



# Observing Application

Date : Mar, 30 2010  
 Proposal ID : VLA/10A-255  
 Legacy ID : AS1039  
 PI : Jennifer Sokoloski  
 Type : Rapid Response - Target of Opportunity  
 Category : Stellar  
 Total Time : 40.0

## Radio evolution of the gamma-ray symbiotic nova V407 Cyg

### Abstract:

We request 2 hours of EVLA time every 3 days for the next two months to observe the symbiotic nova V407 Cyg, the first nova detected in gamma-rays. This program will measure the radio emission and the radio optical depth as the blast wave from the thermonuclear explosion on the white dwarf engulfs the red giant (Mira) companion. These observations will

- (1) elucidate the physics behind the high-energy emission;
- (2) measure the energy and mass of the outflow;
- (3) probe the structure of the wind from the donor star and hence the mass transfer in a wide binary;
- (4) constrain models of the shaping of nova shells and the physics of jet production in stellar explosions; and
- (5) demonstrate the capabilities of the EVLA, even in its early days, as the premier radio telescope in the world.

### Authors:

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**Related proposals:****Joint:**

Not a Joint Proposal

**Observing type(s):**

Continuum, Monitoring

**VLA Resources**

Name	Conf.	Frontend & Backend	Setup
C wide	D	C Band 6 cm 4000-8000 MHz WIDAR OSRO1: 2 Subbands/Full polz	Rest frequencies: 4896.0, 7800.0 MHz Bandwidth: 128.0 MHz No. of Channels: 64 Poln. products: 4.0 Channel Width: 2000.0 kHz
L wide	D	L Band 20 cm 1000 - 2000 MHz WIDAR OSRO1: 2 Subbands/Full polz	Rest frequencies: 1350.0, 1810.0 MHz Bandwidth: 128.0 MHz No. of Channels: 64 Poln. products: 4.0 Channel Width: 2000.0 kHz
X	D	X Band 3.6 cm 8080 - 8750 MHz WIDAR OSRO1: 2 Subbands/Full polz	Rest frequencies: 8396.0, 8524.0 MHz Bandwidth: 128.0 MHz No. of Channels: 64 Poln. products: 4.0 Channel Width: 2000.0 kHz
K wide	D	K Band 1.3 cm 18000 - 26500 MHz WIDAR OSRO1: 2 Subbands/Full polz	Rest frequencies: 19000.0, 26000.0 MHz Bandwidth: 128.0 MHz No. of Channels: 64 Poln. products: 4.0 Channel Width: 2000.0 kHz
Ka wide	D	Ka Band 0.9 cm 26500 - 40000 MHz WIDAR OSRO1: 2 Subbands/Full polz	Rest frequencies: 29000,39000 MHz Bandwidth: 128.0 MHz No. of Channels: 64 Poln. products: 4.0 Channel Width: 2000.0 kHz
Q wide	D	Q Band 0.7 cm 40000 - 50000 MHz WIDAR OSRO1: 2 Subbands/Full polz	Rest frequencies: 41000,49000 MHz Bandwidth: 128.0 MHz No. of Channels: 64 Poln. products: 4.0 Channel Width: 2000.0 kHz

**Sources:**

Name	Position	Velocity	Group
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