Biography

Stanley A. Baronett is a graduate research assistant in the Department of Physics and Astronomy at the University of Nevada, Las Vegas (UNLV), where he conducts broad research on computational astrophysics. Originally from Las Vegas, he received a Philosophy B.A. and M.A. from the University of Hawai‘i at Mānoa. After working full-time as an IT consultant back in Las Vegas, he completed a Computational Physics B.S. at UNLV. His current goal is to earn an Astronomy M.S. and Ph.D. from UNLV with aspirations toward an academic career in astrophysics.

His current research project focuses on the streaming instability (SI). Analogous to the effect of slipstreaming and drafting, the SI is a robust, aerodynamic mechanism to concentrate dust in gaseous protoplanetary disks to form planetesimals, the building blocks of planets, and overcome the radial-drift barrier in planet formation. Using ultramodern astrophysical code and high-performance computing facilities at NASA to model various disk conditions and locations, he is exploring the SI’s formation efficiency, and the dominant component pebbles which form, in some of the most realistic dust-gas simulations to date. Results may reveal the origins of the asteroids, targets of Jet Propulsion Laboratory’s Dawn and Psyche missions.