



# Observing Application

Date : Sep, 12 2011  
 Proposal ID : VLA/11B-224  
 Legacy ID : AM1143  
 PI : Steven Myers  
 Type : Director's Discretionary  
 Time - Exploratory Time  
 Category : High Redshift and Source  
 Surveys  
 Total Time : 8.0

## Polarisation, Water Masers and the Counter-Image in a z~2 Lensed Starburst/AGN

### Abstract:

We propose a deep ( $2 \mu\text{Jy}$ ), full Stokes C-band observation of the  $z=2.3$ , gravitationally lensed starburst/AGN IRAS FSC10214. The expanded bandwidth of the EVLA and flexibility of the WIDAR correlator allow three simultaneous experiments: (1) a deep polarisation experiment to probe jet structures at  $\sim 10$  mas effective resolution, measure the large scale magnetic field and delineate jet and star formation flux density; (2) detect the counter-image and constrain the level of preferential lensing in this system; (3) confirm previous marginal detections of water masers in IRAS 10214, which will be only the third such detection above  $z > 0.02$ .

### Authors:

Name	Institution	Email	Status
Steven Myers	National Radio Astronomy Observatory	smyers@nrao.edu	
Roger Deane	Oxford, University of	roger.deane@astro.ox.ac.uk	Graduating: 2011 Thesis: false
Steven Rawlings	Oxford, University of	sr@astro.ox.ac.uk	

Principal Investigator: Steven Myers  
 Contact: Steven Myers  
 Telephone: 505-835-7294  
 Email: smyers@nrao.edu

### Related proposals:

### Joint:

Not a Joint Proposal

### Observing type(s):

Continuum, Spectroscopy, Polarimetry

### VLA Resources

Name	Conf.	Frontend & Backend	Setup
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Name	Conf.	Frontend & Backend	Setup
Cpol	A	C Band 6 cm 4000-8000 MHz WIDAR ECSO	Comments: The two basebands will be observed with different channel widths. We ask for 64 sub-bands, full polarization. 2 sub-bands will be put on the redshifted maser line with 16 MHz bandwidth and 512 channels, the remaining 62 sub-bands will have 128 MHz bandwidth in 64 channels.

### Sources:

Name	Position		Velocity		Group
IRAS10214	Coordinate System	Equatorial	Convention	Redshift	G1
	Equinox	J2000			
	Right Ascension	10:24:34.552	Ref. Frame	Barycentric	
		00:00:00.0			
Declination	+47:09:09.8	Redshift	2.2856		
	00:00:00.0				

### Sessions:

Name	Session Time (hours)	Repeat	Separation	LST minimum	LST maximum	Elevation Minimum
Main	8.00	1	0 day	05:00:00	15:40:00	20

### Session Constraints:

Name	Constraints	Comments

### Session Source/Resource Pairs:

Session Name	Source	Resource	Time	Figure of Merit	Subarray
Main	IRAS10214	Cpol	8.0 hour	0.002 mJy/bm	

Present for observation: no

Staff support: None

Plan of Dissertation: no