

# 国台学术报告 NAOC COLLOQUIUM

2014 年 第 03 次 / Number 03 2014

**TIME: Tuesday, 2:30 PM, Jan. 14 2014**      **LOCATION: A601 NAOC**

## The Evolution of the Milky Way Ecosystem

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**CSIRO Astronomy & Space Science**

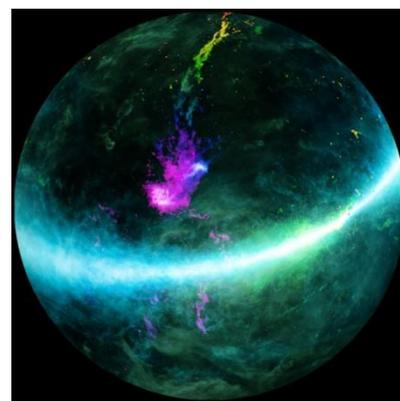


Dr Naomi McClure-Griffiths is the Deputy Astrophysics Group Leader at Australia's CSIRO Astronomy & Space Science, where she leads the Galactic Interstellar Medium group with the aim of better understanding the structure and evolution of our own Milky Way. She has led three

major surveys of hydrogen gas in and around our Galaxy. Currently McClure-Griffiths is a principal investigator on the planned Galactic Australian SKA Pathfinder (GASKAP) survey to map the hydrogen and hydroxyl gas in the Milky Way and Magellanic System. In 2006 she was awarded the Prime Minister's Malcolm McIntosh Prize for Physical Scientist of the Year for her discovery of a new spiral arm in the outer Milky Way. McClure-Griffiths started with CSIRO in 2001 as a Bolton Fellow, from 2006 she was a CSIRO OCE Science Leader. She completed her PhD in Astrophysics at the University of Minnesota in Minneapolis, MN, USA and her undergraduate in Physics at Oberlin College in Oberlin, OH, USA. She holds an Honorary appointment at the University of Sydney.

### Abstract

The Universe is made up of galaxies, each is effectively an island of stars each with its own ecosystem. Understanding the evolution of these ecosystems, including their interactions with their surroundings is a major topic driving astrophysics research. If we are to understand how galaxies evolve we must first understand the physics of their evolution in environments we can observe in detail. Our own Galaxy, the Milky Way, and its galactic neighbours, the Small and Large Magellanic Clouds, provide us with the closest laboratories for studying the evolution of gas in galaxies, particularly how galaxies acquire fresh gas to fuel their continuing star formation, how they circulate gas and how they turn warm, diffuse gas into molecular gas and ultimately, stars. In this talk I will focus on recent results in the broad field of Milky Way evolution, including how large stellar wind powered supershells contribute to the formation of molecular gas, how these same supershells populate the lower halo of the Galaxy with cold gas and how magnetic fields may help our Galaxy feed itself. In each of these areas new surveys planned for the Australian SKA Pathfinder will revolutionise our understanding by providing us with high sensitivity, parsec-scale resolution data on warm and cold gas in the Milky Way, Magellanic Stream and Magellanic Clouds.



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