



Observing Application

Date : Feb, 14 2011
 Proposal ID : VLA/11A-254
 Legacy ID : AC1050
 PI : Laura Chomiuk
 Type : Director's Discretionary
 Time - Target of Opportunity
 Category : Energetic Transients and Pulsars
 Total Time : 31.5

The ENova Project: Continued Monitoring of Novae with the EVLA

Abstract:

Novae, which are the result of thermonuclear runaways on the surface of accreting white dwarfs, are laboratories for the study nuclear burning, accretion, and shocks. But despite their significance for the field of astrophysics, basic questions about them remain unanswered. Our deep multi-frequency radio light curves of two nearby novae, V407 Cyg and V1723 Aql, are already challenging models of the nova ejecta and uncovering unexpected emission mechanisms. We request 31.5 hours of EVLA OSRO time to continue monitoring them and to detect the new nova V5587 Sagittarii. Our light curves will measure the amount of mass ejected in novae; how that mass is ejected; and the shaping of the nova shells that result. A deeper understanding of nova eruptions will also have implications for whether accreting white dwarfs can be the progenitors of type Ia supernovae, the formation of transient collimated jets, and the generation of asymmetric structure in other stellar explosions.

Authors:

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Related proposals:

AS1039, VLA/10B-200, VLA/10B-233

Joint:

Not a Joint Proposal

Observing type(s):

Continuum, Polarimetry, Single Pointing(s), Monitoring

VLA Resources

Name	Conf.	Frontend & Backend	Setup
C wide	Any	C Band 6 cm 4000-8000 MHz WIDAR RSRO	Comments: 2 GHz of bandwidth, full polarization, 2 MHz-wide channels.
X wide	Any	X Band 3.6 cm 8000 - 12000 MHz WIDAR RSRO	Comments: 800 MHz of bandwidth, full polarization, 2 MHz-wide channels.
L wide	Any	L Band 20 cm 1000 - 2000 MHz WIDAR RSRO	Comments: 1 GHz of bandwidth, full polarization, 2 MHz-wide channels.
K wide	Any	K Band 1.3 cm 18000 - 26500 MHz WIDAR RSRO	Comments: 2 GHz of bandwidth, full polarization, 2 MHz-wide channels.
Ka wide	Any	Ka Band 0.9 cm 26500 - 40000 MHz WIDAR RSRO	Comments: 2 GHz of bandwidth, full polarization, 2 MHz-wide channels.
Q wide	Any	Q Band 0.7 cm 40000 - 50000 MHz WIDAR RSRO	Comments: 2 GHz of bandwidth, full polarization, 2 MHz-wide channels.
S wide	Any	S Band 10 cm 2000 - 4000 MHz WIDAR RSRO	Comments: 2 GHz of bandwidth, full polarization, 2 MHz-wide channels.

Sources:

Name	Position		Velocity		Group
V1723 Aql	Coordinate System	Equatorial	Convention	Radio	V1723
	Equinox	J2000			
	Right Ascension	18:47:39.0 00:00:00.0	Ref. Frame	LSRK	
	Declination	-3:47:14.0 00:00:00.0	Velocity	0.00	
V407 Cyg	Coordinate System	Equatorial	Convention	Radio	V407
	Equinox	J2000			
	Right Ascension	21:02:10.0 00:00:00.0	Ref. Frame	LSRK	
	Declination	+45:46:33.0 00:00:00.0	Velocity	0.00	