



Observing Application

Date : Nov, 21 2011
 Proposal ID : VLA/11B-234
 Legacy ID : AS1154
 PI : Alicia Soderberg
 Type : Director's Discretionary
 Time - Target of
 Opportunity
 Category : Energetic Transients and
 Pulsars
 Total Time : 18.0

EVLA Follow-up of Four New Radio Supernovae

Abstract:

With the improved sensitivity of the EVLA we have been able to increase the radio detection fraction of nearby core-collapse supernovae. Specifically, over the past 4 months we have discovered radio emission from four events within 120 Mpc, a factor of ~3 higher than in the VLA era. Intriguingly, all are unusual in their optical properties, suggesting that they bridge the Type Ibc, broad-lined Ic ("hypernova") and Type IIb sub-classes. Such supernovae have been shown to be radio luminous with modulated flux density light-curves (e.g., SN2003bg; Soderberg et al 2006). Here we request modest EVLA follow-up for monitoring observations of these four explosions. The EVLA data will be modeled to reveal the physical parameters of the blastwave and circumstellar environment and will complement our ongoing VLBI, X-ray, optical/NIR campaigns.

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Related proposals:

11A-277, 11B-212

Joint:

Not a Joint Proposal

Observing type(s):

Continuum

VLA Resources

Name	Conf.	Frontend & Backend	Setup
Xband	Any	X Band 3.6 cm 8000 - 12000 MHz WIDAR OSRO1: 2 Subbands/Full polz	Rest frequencies: 8500.0,9500.0 MHz Subband Bandwidth: 128.0 MHz No. of Channels: 64 Poln. products: 4.0 Channel Width: 2000.0 kHz
Kband	Any	K Band 1.3 cm 18000 - 26500 MHz WIDAR OSRO1: 2 Subbands/Full polz	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
Cband	Any	C Band 6 cm 4000-8000 MHz WIDAR OSRO1: 2 Subbands/Full polz	Rest frequencies: 5000.0,6750.0 MHz Subband Bandwidth: 128.0 MHz No. of Channels: 64 Poln. products: 4.0 Channel Width: 2000.0 kHz

Sources:

Name	Position		Velocity		Group
SN2011dh	Coordinate System	Equatorial	Convention	Radio	Supernovae
	Equinox	J2000			
	Right Ascension	13:30:05.0 00:00:00.0	Ref. Frame	LSRK	
	Declination	+47:10:10.0 00:00:00.0	Velocity	0.00	
SN2011ei	Coordinate System	Equatorial	Convention	Radio	Supernovae
	Equinox	J2000			
	Right Ascension	20:34:22.0 00:00:00.0	Ref. Frame	LSRK	
	Declination	-31:58:23.0 00:00:00.0	Velocity	0.00	
SN2011hg	Coordinate System	Equatorial	Convention	Radio	Supernovae
	Equinox	J2000			
	Right Ascension	23:11:48.0 00:00:00.0	Ref. Frame	LSRK	
	Declination	+31:00:59.0 00:00:00.0	Velocity	0.00	