TENLEY HUTCHINSON-SMITH

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Education

University of California, Santa Cruz **June 2019 - present**
Department of Astronomy and Astrophysics
Ph.D. Candidate

Spelman College **September 2015 - May 2019**
Bachelor's of Science; Physics

Selected Publications

"Rethinking Thorne-Żytkow Object Formation: The Fate of X-ray Binary LMC X-4 and Implications for Ultra-long Gamma-ray Bursts" **Hutchinson-Smith, T.,** Everson, R.W., et al. 2024, The Astrophysical Journal

"Rethinking Thorne-Żytkow Object Formation: Assembly via Common Envelope in Field Binaries" Everson, R.W., **Hutchinson-Smith, T.**, et al. 2024, The Astrophysical Journal

"The Evolution of Galactic Bar Structure and Host Galaxy Properties at Intermediate Redshift: Results from Galaxy Zoo" **Hutchinson-Smith, T.**, Simmons, B.D., et al. 2025 (in prep; estimated submission Dec. 2025)

"A Hydrodynamic Library for Luminous Red Novae from Mildly Evolved Binary Progenitors: Predictive Fitting Relations for Population Synthesis" **Hutchinson-Smith, T.**, Twum, A., et al. 2026 (in prep; estimated submission Jan. 2026)

Research Experience

Graduate Student Researcher **June 2019 - present**
University of California, Santa Cruz
Studies interacting stellar systems, common-envelope and TŻO-like merger pathways involving neutron stars and black holes, and galaxy structure. Uses MESA and FLASH to model common-envelope mergers and X-ray binary orbital evolution, develops predictive models for luminous red novae, and leads a Galaxy Zoo study of bar structure and host-galaxy properties at intermediate redshift.

Intern - Smithsonian Astrophysical Observatory (SAO) REU **June 2018 - August 2018**
Harvard Smithsonian Center for Astrophysics
Investigated the light curves of X-ray binary systems to search for evidence of passing planets and X-ray flares. Used 19 years of archived data from the Chandra X-ray Observatory.

Intern - The Banneker and Aztlán Institutes **June 2017 - August 2017**
Harvard Smithsonian Center for Astrophysics
Calculated extinction and optical depths from galactic centers in the Illustris Simulation. Made predictions for what fraction of light we can observe from active galactic nuclei.

Intern - Summer Training Academy for Research Experience (STARS) **June 2016 - August 2016**
University of California, San Diego
Investigated galactic bars and bar lengths in the early universe using Galaxy Zoo and Hubble Space Telescope data.

Teaching Experience

Graduate Teaching Assistant **September 2024 - December 2024**
University of California, Santa Cruz
Introduction to the Cosmos; Taught three discussion sections per week. Designed lectures, physics problems, games, activities, and graded class assignments and tests.

Graduate Teaching Assistant **January 2021 - March 2021**
University of California, Santa Cruz
Introduction to the Cosmos; Taught three discussion sections a week. Designed lectures, physics problems, activities, and graded class assignments and tests.

Invited Talks

Physics & Astronomy Colloquium Series **March 18th, 2024**
San Francisco State University
“Challenging the Standard Paradigm of Thorne-Żytkow Object Formation”

Selected Conference Presentations

HEAD 21 Meeting **April 12th, 2024**
Stellar/Compact IV Oral Session
“Challenging the Standard Paradigm of Thorne-Żytkow Object Formation”

Skills

Software
FLASH (3D hydro), MESA (binary & stellar evolution), yt (3D visualization)

Programming Skills
Python, Fortran, LaTeX

Selected Awards and Honors

UC-HBCU Initiative Fellowship	**September 2019 - September 2024**
AAS Chambliss Winner	**January, 2019**
Selected participant in FUTURE of Physics program at Caltech	**2018**
Spelman College Women in Science and Engineering Undergraduate Program (WiSE UP) Scholarship	**2018**
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