



Observing Application

Date : Aug, 22 2008
Proposal ID : VLA/08C-229
Legacy ID : AS966
PI : Alicia Soderberg
Type : Rapid Response - Target
of Opportunity
Category : Extragalactic
Total Time : 2.0

A Search for Radio Emission from Nature's Brightest Supernova: 2008es

Abstract:

An unusual transient was discovered roughly four months ago by the ROTSE III telescope. Thanks to optical follow-up, it was quickly revealed that the object is a Type II-L supernova at $z=0.205$, now dubbed SN2008es. At this distance, the peak optical luminosity is 3 magnitudes brighter than other SNe II-L and holds the title as the most luminous supernova ever discovered. The extraordinary luminosity is attributed to interaction of the ejecta with the progenitor star's extended Hydrogen envelope. This interaction should also give rise to bright synchrotron emission, peaking in the radio band. We request DDT observations to search for a radio counterpart to SN2008es. The measurement of the flux density will enable an independent constraint on the mass loss rate from the extraordinary SN progenitor star. We request that the observations be scheduled within the next few weeks to 1 month.

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Related proposals:

Joint:

Not a Joint Proposal

Observing type(s):

Continuum

VLA Resources

Name	Conf.	Frontend & Backend	Setup
X	D	X Band 3.6 cm 8080 - 8750 MHz VLA Correlator - Single Channel Continuum	Rest frequencies: 8435.1, 8485.1 MHz Bandwidth: 50 MHz

Name	Conf.	Frontend & Backend	Setup
K	D	K Band 1.3 cm 18000 - 26500 MHz VLA Correlator - Single Channel Continuum	Rest frequencies: 22485.1,22435.1 MHz Bandwidth: 50 MHz

Sources:

Name	RA / RA Range	Dec / Dec Range	Epoch	Velocity / z	Group
SN	11:56:49.1 00:00:00.1	+54:27:25 00:00:01	J2000	Redshift : 0.205	SN2008es

Sessions:

Name	Session Time (hours)	Repeat	Separation	LST minimum	LST maximum	Elevation Minimum
X-session	1.00	1	0 day	08:00:00	15:00:00	0
K-session	1.00	1	0 day	08:00:00	15:00:00	0

Session Constraints:

Name	Constraints	Comments

Session Source/Resource Pairs:

Session Name	Source	Resource	Time	Figure of Merit	Subarray
X-session	SN	X	1.0 hour	0.03 mJy/bm	
K-session	SN	K	1.0 hour	0.03 mJy/bm	

Present for observation: no

Staff support: None

Plan of Dissertation: no