Observing Application

Date :	Mar, 07 2012
Proposal ID :	VLA/12A-457
Legacy ID :	AM1173
PI :	Joshua Marvil
Type :	Director's Discretionary Time - Exploratory Time
Category :	Normal Galaxies, Groups, and Clusters
Total Time :	3.0

Non-thermal Filaments in the M82 Starburst

Abstract:

In this exploratory proposal, we ask for 3 hours of director's discretionary time in the current EVLA C-configuration. We want to observe the continuum emission from M82 across the entire C-band and combine this data with our existing C-band, B-array observations to add missing short spacings which are limiting our current image. With these requested observations, we will improve our recent images of the faint, non-thermal filamentary emission in the starburst periphery, allowing for more accurate measurements of the flux, morphology, and spectra of the filaments. We will use these measurements to learn about the physical nature of the filaments, the structures which form the base of M82's superwind, and the transport of relativistic particles from the starburst to the radio halo.

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Related proposals:

10C-199

Joint:

Not a Joint Proposal

Observing type(s):

Continuum, Single Pointing(s)

VLA Resources

Name	Conf.	Frontend & Backend	Setup

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C-band1	C	C Band 6 cm 4000-8000 MHz WIDAR OSRO, Full Polarization	Rest frequencies: 4500.0,5500.0 MHz Subband Bandwidth: 128.0 MHz No. of Channels: 64 Poln. products: 4.0 Channel Width: 2000.0 kHz Total Bandwidth: 2,048.00 MHz
C-band2	C	C Band 6 cm 4000-8000 MHz WIDAR OSRO, Full Polarization	Rest frequencies: 6500.0,7500.0 MHz Subband Bandwidth: 128.0 MHz No. of Channels: 64 Poln. products: 4.0 Channel Width: 2000.0 kHz Total Bandwidth: 2,048.00 MHz

Sources:

Name	Position		Velocity		Group
M 82	**Coordinate System**	Equatorial	**Convention**	Redshift	M82
	Equinox	J2000			
	Right Ascension	09:55:52.7	**Ref. Frame**	LSRK	
		00:00:00			
	Declination	+69:40:46.0	**Redshift**	0.000677	
		00:00:00			

Sessions:

Name	Session Time (hours)	Repeat	Separation	LST minimum	LST maximum	Elevation Minimum
M82	3.00	1	0 day	04:00:00	15:00:00	0

Session Constraints:

Name	Constraints	Comments

Session Source/Resource Pairs:

Session Name	Source	Resource	Time	Figure of Merit	Subarray
M82	M 82	C-band1	1.5 hour	0.005 mJy/bm	
M82	M 82	C-band2	1.5 hour	0.005 mJy/bm	

Present for observation: yes Staff support: None Plan of Dissertation: yes