



# Observing Application

Date: Nov 11, 2006  
 Proposal ID: VLA/06C-267  
**Legacy ID: AC867**  
 PI: Poonam Chandra  
 Type: Rapid Response  
 Exploratory Time  
 Category: Extragalactic  
 Total time: 2.0 hour

## SN 2006X: Circumstellar Medium of a Type Ia Supernova

### Abstract:

Circumstellar interaction around Type Ia supernovae can place important constraints on the nature of the progenitor object, which remains a gap in our understanding of these supernovae. Radio synchrotron emission from shock interactions provides a sensitive way to detect circumstellar interaction but Type Ia supernovae have never been detected. We have recently observed variable Na I absorption features in the spectrum of the Type Ia SN 2006X in M100. The absorption is probably due to circumstellar gas at a distance of  $10^{16}$  to  $10^{17}$  cm from the supernova. Early radio observations did not detect the supernova, but observations at the present time provide the opportunity of observing interaction in this radial range. We thus propose to observe SN 2006X at 8.46 and 4.8 GHz in order to search for radio emission from the interaction.

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### Joint:

Not a Joint Proposal

### Observing type(s):

Continuum, \*

**Resources:**

Resource name	Tele. Conf.	Frontend & Backend	Set up
XBand	VLA C	X Band 3.6 cm 8080 - 8750 MHz VLA Correlator - Single Channel Continuum	Bandwidth: 50 MHz  Rest frequencies: 8435.1,8485.1 MHz
CBand	VLA C	C Band 6 cm 4500 - 5000 MHz VLA Correlator - Single Channel Continuum	Bandwidth: 50 MHz  Rest frequencies: 4885.1,4835.1 MHz

**Sources:**

Source name	RA / RA Range	DEC / DEC Range	System	Velocity/z	Group name
SN 2006X	12:22:53.9 00:00:00.0	+15:48:31 00:00:00	J2000	0 km/s	

**Sessions:**

Session Name	Session Time	Repeat	Separation	LST Minimum	LST Maximum	Elevation Minimum
XandC	2.0 hours	1	0 day	08:00:00	13:00:00	0

**Session Constraints:**

Session Name	Constraint	Comments
XandC		

**Session Source/Resource Pairs:**

Session Name	Source	Resource	Time	Figure of Merit
XandC	SN 2006X/	XBand	1.0 hour	0.040mJy/bm
XandC	SN 2006X/	CBand	1.0 hour	0.040mJy/bm

**Total Time per Configuration:**

Configuration	Total Time
C	2.0

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Present for observation: no Staff support: None