Observing Application

Date :	Apr, 14 2009
Proposal ID :	VLA/09A-195
Legacy ID :	AB1328
PI :	Andreas Brunthaler
Type :	Rapid Response - Target of Opportunity
Category :	Extragalactic
Total Time :	40.0

A new radio supernova in M82?

Abstract:

We have discovered a new transient source in the nearby starburst galaxy M82. VLA observations at 22 GHz have shown a very strong (~100 mJy) new source during May last year which until recently faded to a flux density of 10 mJy. Here we propose to observe this source from April -- September with the VLA at L, C, X, K, and Q bands determine it's spectral index and lightcurve. We request 3 epochs within a week to check for short term variability and then montly monitoring. This will clarify, whether this is a new radio supernova, associated with an AGN component in M82, or of other origin. Since the lightcurve of a radio supernova peaks later at lower frequencies, we expect that it's current flux density at the lower frequencies is even higher than the 10 mJy at 22 GHz.

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Related proposals:

Joint:

Joint with VLBA

Observing type(s):

Continuum, Monitoring

VLA Resources

Name	Conf.	Frontend & Backend	Setup
L-Band	A	L Band 20 cm 1000 - 2000 MHz VLA Correlator - Single Channel Continuum	Rest frequencies: 1464.9,1385.1 MHz Bandwidth: 50 MHz
C-Band	A	C Band 6 cm 4000-8000 MHz VLA Correlator - Single Channel Continuum	Rest frequencies: 4885.1,4835.1 MHz Bandwidth: 50 MHz
X-Band	A	X Band 3.6 cm 8080 - 8750 MHz VLA Correlator - Single Channel Continuum	Rest frequencies: 8435.1,8485.1 MHz Bandwidth: 50 MHz
K-Band	A	K Band 1.3 cm 18000 - 26500 MHz VLA Correlator - Single Channel Continuum	Rest frequencies: 22485.1,22435.1 MHz Bandwidth: 50 MHz
Q-Band	A	Q Band 0.7 cm 40000 - 50000 MHz VLA Correlator - Single Channel Continuum	Rest frequencies: 43314.9,43364.9 MHz Bandwidth: 50 MHz

Sources:

Name	RA / RA Range	Dec / Dec Range	Epoch	Velocity / z	Group
M82	09:55:52.0 00:00:00.0	+69:40:45 00:00:00	J2000	Velocity : 0.00	Target

Sessions:

Name	Session Time (hours)	Repeat	Separation	LST minimum	LST maximum	Elevation Minimum
All	5.00	8	30 day	00:00:00	24:00:00	0

Session Constraints:

Name	Constraints	Comments
All	Should start as soon as possible. The 3 epochs in one week still in B-configuration	3 epochs in one week and then monthly monitoring

Session Source/Resource Pairs:

Session Name	Source	Resource	Time	Figure of Merit	Subarray
All	M82	C-Band	1.0 hour	0.3 mJy/bm	