

Laura Kriedberg – Astronomy seminar 9/27/2017

Title: Exoplanet Atmosphere Characterization, Present and Future

Abstract: We now know that exoplanets abound in the Galaxy, with most stars hosting at least one planet. These recently discovered worlds are much more diverse than the planets in the Solar System, and raise many questions about their formation, evolution, and habitability. To address these questions, we turn to atmosphere characterization, which provides a wealth of additional information about the planets. I will discuss the state of the art in atmosphere studies, focusing on recent high-precision, space-based observations of hot Jupiters and warm Neptunes. These studies have already revealed planetary atmospheric chemistry, climate, and cloud coverage in unprecedented detail, and they are poised for a revolutionary advance thanks to the upcoming launch of the James Webb Space Telescope. I will conclude with a discussion of prospects for future observations with JWST, including the characterization of temperate, terrestrial planets.