



Observing Application

Date : Jun, 19 2009
 Proposal ID : VLA/09B-199
 Legacy ID : AB1338
 PI : Geoffrey Bower
 Type : Rapid Response -
 Exploratory Time
 Category : Stellar, Galactic
 Total Time : 4.0

The Radio Flux of a Nearby M Dwarf Hosting an Exoplanet

Abstract:

The nearby M dwarf GJ 752B was recently discovered to host a $6.2^{+2.6}_{-3.1}$ M_{Jup} companion with an orbital period $0.744^{+0.013}_{-0.008}$ y through the technique of optical astrometry. This detection comes from the extreme limits of optical astrometric accuracy and, thus, requires confirmation; systematic errors in the optical data are estimated at 1 milliarcsecond but could be larger. The astrometric reflex motion of the star has an amplitude of ~ 10 milliarcseconds, which could be easily detected by the VLBA, if the star is detectable at radio wavelengths. Previous observations have failed to detect this star at 5, 8.4, 22 and 43 GHz with integrations of 10 to 20 minutes. However, the star is known to be active and variable at other wavelengths. We propose deeper VLA observations of GJ 752B with the goal of opening the door to high resolution radio astrometry. HSA observations would be at least an order of magnitude more accurate than the optical astrometry, allowing quick confirmation of the detection, accurate characterization of this unique system, and the opportunity to search for additional stellar companions.

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Related proposals:

ab1179, bb222, bb240

Joint:

Not a Joint Proposal

Observing type(s):

Continuum

VLA Resources

Name	Conf.	Frontend & Backend	Setup
Continuum	Any	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
GJ752B	19:16:57.6 00:00:00.0	+05:09:02 00:00:00	J2000	Velocity : 0.00	GJ 752B

Sessions:

Name	Session Time (hours)	Repeat	Separation	LST minimum	LST maximum	Elevation Minimum
obs	1.00	4	0 day	14:00:00	24:00:00	0

Session Constraints:

Name	Constraints	Comments
obs	4 1-hour observations requested.	

Session Source/Resource Pairs:

Session Name	Source	Resource	Time	Figure of Merit	Subarray
obs	GJ752B	Continuum	1.0 hour	0.020 mJy/bm	

Present for observation: no

Staff support: None

Plan of Dissertation: no