



PHYSICS COLLOQUIUM: The Morphology and Structure of Spiral Galaxies

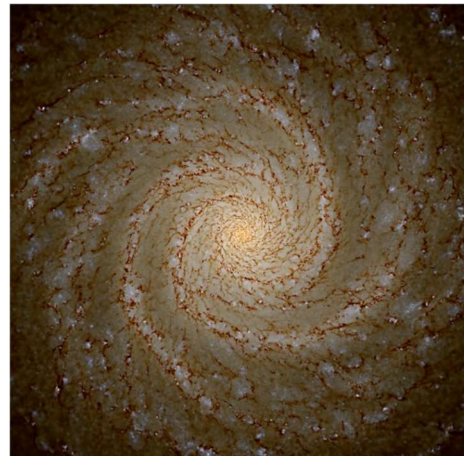
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About The Speaker:

Dr Pettitt, a British astrophysicist specializing in the structure and evolution of galaxies, conducted his undergraduate studies at Durham University in Northern England and postgraduate studies at the University of Exeter where he received his Ph.D. in Astrophysics in 2014. He then took a postdoctoral researcher position at Hokkaido University in northern Japan and soon after advanced to assistant professor helping to build up the university's international academic science program. He joined the Physics and Astronomy Department at Sac State in the Fall of 2021.



Date:

12/9/2022

Time:

10:30 am – 11:50 am

Location:

KOLLIG 217

Abstract:

Spiral galaxies, like our Milky Way, are some of the most striking objects in astronomy. Modern observational efforts have unveiled a wealth of detailed information concerning their gaseous and stellar components, providing unprecedented insights into their properties, such as internal dynamics and star-forming potential. However, understanding what drives their structure and evolution is extremely difficult due to their highly complex nature. Numerical simulations allow us a unique tool to study them in great detail and to better guide models of how real galaxies behave. In this talk I will present numerical work by myself and my students that investigates how a galaxy's structure impacts its properties, including what kind of physical processes determine whether a given galaxy is a good "star formation engine". Of particular interest are the distinct morphological components of a given galaxy, such as spiral arms and bars, with many standing issues concerning the exact role they play.

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