

Spring 2018 Colloquium

Department of Physics & Astronomy, TAMU-Commerce

Feb 08, Thursday, 4-5 PM in Science Building 127

(coffee and cookies will be served at 3:50 PM)

Astronomy

Stellar Necroscopy in the Old Open Cluster Messier 67

Dr. Kurtis Williams

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Dr. Kurtis Williams was born in Indiana and grew up in the Amish Country of southeastern Pennsylvania. He obtained bachelor's degrees in both physics and astronomy from Penn State University, then spent a year as a Fulbright Scholar in Munich Germany before pursuing graduate studies. Dr. Williams earned his PhD in Astronomy & Astrophysics from the University of California, Santa Cruz, though he never learned to surf. He then spent a postdoc studying gravitational lenses at the University of Arizona before receiving a National Science Foundation Astronomy & Astrophysics Postdoctoral Fellowship to study white dwarfs at the University of Texas at Austin. Dr. Williams was hired as faculty at Texas A&M University-Commerce in the fall of 2010.

Abstract

Open star clusters have long been used to study stellar evolution and to test models of stellar evolution. White dwarfs, the endpoint of stellar evolution for most stars, provide the (literally) ultimate test for stellar evolution. But due to the intrinsic faintness of white dwarfs, it is only recently that open cluster studies have been able to include white dwarf data. Messier 67 (M67) is one of the primary open clusters for stellar studies. It is around 4 Gyr in age, has a metal content nearly identical to the Sun, has a high number of confirmed members, and is relatively nearby. Using some of the first membership determinations for white dwarfs in M67, my colleagues and I have completed a comprehensive study of the white dwarf population. We are able to place limits on the spread in total mass loss during a stellar lifetime, to identify white dwarfs that likely resulted from stellar mergers, and to compare the cluster white dwarf population to that of the field. I also look ahead to some of the science that should be possible with a modicum of additional data, some of which we just obtained last week. Students who tell me without prompting what constellation Messier 67 is located in win a prize for reading this abstract, but please don't tip off your friends.