Observing Application

Date :	Apr, 18 2008
Proposal ID :	VLA/08A-239
Legacy ID :	AS947
PI :	Christopher Stockdale
Type :	Rapid Response - Target of Opportunity
Category :	Extragalactic
Total Time :	10.0

Radio Monitoring of the Type IIb SN 2008bo

Abstract:

We propose to observe the type II Supernova (SN) 2008bo in NGC 6643 with the VLA. On 2008 April 5 we detected radio emission (at X and K bands) from a measured position in good agreement with the measured optical position (CBET 1324). Later, radio observations on April 7 yielded a much lower non-detection at X band. The initial interpretation was that SN 2008bo was fading below the VLA's sensitivity levels for a meaningful follow-up program. However, subsequent X-ray observations (ATEL 1463, 1481) have detected a rise in the X-ray emission over the course of about 10 days. Therefore, we requested and received an additional VLA X-band observation, which now shows a re-brightening in the radio suggesting an atypical circumstellar material distribution, with potentially significant variations in its density. This behavior is very unusual for a radio SN and continued VLA monitoring is important to study the evolution of SN 2008bo. Within our collaboration, Swift optical, UV, and X-ray observations are in progress. VLBI observations may be proposed if SN 2008bo rebrightens significantly.

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Related proposals:

AW710

Joint:

Not a Joint Proposal

Observing type(s):

Continuum

VLA Resources

Name	Conf.	Frontend & Backend	Setup
sn 2008bo	C	K Band 1.3 cm 18000 - 26500 MHz VLA Correlator - Single Channel Continuum	Rest frequencies: 22485.1,22435.1 MHz Bandwidth: 50 MHz
sn 2008bo	C	X Band 3.6 cm 8080 - 8750 MHz VLA Correlator - Single Channel Continuum	Rest frequencies: 8435.1,8485.1 MHz Bandwidth: 50 MHz
sn 2008bo	C	C Band 6 cm 4200-7700 MHz VLA Correlator - Single Channel Continuum	Rest frequencies: 4885.1,4835.1 MHz Bandwidth: 50 MHz

Sources:

Name	RA / RA Range	Dec / Dec Range	Epoch	Velocity / z	Group
SN 2008bo	18:19:54.0 00:00:00.0	+74:34:21 00:00:00	J2000	Velocity : 1484	SN2008bo

Sessions:

Name	Session Time (hours)	Repeat	Separation	LST minimum	LST maximum	Elevation Minimum
Every other Day	2.00	2	2 day	00:00:00	24:00:00	10
Semi weekly	2.00	2	4 day	00:00:00	24:00:00	10
Weekly	2.00	1	7 day	00:00:00	24:00:00	10

Session Constraints:

Name	Constraints	Comments
Every other Day	The source is circumpolar, there are no time constraints to observing.	
Semi weekly	This source is circumpolar, there are no observing constraints.	
Weekly		

Session Source/Resource Pairs:

Session Name	Source	Resource	Time	Figure of Merit
Every other Day	SN 2008bo	sn 2008bo	1.0 hour	0.04 mJy/bm
Every other Day	SN 2008bo	sn 2008bo	0.5 hour	0.04 mJy/bm
Every other Day	SN 2008bo	sn 2008bo	0.5 hour	0.04 mJy/bm
Semi weekly	SN 2008bo	sn 2008bo	1.0 hour	0.04 mJy/bm

Session Name	Source	Resource	Time	Figure of Merit
Semi weekly	SN 2008bo	sn 2008bo	0.5 hour	0.04 mJy/bm
Semi weekly	SN 2008bo	sn 2008bo	0.5 hour	0.04 mJy/bm
Weekly	SN 2008bo	sn 2008bo	1.0 hour	0.04 mJy/bm
Weekly	SN 2008bo	sn 2008bo	0.5 hour	0.04 mJy/bm
Weekly	SN 2008bo	sn 2008bo	0.5 hour	0.04 mJy/bm

Present for observation: no Staff support: None Plan of Dissertation: no