Observing Application

Date :	Apr, 18 2012
Proposal ID :	VLA/12A-469
Legacy ID :	AG887
PI :	Neeraj Gupta
Type :	Director's Discretionary Time - Exploratory Time
Category :	Extragalactic Structure
Total Time :	3.0

Identifying potential targets for the molecular absorption line survey with JVLA

Abstract:

The molecular absorption lines at radio wavelengths can be used to trace the evolution of molecular gas in the galaxies. These lines can also provide the strongest constraints on the variation of fundamental constants of physics. However, only 5 molecular absorption line systems are known. Through our 21-cm absorption line survey we have identified 5 sight lines that show signatures of reddening by dust and the presence of cold gas is already confirmed by the detection of strong 21-cm absorption. In order to assess the feasibility of a molecular absorption line survey based on these targets for the August/1/2012 proposal deadline, we require continuum flux density measurements for these sources at various frequencies in the 1-50GHz range. We request here the X-, K- and Ka-band observations of these sources. Proposed observations along with the archival data will allow us to determine the 1-50GHz SEDs for these targets, and plan for the full absorption line survey proposal to search for molecular absorption lines (e.g. NH3, HCO+, CS, CO) at 0.1<z<1.3. Any configuration, including the upcoming array move times (C to CnB and CnB to B) will be acceptable.

Authors:

Name	Institution	Email	Status
Neeraj Gupta	Netherlands Foundation for Research in Astronomy	gupta@astron.nl	
Emmanuel Momjian	National Radio Astronomy Observatory	emomjian@nrao.edu	
Raghunathan Srianand	Inter-University Centre for Astronomy and Astrophysics	anand@iucaa.ernet.in	
Patrick Petitjean	Institut d' Astrophysique de Paris	ppetitje@iap.fr	
Pasquier Noterdaeme	Institut d' Astrophysique de Paris	noterdaeme@iap.fr	

Principal Investigator: Neeraj Gupta
Contact: Neeraj Gupta
Telephone: +31 (0) 521 595 782
Email: gupta@astron.nl

Related proposals:

Joint:

Not a Joint Proposal

Observing type(s):

Continuum

VLA Resources

Name	Conf.	Frontend & Backend	Setup
K	Any	K Band 1.3 cm 18000 - 26500 MHz WIDAR OSRO, Dual Polarization	Rest frequencies: 19500, 25000 MHz Subband Bandwidth: 128.0 MHz No. of Channels: 128 Poln. products: 2.0 Channel Width: 1000.0 kHz Total Bandwidth: 2,048.00 MHz
Ka	Any	Ka Band 0.9 cm 26500 - 40000 MHz WIDAR OSRO, Dual Polarization	Rest frequencies: 37000, 30000 MHz Subband Bandwidth: 128.0 MHz No. of Channels: 128 Poln. products: 2.0 Channel Width: 1000.0 kHz Total Bandwidth: 2,048.00 MHz
X	Any	X Band 3.6 cm 8000 - 12000 MHz WIDAR OSRO, Dual Polarization	Rest frequencies: 8500,11500 MHz Subband Bandwidth: 128.0 MHz No. of Channels: 128 Poln. products: 2.0 Channel Width: 1000.0 kHz Total Bandwidth: 2,048.00 MHz

Sources:

Name	Position		Velocity		Group
J1639+1127	**Coordinate System**	Equatorial	**Convention**	Redshift	Quasars
	Equinox	J2000			
	Right Ascension	16:39:56.35	**Ref. Frame**	Barycentric	
		00:00:00.0			
	Declination	+11:27:58.7	**Redshift**	0.0791	
		00:00:00.0			
J0942+0623	**Coordinate System**	Equatorial	**Convention**	Redshift	Quasars
	Equinox	J2000			
	Right Ascension	09:42:21.98	**Ref. Frame**	Barycentric	
		00:00:00.0			
	Declination	+06:23:35.3	**Redshift**	0.1230	
		00:00:00.0			
J0852+3435	**Coordinate System**	Equatorial	**Convention**	Redshift	Quasars
	Equinox	J2000			
	Right Ascension	08:52:44.0	**Ref. Frame**	Barycentric	
		00:00:00.0			
	Declination	+34:35:40.0	**Redshift**	1.3095	
		00:00:00.0			
J0850+5159	**Coordinate System**	Equatorial	**Convention**	Redshift	Quasars
	Equinox	J2000			
	Right Ascension	08:50:42.0	**Ref. Frame**	Barycentric	
		00:00:00.0			
	Declination	+51:59:11.0	**Redshift**	1.3265	
		00:00:00.0			
J0849+5108	**Coordinate System**	Equatorial	**Convention**	Redshift	Quasars
	Equinox	J2000			
	Right Ascension	08:49:57.97	**Ref. Frame**	Barycentric	
		00:00:00.0			
	Declination	+51:08:29.0	**Redshift**	0.3120	
		00:00:00.0			