



Observing Application

Date: Feb 16, 2007
Proposal ID: VLA/07B-243
Legacy ID: AS909
PI: Jeno Sokoloski
Type: Rapid Response
Target of Opportunity
Category: Stellar
Total time: 16.0 hour

Radio Flux Monitoring of CH Cygni

Abstract:

CH Cygni is a symbiotic star that contains a jet-producing white dwarf (WD). It has recently entered an optical state similar to those that preceded major jet production events in 1985 and 1997. Based on past source behavior, we expect a major jet ejection and dramatic radio flux increase within the next several months. To catch this radio jet ejection, we propose weekly monitoring of CH Cyg, at 2 frequencies, with the VLA for the next 4 months (i.e., until the beginning of A configuration). If and when the radio flux rises, we will alert the community and request follow-up ToO observations with the VLBA.

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Related proposals:

AS908 (submitted for 1feb07 deadline)

Joint:

Not a Joint Proposal

Observing type(s):

Continuum, Monitoring, Triggered Transient, Single Pointing(s), Polarimetry, *

Resources:

Resource name	Tele. Conf.	Frontend & Backend	Set up
1.4 GHz	VLA Any	L Band 20 cm 1200 - 2000 MHz VLA Correlator - Single Channel Continuum	Bandwidth: 50 MHz Rest frequencies: 1464.9,1385.1 MHz
4.9 GHz	VLA Any	C Band 6 cm 4500 - 5000 MHz VLA Correlator - Single Channel Continuum	Bandwidth: 50 MHz Rest frequencies: 4885.1,4835.1 MHz
8.5 GHz	VLA Any	X Band 3.6 cm 8080 - 8750 MHz VLA Correlator - Single Channel Continuum	Bandwidth: 50 MHz Rest frequencies: 8435.1,8485.1 MHz
15 GHz	VLA Any	U Band 2 cm 14650 - 15325 MHz VLA Correlator - Single Channel Continuum	Bandwidth: 50 MHz Rest frequencies: 14964.9,14914.9 MHz
22 GHz	VLA Any	K Band 1.3 cm 18000 - 26500 MHz VLA Correlator - Single Channel Continuum	Bandwidth: 50 MHz Rest frequencies: 22485.1,22435.1 MHz
43 GHz	VLA Any	Q Band 0.7 cm 40000 - 50000 MHz VLA Correlator - Single Channel Continuum	Bandwidth: 50 MHz Rest frequencies: 43314.9,43364.9 MHz

Sources:

Source name	RA / RA Range	DEC / DEC Range	System	Velocity/z	Group name
CH Cyg	19:24:33.6 00:00:00.0	+50:14:29 00:00:00	J2000	-53.7 km/s	

Sessions:

Session Name	Session Time	Repeat	Separation	LST Minimum	LST Maximum	Elevation Minimum
Weekly monitoring	1.0 hour	16	7 days	00:00:00	24:00:00	0

Session Constraints:

Session Name	Constraint	Comments
Weekly monitoring		We will observe in two of the continuum bands in each epoch, with the choice depending on current conditions (array configuration, weather, recent source flux density evolution). 16 epochs covers the period from now until the beginning of A configuration in mid-June; we have submitted a "regular" proposal for monitoring (and imaging!) at that point.

Session Source/Resource Pairs:

Session Name	Source	Resource	Time	Figure of Merit
Weekly monitoring	CH Cyg/	1.4 GHz	0.5 hour	0.05mJy/bm
Weekly monitoring	CH Cyg/	4.9 GHz	0.5 hour	0.04mJy/bm
Weekly monitoring	CH Cyg/	8.5 GHz	0.5 hour	0.03mJy/bm
Weekly monitoring	CH Cyg/	15 GHz	0.5 hour	0.11mJy/bm
Weekly monitoring	CH Cyg/	22 GHz	0.5 hour	0.08mJy/bm
Weekly monitoring	CH Cyg/	43 GHz	0.5 hour	0.23mJy/bm

Total Time per Configuration:

Configuration	Total Time
Any	16.0

Present for observation: yes Staff support: None