science

YORK UNIVERSITÉ UNIVERSITY

PHAS Colloquium:

The Life Cycle of Nearby Galaxies: internal and external processes regulating their gas content

DATE: November 13th, 2018
TIME: 2:30 PM
LOCATION: PSE 317

SPEAKER

Toby Brown
McMaster University

THERE WILL BE SNACKS

ALL ARE WELCOME

ABSTRACT

Every star in our Milky Way, and in all other galaxies, was born from the collapse of a cloud of hydrogen gas. The importance of cold gas in galaxy evolution is therefore well established, as is its role as a probe of recent environmental effects on galaxies. However, sensitivity limitations mean the extent to which internal and external processes drive variations in the gas-star formation cycle of galaxies remains unclear. In this talk I will show how we take full advantage of the powerful atomic hydrogen spectral stacking technique to overcome this obstacle and provide strong observational evidence of significant and systematic environment driven gas stripping across the group regime, well before galaxies enter the cluster. This was accomplished using the largest sample of atomic gas and multi-wavelength information then available (28,000 galaxies), selected according to stellar mass (M*>10^9 Msol) and redshift (0.02 <= z <= 0.05) only. Finally, I will show how state-of-the-art observations of molecular gas in local Ultra-Luminous Infrared Galaxies can be used to test if the star formation process (and the initial distribution of stellar masses) differs fundamentally between galaxies.

Image Description: Andromeda galaxy in the infrared.
Image Credit: ESA/Herschel/PACS/SPIRE/J. Fritz, U. Gent; X-ray: ESA/XMM Newton/EPIC/W. Pietsch, MPE
Poster Designed By: Neil McCall (neiltmcl@my.yorku.ca)