Observing Application

Date :	Jun, 29 2010
Proposal ID :	VLA/10B-231
Legacy ID :	AS1060
PI :	Kathryn Stanonik
Type :	Rapid Response - Exploratory Time
Category :	Extragalactic
Total Time :	3.0

Extremely Extended HI in the Local Void

Abstract:

As part of a study of the evolution of galaxies in voids, we have completed detailed HI imaging of ESO 461-036, the only known galaxy in the local void. Observations at the VLA in CnB configuration revealed that ESO 461-036 has one of the most extended HI disks ever detected, with an HI extent nearly 5 times that of the stellar disk. Careful examination of the edge of the disk reveal that it is not exponentially truncated as in typical galaxies, suggesting it may extend even further. Comparison of the VLA CnB-array total flux with the HIPASS total flux shows we are missing a significant fraction (about 1/3) of the HI emission. We suspect there is a diffuse component, missed without the shortest antenna baselines, extending this disk even further into the void. As void galaxies are uniquely situated to carefully study how galaxies get their gas and form stars, we request 3 hours of D or DnC to constrain the full extent of this unusual galaxy. There is time pressure for these observations, as they are important to the PhD thesis of Kathryn Stanonik, who will be defending before the next DnC cycle arrives.

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Related proposals:

Joint:

Not a Joint Proposal

Observing type(s):

Spectroscopy

VLA Resources

Name	Conf.	Frontend & Backend	Setup
array	D=> DnC	L Band 20 cm 1000 - 2000 MHz WIDAR OSRO2: 1 Subband/Dual polz	Rest frequencies: 1420.40575 MHz Bandwidth: 4.0 MHz No. of Channels: 256 Poln. products: 2.0 Channel Width: 15.625 kHz

Sources:

Name	Position		Velocity		Group
ESO 461-36	**Coordinate System**	Equatorial	**Convention**	Optical	Tully Void Galaxy
	Equinox	J2000			
	Right Ascension	20:03:57.0	**Ref. Frame**	Barycentric	
		00:00:00.0			
	Declination	-31:40:54	**Velocity**	427	
		00:00:00			

Sessions:

Name	Session Time (hours)	Repeat	Separation	LST minimum	LST maximum	Elevation Minimum
obs	3.00	1	0 day	18:00:00	22:00:00	20

Session Constraints:

Name	Constraints	Comments

Session Source/Resource Pairs:

Session Name	Source	Resource	Time	Figure of Merit	Subarray
obs	ESO 461-36	array	3.0 hour	1 mJy/bm	

Present for observation: no Staff support: None Plan of Dissertation: yes