



Observing Application

Date : Apr, 14 2009
Proposal ID : VLBA/09A-130
Legacy ID : BB272
PI : Andreas Brunthaler
Type : Rapid Response - Target
of Opportunity
Category : Extragalactic
Total Time : 12.0

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 as soon as possible with the HSA at 18, 6, and 3.6 cm to determine its structure and spectral index. 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 its current flux density at 18 - 3.6 cm is even higher than the 10 mJy at 22 GHz.

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Related proposals:

Joint:

Not a Joint Proposal

Observing type(s):

Continuum

VLBA Resources

Name	Wavelength	Processor	Stations	Observing Parameters	Correlation Parameters
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Name	Wavelength	Processor	Stations	Observing Parameters	Correlation Parameters
HSA-6cm	6 cm	Socorro	VLBA ☒ Br ☒ Fd ☒ Hn ☒ Kp ☒ La ☒ Mk ☒ Kp ☒ Ov ☒ Pt ☒ Sc ☒ HSA Ar Ef ☒ GBT ☒ VLA-Y27 ☒ VLA-Y1 Geodetic	Bandwidth: 8 MHz Baseband Channels 8 Sample Rate (Msamples/s) 16 Bits/Sample 2 Polarization RCP & Agg. Bit Rate (Mbits/sec) 256	Full Polarization Pulsar Gate Correlator Passes 1 Averaging Time (sec) 1.0 Spectral Points /BBC 32
HSA-18cm	18 cm	Socorro	VLBA ☒ Br ☒ Fd ☒ Hn ☒ Kp ☒ La ☒ Mk ☒ Kp ☒ Ov ☒ Pt ☒ Sc ☒ HSA Ar Ef ☒ GBT ☒ VLA-Y27 ☒ VLA-Y1 Geodetic	Bandwidth: 8 MHz Baseband Channels 8 Sample Rate (Msamples/s) 16 Bits/Sample 1 Polarization RCP & Agg. Bit Rate (Mbits/sec) 128	Full Polarization Pulsar Gate Correlator Passes 1 Averaging Time (sec) 1.0 Spectral Points /BBC 32
HSA-4cm	3.6 cm	Socorro	VLBA ☒ Br ☒ Fd ☒ Hn ☒ Kp ☒ La ☒ Mk ☒ Kp ☒ Ov ☒ Pt ☒ Sc ☒ HSA Ar Ef ☒ GBT ☒ VLA-Y27 ☒ VLA-Y1 Geodetic	Bandwidth: 8 MHz Baseband Channels 8 Sample Rate (Msamples/s) 16 Bits/Sample 2 Polarization RCP & Agg. Bit Rate (Mbits/sec) 256	Full Polarization Pulsar Gate Correlator Passes 1 Averaging Time (sec) 1.0 Spectral Points /BBC 16

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
M81	09:55:33.0 00:00:00.0	+69:03:55 00:00:00	J2000	Velocity : 0.00	Target

Sessions:

Name	Session Time (hours)	Repeat	Separation	GST minimum	GST maximum	Elevation Minimum
HSA	12.00	1	0 day	00:00:00	24:00:00	0

Session Constraints:

Name	Constraints	Comments

Session Source/Resource Pairs:

Session Name	Source	Resource	Time	Figure of Merit
HSA	M82 M81	HSA-6cm	4.0 hour	0.05 mJy/bm

Session Name	Source	Resource	Time	Figure of Merit
HSA	M82 M81	HSA-4cm	4.0 hour	0.05 mJy/bm
HSA	M82 M81	HSA-18cm	4.0 hour	0.05 mJy/bm

Staff support: None

Plan of Dissertation: no

