Observing Application

Date :	Oct, 05 2010
Proposal ID :	VLA/10C-226
Legacy ID :	AD636
PI :	Robert Dickman
Type :	Rapid Response - Exploratory Time
Category :	Extragalactic
Total Time :	2.0

Follow-Up Observations of an Unusual Source Toward the Lupus-I Molecular Cloud

Abstract:

We request an additional 2 hours of Exploratory Time to confirm our recent detection of an unusual continuum source lying toward the Lupus molecular clouds. The intent of our original observation was to distinguish between two possibilities consistent with the available data: the source is either a dense protostellar condensation in a relatively low-extinction region of the Lupus-I molecular cloud, or it is a highly red shifted submillimeter galaxy of unprecedented luminosity. Our initial observations led to a provisional 6-sigma detection at the position of the object, with a measured flux density more or less consistent with the SED of a submillimeter galaxy at z~6 (Figure 1).

Before pursuing the implications of such an extraordinary object -- this would be one of the most distant submillimeter galaxies yet detected -- we believe it is essential to confirm the reality of our provisional C-band detection. We request observations, preferably during array reconfiguration time, to increase the S/N of our initial data set by sqrt(2), to approximately 9; the detection of a point source at the same location in two independent data sets would further strengthen our confidence in the reality of the detection.

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Related proposals:

VLA/10B-239

Joint:

Not a Joint Proposal

Observing type(s):

Continuum

VLA Resources

Name	Conf.	Frontend & Backend	Setup
Resource 1	DnC =>C	C Band 6 cm 4000-8000 MHz WIDAR ECSO	Comments: C configuration acceptable if move time unavailable.

Sources:

Name	Position		Velocity		Group
Core B	**Coordinate System**	Equatorial	**Convention**	Radio	Group 1
	Equinox	J2000			
	Right Ascension	15:45:06.34	**Ref. Frame**	LSRK	
		00:00:00.0			
	Declination	-34:43:18	**Velocity**	0.00	
		00:00:00			

Sessions:

Name	Session Time (hours)	Repeat	Separation	LST minimum	LST maximum	Elevation Minimum
Session 1	2.00	1	0 day	14:45:00	16:45:00	0

Session Constraints:

Name	Constraints	Comments

Session Source/Resource Pairs:

Session Name	Source	Resource	Time	Figure of Merit	Subarray
Session 1	Core B	Resource 1	2.0 hour	0.005 mJy/bm	

Present for observation: yes Staff support: Consultation Plan of Dissertation: no