New Mexico Tech
Department of Physics

COLLOQUIUM

Thursday, April 17, 2025
4pm Workman 101

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TESS Warm Jupiters and Their Companions

There are now over 5800 confirmed exoplanets, but many questions remain regarding how planets form and evolve. Over 2400 of these planets are part of multi-planet systems, yet no system discovered so far resembles our own solar system. Nonetheless, multi-planet systems are essential to probe planet formation and evolution. In particular, systems with warm gas giant planets are promising as these planets bridge the gap between the well-studied hot gas giant population and the cold gas giants in our solar system. The launch of the Transiting Exoplanet Survey Satellite (TESS) has led to the discovery of dozens of warm Jupiters, increasing the existing sample by nearly 70%. Additionally, many of these planets orbit bright stars that are ideal for follow-up observations to characterize their masses, orbits, and atmospheres as well as to search for additional planets. I present my current and future work to detect and characterize these systems and detail three specific warm Jupiter systems and describe what we have learned about them, and what we stand to learn with future observations. Finally, I describe how these systems and others like them inform different planet formation and evolution theories.