-C	D	C Band 6 cm 4000-8000 MHz WIDAR OSRO1: 2 Subbands/Full polz	Rest frequencies: 4600.0, 7900.0 MHz Bandwidth: 128.0 MHz No. of Channels: 64 Poln. products: 4.0 Channel Width: 2000.0 kHz

### Sources:

Name	Position		Velocity		Group
IGR J19308+0530	Coordinate System	Equatorial	Convention	Radio	XRB
	Equinox	J2000			
	Right Ascension	19:30:50.77 00:00:00.0	Ref. Frame	LSRK	
	Declination	+05:30:58 00:00:00	Velocity	0.00	

### Sessions:

Name	Session Time (hours)	Repeat	Separation	LST minimum	LST maximum	Elevation Minimum
IGRJ19308	1.00	1	0 day	14:00:00	01:00:00	15

### Session Constraints:

Name	Constraints	Comments

### Session Source/Resource Pairs:

Session Name	Source	Resource	Time	Figure of Merit	Subarray
IGRJ19308	IGR J19308+0530	EVLA-C	1.0 hour	0.022 mJy/bm	

Present for observation: no

Staff support: None

Plan of Dissertation: no