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Fall 2020 Colloquium

Department of Physics & Astronomy, A&M-Commerce

Set 17, Thursday, 4-5 PM in Science Building 127

(Live Zoom Presentation)

Astronomy

Some of the things binary stars do

Dr. Jan Eldridge

University of Auckland, New Zealand



I obtained my MA and MSci degrees from the University of Cambridge in 2001. I stayed at the University to study for my PhD in astrophysics at the Institute of Astronomy, graduating in 2005. After this she undertook postdoctoral research at the Institut d'Astrophysique de Paris, Queen's University Belfast and the Institute of Astronomy. In 2011 I was appointed as a Lecturer of Astrophysics at The University of Auckland. My research is focussed upon the lives and deaths of stars. Most of my work involves the suite of computer codes I have created, the Binary Population and Spectral Synthesis code (BPASS, bpass.auckland.ac.nz). Using BPASS I study stars in our own Galaxy to stars in the galaxies at the edge of the observable Universe. In addition to my research activities I am also keen to participate in public understanding of science activities and have helped out at open days for previous departments. I have also given many public talks in Inverness, Chester, Antrim and Cambridge. My talks are on various subjects such as: "The Birth, Life and Death of Stars", "Stars in their death throes" and "Supernova Kicks and Runaway Stars". More information can be found at <https://jjeldridge.blogs.auckland.ac.nz/>

Abstract

Most of the stars in the Universe are not single like our Sun but in binary stars systems. A binary star is composed of two stars in orbit around each other, as they age they can "get-in-each-others" way and experience very different evolution to that of our stars like our Sun. Only over the last decade it has become clear that to accurately understand the Universe we need to take account of these interacting binary stars. In my talk I will go over a few examples showing how understanding binary stars allows us to understand the appearance of galaxies, the diversity of supernovae, the production of the most abundant and rarest elements and the production of gravitational wave transients.