



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	C	L Band 20 cm 1000 - 2000 MHz General and Shared Risk Observing - Spectral Line	Rest Frequencies: 1420.405752

Resource: HI

GOST
_ □ ×

JNLP Version 13B (2013-01-08)

Help

Combined Basebands

Receiver Band: L (1-2 GHz)

Baseband Centers (GHz): 1.5, 1.564

Dump Time (s): 5.0

Total Data Rate: 1.2MB/s, 4.2GB/h

Channels x Polarization Products Used: 2048 of 16384

Baseline Board Pairs Used: 8 of 64

Baseband Low

Frequency Range: 0.988GHz - 2.012GHz

Data Rate: 1.2MB/s, 4.2GB/h

Subbands

SB	BW	Prod	Channels	Ch Wd (f)	Ch Wd (v)	Velo Cov	MB/s	BIBP
0	16.0MHz	Dual	1024	16 kHz	3.1 km/s	3200 km/s	1.2	8
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								

Baseband High

Frequency Range: 1.052GHz - 2.076GHz

Data Rate: 0.0MB/s, 0.0GB/h

Subbands

SB	BW	Prod	Channels	Ch Wd (f)	Ch Wd (v)	Velo Cov	MB/s	BIBP
0								
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								

This configuration is **Standard**.

Save

Sources:

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