MEDIA RELEASE

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ATTENTION: Chiefs of Staff; News Directors

Milky Way home to 'gas snakes'

This is the Milky Way as you've never seen it before. The first published image of turbulent gas in our galaxy – based on data collected by a team which included the University of Tasmania's Professor John Dickey – has been likened to a pit of writhing snakes.

The picture, published by the journal *Nature* today, shows that the space between the stars is filled with gas that continually swirls and churns. "This is the first time anyone has been able to make a picture of this interstellar turbulence," said lead author Professor Bryan Gaensler of the University of Sydney. "People have been trying to do this for 30 years."

Using the CSIRO's Australia Telescope Compact Array, tuned to receive radio waves, the team studied a region of the Milky Way about 10,000 light-years away in the constellation Norma.

Prof Dickey, of the UTAS School of Mathematics and Physics and a co-author of the paper, says the data was taken 12 years ago, "but it has turned out to be a very rich and interesting area".

"The radio emission that is unpolarised presents a fairly normal picture of the Milky Way disk, with cosmic rays and magnetic fields causing bright areas, particularly where new stars are forming. But when we studied the polarised emission, we saw structures that were completely different from the pictures that have been done before. It took several years for us to understand the physical processes that shape the linear polarisation at radio frequencies," Prof Dickey said.

"Professor Gaensler has led the work of interpretation and follow-up on the polarised images of this region. The results in this *Nature* paper bring together the observations and the theoretical modelling to finally give a complete explanation for the images that we first saw those many years ago."

Image credit – B. Gaensler et al. Data: CSIRO/ATCA.

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