



Observing Application

Date : May, 21 2012
 Proposal ID : VLA/12A-479
 Legacy ID : AC1109
 PI : Laura Chomiuk
 Type : Director's Discretionary
 Time - Target of
 Opportunity
 Category : Energetic Transients and
 Pulsars
 Total Time : 12.0

The E-Nova Project: Probing Complex Mass Ejection in Nova Sgr 2012

Abstract:

The recent eruption of nova Sgr 2012 has mobilized the nova community to undertake an intensive, multi-wavelength observing campaign. Optical spectra have shown unexpected and rare "hybrid" evolution, implying that the mass ejection in this system is likely multi-phase and complex. Moreover, last Thursday night, we detected hard X-ray emission from Sgr 2012 with Swift, revealing the presence of shock-heated gas. Here we request eight epochs of JVLA observations (12 hours total) to obtain a multi-frequency radio light curve. The combination of radio and X-ray monitoring during the early phases of this very fast nova will enable us to test the hypothesis that shocks in the ejecta from novae, which recent observations suggest might be a key missing ingredient in standard nova theory, produce clear radio signatures, such as excess radio emission at low frequencies from synchrotron emission or shock-heated optically thin gas.

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Related proposals:

11B-170

Joint:

Not a Joint Proposal

Observing type(s):

Continuum, Polarimetry, Single Pointing(s)

VLA Resources

Name	Conf.	Frontend & Backend	Setup
Kaband	Any	Ka Band 0.9 cm 26500 - 40000 MHz WIDAR OSRO, Full Polarization	Rest frequencies: 28000.0,35000.0 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
C wide	Any	C Band 6 cm 4000-8000 MHz WIDAR OSRO, Full Polarization	Rest frequencies: 4500.0,7250.0 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
Sband	Any	S Band 10 cm 2000 - 4000 MHz WIDAR OSRO, Full Polarization	Rest frequencies: 2500.0,3500.0 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
Uband	Any	Ku Band 2 cm 12000 - 18000 MHz WIDAR OSRO, Full Polarization	Rest frequencies: 13000.0,15000.0 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

Sources:

Name	Position		Velocity		Group
Sgr12	Coordinate System	Equatorial	Convention	Radio	N_Sgr_!2
	Equinox	J2000			
	Right Ascension	17:45:28.0	Ref. Frame	LSRK	
		00:00:00.0			
Declination	-23:05:23.0	Velocity	0.00		
	00:00:00.0				

Sessions:

Name	Session Time (hours)	Repeat	Separation	LST minimum	LST maximum	Elevation Minimum
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