MEDIA RELEASE

NEWS FROM THE UNIVERSITY OF TASMANIA

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ATTENTION: Chiefs of Staff, News Directors

Funding lets project examine the stars

A UTAS research project investigating “galactic cannibalism” has been awarded $260,000 in funding from the Australian Government.

Project leader Dr Andrew Cole, from the UTAS School of Physics, said the project will be undertaken in partnership with the Indian Institute of Astrophysics.

Innovation Minister Senator Kim Carr announced on Monday that nine projects had been awarded $2.7 million from Round 4 of the Indo-Australian Science and Technology Fund, which is a component of the Australia-India Strategic Research Fund.

The project is titled *From the Magellanic Clouds to the Milky Way: A new understanding of galaxy structure and interactions based on kinematics of 5000 stars*.

The Magellanic Clouds are the visually brightest nearby galaxies to our own galaxy, the Milky Way, visible to the naked eye in the far southern sky on summer nights from locations far from city lights.

“They are so nearby that they may be caught in the gravitational grip of our galaxy, slowly falling into the Milky Way where they will eventually lose their distinct identity and become a part of the Milky Way,” he said.

Dr Cole said this was an exciting prospect because theories of galaxy formation predict that this sort of "galactic cannibalism" is a critical feature in the formation of all galaxies.

“In order to understand the interaction and history of the Magellanic Clouds, especially as they relate to our own galaxy, it is necessary to understand the orbits and distribution of their stars,” Dr Cole said.

“Our proposal seeks to do this by measuring the orbital speeds of 3000 stars in the Large Cloud and 2000 stars in the Small Cloud.

Dr Cole said the number of stars is set by the requirement to statistically distinguish between competing scenarios for the origin of the bar-like and irregular features in their appearance.

“Using a terrestrial analogy, our current view of the Magellanic Clouds resembles a snapshot of a collision between two trains.

“We can get a rough idea of what happened from the snapshot, but in order to learn the exact instant of the collision, and the relative sizes and speeds of the two trains, we need to measure the trajectories of all of the pieces of wreckage as they fly away from the scene of the impact.

“The work we do here will capture that information and allow us to deduce the nature of the interaction in this triplet of galaxies (the two clouds and the Milky Way),’ Dr Cole said.

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