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Virtual Section Meeting

Friday, February 4, 5:00 PM

Join via Zoom Meeting
https://fgcu-edu.zoom.us/j/93962061010?pwd=bThURlRDVTE2dXZLMHQxNVMzV2pLdz09

Dr. Derek Buzasi

Department of Chemistry & Physics
Florida Gulf Coast University

Keeping in Touch with Our Relatives in the Milky Way

4.6 billion years ago, our Sun formed as part of a stellar nursery, a cluster of hundreds or thousands of similar stars with the same age and initial composition. However, that cluster wasn't gravitationally bound, so within a few hundred million years at most our young family dispersed without leaving any forwarding addresses. If we could find those other stars, we could use them to better understand the circumstances of the formation of our Sun and stars like it. Even more excitingly, we could search our twins and near-twins for planets and even habitable planets – after all, we know life successfully arose at least once in that long-ago cluster! In this talk, I'll describe how astronomers determine the elemental and isotopic composition of stars, along with their ages and masses, why those measurements are key to identifying our long-lost siblings, and the status of our ongoing search of the nearby Milky Way.

Dr. Derek Buzasi is Whitaker Eminent Scholar in Florida Gulf Coast University's Department of Chemistry and Physics. Derek received his undergraduate degree in physics from the University of Chicago, and his PhD in astronomy from Penn State University. He has worked at a variety of institutions, including the National Center for Atmospheric Research, Johns Hopkins University, the California Institute of Technology, the US Air Force Academy, and the University of California at Berkeley. Derek has published more than 200 papers and has also worked on a variety of major instrument teams, including as Detector Scientist for the Cosmic Origins Spectrograph, part of the Hubble Space Telescope's most recent upgrade, and Principal Investigator for the Wide-Field Infrared Explorer satellite. He served on the Science Team for NASA's planet-finding Kepler mission, and currently works on NASA's Transiting Exoplanet Survey Satellite (TESS) mission, where he leads an international Coordinated Activity for the TESS Asteroseismic Science Consortium. Derek's research interests include almost anything having to do with stars. He began by studying various aspects of stellar (and solar) activity, such as spots, flares, and winds, and has done both observations and theoretical work, including radiative transfer modeling and magnetohydrodynamic models of stellar flux tubes. More recently, he has moved from studying stellar atmospheres and environments to studying stellar interiors and convection through the use of asteroseismology. Derek also works on computer modeling, particularly of nonlinear systems, and is co-author of the chapter on Computational Astrophysics in the CRC Computer Science Handbook. Derek is also a reserve Navy Engineering Duty Officer with the rank of Captain; his current assignment is with Portsmouth Naval Shipyard in Kittery, Maine.

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