

# **Observing Application**

Date: Jun, 29 2013 Proposal ID: VLA/13A-537 Legacy ID: AS1234

PI: Jillian Scudder

Type: Director's Discretionary
Time - Exploratory Time

Category: Extragalactic Structure

Total Time: 6.5

Gas flows in interacting galaxies: what governs star formation triggering?

#### Abstract:

We propose to use the VLA's C configuration to observe the remaining 5 of 17 interacting galaxy pairs in our original sample, selected from the SDSS DR7. This data will form the last part of J. Scudder's PhD thesis, and when added to the 12 galaxy pairs already observed, will enhance the sample, and therefore our results, by 30%. Our sample is of galaxy pairs highly enhanced in SFR relative to a mass, redshift, and environment matched control (non-interacting) galaxies. We wish to probe whether the gas fraction within a sample of strongly interacting galaxies is the dominant parameter governing the magnitude of a given merger's SFR enhancement. We select a sample of interacting star forming galaxies in roughly equal mass mergers that can be cleanly resolved with the VLA C configuration. Individual HI masses will be obtained for each galaxy in the interaction; combining HI masses with SDSS stellar masses will allow us to calculate the gas fraction. We will then be able to determine if a correlation exists between the HI gas fraction and a galaxy's SFR enhancement. We request 6.5 hours of total observing time for the completion of this project.

## Authors:

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# Related proposals:

12A-061

#### Joint:

Not a Joint Proposal

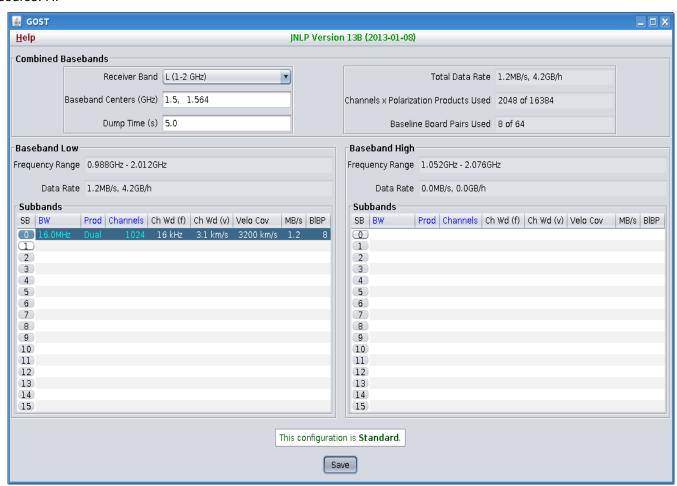
# Observing type(s):

Spectroscopy, Single Pointing(s)

### **VLA Resources**

Name	Conf.	Frontend & Backend	Setup
HI	С	L Band 20 cm 1000 - 2000 MHz General and Shared Risk Observing - Spectral Line	Rest Frequencies: 1420.405752

Resource: HI



# Sources:

Name	Position		Velocity		Group
587727178473930875	Coordinate System	Equatorial	Convention	Radio	Pair 587727178473930875
	Equinox	J2000	Convention		
	Right Ascension	04:05:45.3	Ref. Frame	LSRK	
		00:00:00	Nei. Flaille		
	Declination	-6:54:51.1	Velocity	9914.4	
		00:00:00	Velocity		
	Calibrator	No			