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# 国台学术报告 NAOC COLLOQUIUM

2016年 第30次 / No. 30 2016

**Time: Wednesday 2:30 PM, Oct. 12**      **Location: A601 NAOC**

## The Milky Way as a Laboratory for Galaxy Evolution

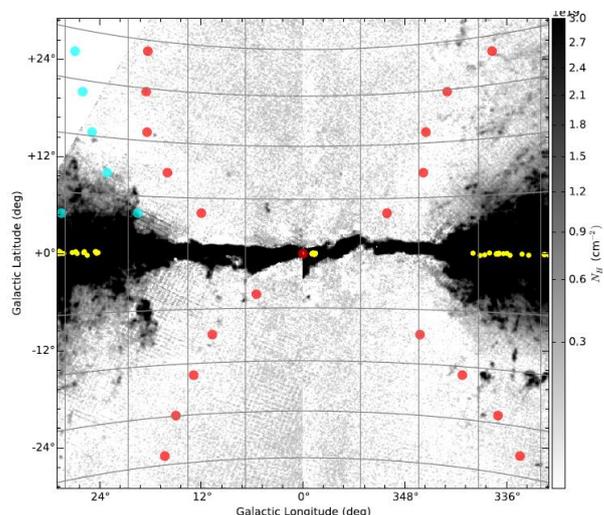
**Prof. Naomi McClure-Griffiths**

**Australian National University(ANU), Australia**

Naomi McClure-Griffiths is a Professor of Radio Astronomy and Australian Research Council Future Fellow at the Australian National University (ANU) in Canberra, Australia from early 2015. McClure-Griffiths got her undergraduate degree in Physics at Oberlin College (1997) and her PhD in Astrophysics at the University of Minnesota (2001). She was a Bolton Fellow at the CSIRO Australia Telescope National Facility, a CSIRO Science Leader (2006 -2011), Deputy Head of Astrophysics and the Head of National Facility Science. McClure-Griffiths is currently a principal investigator on the planned Milky Way survey with the Australian Square Kilometre Array Pathfinder (ASKAP) and the Head of National Facility Science at CSIRO Astronomy & Space Science. She is also involved in science planning for the Square Kilometre Array and a member of the International SKA Science and Engineering Advisory Committee.

### Abstract

Galaxies are not closed box systems. Their evolution is impacted both by gas lost from the disk via large-scale outflows and gas accreted via various processes of inflow. Many simulations of galaxy formation and evolution have highlighted the importance of feedback in reproducing the observable Universe. Galactic winds are the dominant form of galaxy-scale feedback observed in the nearby and high-redshift Universe. Often emanating from the nuclei of massive galaxies, Galactic winds can circulate hot, enriched gas within a galaxy's halo and out of its gravitational potential to enrich the surrounding intergalactic medium. And while we know these effects are on-going, examples where we can observe them in detail are limited. The nuclear wind of the Milky Way provides one of the closest laboratories for Galactic winds in a non-starburst galaxy. The Milky Way's wind has been the topic of great scrutiny in the past 5 years following the discovery of the Fermi Bubbles, showing that the highly energetic wind extends to  $\sim 8$  kpc. Recently we have found evidence in 21cm HI emission for voids several kpc in size centered approximately on the Galactic center, both above and below the Galactic plane. These appear to map the boundaries of the Galactic nuclear wind, and anti-correlate with the Fermi Bubbles. In this talk I will describe how atomic hydrogen emission data on the Galactic Centre is helping us to probe the outflow of the Milky Way's nuclear wind. While gas is constantly lost from the Galaxy via the nuclear wind and other Galactic winds, gas must also accrete onto the Milky Way to help the galaxy maintain its star formation rate. I will discuss new insights into the nature of gas in the halo and what role it might play in gas inflow.



*All are welcome! Tea, coffee, biscuits will be served at 2:15 PM.*