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Neutron stars and the race for gravitational wave detection

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ABSTRACT:
A massive worldwide effort is currently underway to build detectors sensitive enough to detect gravitational waves. These waves are produced whenever massive objects are in motion, and neutron stars in binary systems are but one of the candidates for detection. Neutron stars posess extreme densities, temperatures, and spin rates, and despite much observational and theoretical effort there remains substantial uncertainty about just what goes on inside these objects. I will describe the properties and physics behind these exotic objects, and explain how X-ray and optical observations are used to probe their interiors as well as preparing for future gravitational wave searches.

SPEAKER PROFILE:
Dr Duncan Galloway grew up in Tasmania, and studied at the University of Tasmania, in Hobart. Following his undergraduate degree he worked for five years as an oceanographer before returning to study in the field of astrophysics. He spent five years in postdoctoral positions at the Massachusetts Institute of Technology in Boston USA, where he established his research career with X-ray studies of accreting neutron stars, and returned to Australia to take up fellowships first at the University of Melbourne and then Monash University.
Dr Galloway is presently an ARC Future Fellow at Monash University.

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