Observing Application

Date :	Nov, 27 2012
Proposal ID :	VLA/12B-402
Legacy ID :	AM1216
PI :	Ashish Mahabal
Type :	Director's Discretionary Time - Target of Opportunity
Category :	Energetic Transients and Pulsars
Total Time :	1.5

Unusual fast optical CRTS transient

Abstract:

A fast optical transient was discovered by the Catalina Realtime Transient Survey (CRTS) on 2012-11-06 UT, at the J2000 coordinates 01 44 19.91 +08 23 11.2 (MLS121106:014420+082311). After the discovery detections over 20 minutes the object was not seen in various sets of optical images down to r~26. It was not seen in archival FIRST, UKIDSS etc. In subsequent NIR imaging in Ks a counterpart is seen at ~19.3+/-0.4. The colors (r-Ks > 7), size of flare (>8 mags) make it extremely unlikely to be a M-dwarf. This presents the best evidence yet for an "orphan-afterglow" from a GRB. A radio detection with the VLA will conclusively point to an extragalactic explosive progenitor for this event and will allow accurate calorimetry of the associated fireball.

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Related proposals:

Joint:

Not a Joint Proposal

Observing type(s):

Continuum

VLA Resources

Name	Conf.	Frontend & Backend	Setup
C-band	A	C Band 6 cm 4000-8000 MHz WIDAR OSRO, Full Polarization	Rest frequencies: 4800,7400 MHz Subband Bandwidth: 128.0 MHz No. of Channels: 64 Poln. products: 4.0 Channel Width: 2000.0 kHz Total Bandwidth: 2,048.00 MHz
K-band	A	K Band 1.3 cm 18000 - 26500 MHz WIDAR OSRO, Full Polarization	Rest frequencies: 21500.0,22500.0 MHz Subband Bandwidth: 128.0 MHz No. of Channels: 64 Poln. products: 4.0 Channel Width: 2000.0 kHz Total Bandwidth: 2,048.00 MHz

Testing Resource Images

Sources:

Name	Position		Velocity		Group
MLS121106	**Coordinate System**	Equatorial	**Convention**	Radio	CRTS01+08
	Equinox	J2000			
	Right Ascension	01:44:19.91	**Ref. Frame**	LSRK	
		00:00:00.0			
	Declination	+08:23:11.2	**Velocity**	0.00	
		00:00:00.0			

Sessions:

Name	Session Time (hours)	Repeat	Separation	LST minimum	LST maximum	Elevation Minimum
CRTS01	1.50	1	0 day	22:00:00	04:30:00	30

Session Constraints:

Name	Constraints	Comments

Session Source/Resource Pairs:

Session Name	Source	Resource	Time	Figure of Merit	Subarray
CRTS01	MLS121106	C-band	0.5 hour	0.01 mJy/bm	
CRTS01	MLS121106	K-band	1.0 hour	0.015 mJy/bm	

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