Tess Kleanthous

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EDUCATION

Tufts University   Medford, MA
Master of Science in Physics: Astrophysics   May 2026
Cumulative GPA: 4.00

Tulane University   New Orleans, LA
Bachelor of Science in Engineering, Certificate in Computational Engineering   Aug 2023
Major: Engineering Physics, Minor: French
Cumulative GPA: 3.67

Harvard University Extension School   Remote
Intensive Introduction to Computer Science   Jun 2022 – Aug 2022
Data Mining, Discovery, and Exploration   Jun 2023 – Aug 2023

Other Coursework: Greek (Preply, Nov 2023 – present), French (Preply, Nov 2024 – present), Spanish (Preply, July 2025 – present), Cosmology (Audited at Tufts University, Spring 2025)

AWARDS AND HONORS

NASA Space Grant Consortium Graduate Fellowship (Fall 2025)
Tufts University Merit Scholarship (33% of Tuition)
Tulane University Merit Scholarship ($30,000 per year)
Tulane University Dean's List (Fall 2019, Spring 2020, Fall 2022, Spring 2023)
Tulane University Leadership Medallion (2023)
The William F. Tompkins Jr. Memorial Award (2023)

PUBLICATIONS AND RESEARCH OUTPUTS

Kleanthous, T. et al. *"A Robust Pipeline for TESS Eclipsing Binaries: Detrending, Period Validation, Eclipse Modeling, and Vetting."* – Lead author (in prep).

Tubthong, W. et al. *"Small Circumbinary Planet Abundance"* – Co-author on a study of Kepler circumbinary planet occurrence rates utilizing the *Stanley* algorithm (in prep).

Stanley Code Repository. – Public release of the *Stanley* pipeline source code on GitHub (Dec 2025).

RESEARCH AND INDUSTRY EXPERIENCE

Tufts University   Medford, MA
Graduate Research Assistant | Graduate Teaching Assistant   Sep 2024 – Present

- **Research:**
  - Developed a robust pipeline for TESS eclipsing binaries, incorporating detrending, period validation, eclipse modeling, and secondary-vetting to enable automated circumbinary planet searches.
  - Optimized the *Stanley* algorithm for high-throughput photometric analysis and ran injection–retrieval experiments to quantify completeness and reliability.
- **Teaching:**
  - Supported *Intermediate Mechanics* and *Wanderers in Space* courses (30–100+ students).
  - Held office hours, graded projects/exams, and provided in-class assistance.

Lockheed Martin – Space   Littleton, CO
Software Engineer Associate | Systems Engineer Intern   Jun 2023 – May 2024

- **Software Engineering:**
  - Built in-house analytical tools for mission processing as a full-stack developer.
  - Designed a satellite modeling module using circular restricted three-body dynamics (C++/JavaScript).
- **Systems Engineering:**
  - Designed a framework for a global mesh satellite network to support R&D initiatives.

Newcomb Tulane Institute's Technology Lab   New Orleans, LA
Developer Intern   Aug 2022 – May 2023

- Delivered digital scholarship projects for faculty in an agile framework, including database development, UX/UI, web design, and digital archiving.

Tulane MakerSpace — New Orleans, LA
Fabrication Technician — Jun 2022 – May 2023

- Trained students and faculty on 3D printers, laser cutters, and shop tools; conducted Metal I training.
- Provided instruction in Inkscape, Cura, Fusion 360, and Epilog Engraver.

ASTROPHYSICS PROJECTS

MCMC Modeling of Stellar Activity (CM Draconis)

- Applied Bayesian parameter inference for stellar light-curve modeling using multi-walker MCMC chains with burn-in and convergence diagnostics.
- Produced trace plots, residual analyses, and best-fit overlays to characterize starspot-induced modulation.

Synthetic Eclipsing Binary Populations

- Performed statistical analyses of orbital periods, eccentricities, and stellar radii from synthetic population models.
- Identified significant discrepancies in period and eccentricity distributions, indicating that observed eclipsing binaries are not representative of the intrinsic population.

Compact Objects: White Dwarfs & Neutron Stars (Final Presentation)

- Derived and analyzed the equations of state and hydrostatic balance governing white dwarfs and neutron stars.
- Demonstrated the role of electron and neutron degeneracy pressure in supporting stellar remnants and derived the Chandrasekhar limit.

PROFESSIONAL AFFILIATIONS/ORGANIZATIONAL INVOLVEMENT

Tufts Graduate Physics & Astronomy Student Society — Medford, MA
Member — Sep 2024 – Present

- Attend meetings to discuss program progression with other graduate students.
- Support community-building initiatives and represent graduate student perspectives in departmental discussions.

Order of the Engineer — New Orleans, LA
Member — May 2023 – Present

- Inducted upon completion of undergraduate coursework, pledging to uphold professional integrity, ethical responsibility, and the dignity of the engineering profession.

Nu Epsilon Chapter of Theta Tau, Professional Engineering Fraternity — New Orleans, LA
Professional Development Chair | Academics Chair | Member — Feb 2021 – Jun 2023

- Elected to Academic and Professional Development Chair positions by a fraternity of 100+ members.
- Led committees and organized events advancing members' academic achievement and professional growth.

Tulane Chapter of Society of Women Engineers — New Orleans, LA
Treasurer | Member — Feb 2021 – Jun 2023

- Spearheaded sponsor coordination, fund allocation, and grant applications to support chapter initiatives.
- Collaborated with the Executive Board to deliver inclusive programming and mentorship opportunities for women in STEM.

DESIGN WORK

HeartFelt (Senior Capstone, Tulane University)

- First joint capstone between Engineering Physics and Biomedical Engineering departments.
- Integrated a haptic feedback system with OR catheterization equipment in collaboration with Mount Sinai clinicians.

Traverse (Harvard Extension, CS Intensive)

- Developed a full-stack social app for travelers (Python, SQLite, HTML/CSS/JavaScript).
- Implemented login/authentication, user profiles, feeds, and message boards.

Kinesthet-X (Product & Experimental Design, Tulane)

- Co-developed a laser-projected physical therapy instrument designed to reduce musculoskeletal strain and support guided rehabilitation exercises.
- Designed and fabricated the prototype enclosure and integrated control circuitry.

COMMUNITY SERVICE INVOLVEMENT

Tulane ENGP Mentor Program – Paired with undergraduate students to provide mentorship and career guidance in engineering physics.

Letters to a Pre-Scientist – Wrote letters to a "pre-scientist" throughout their school year to encourage academic growth and foster a good relationship with STEM.

WORKSHOPS, CONFERENCES, AND SEMINARS

Tufts' Student Accessibility & Academic Resources Graduate Writing Retreat (in-person, 2025)

Tufts' Astronomy and Physics Colloquia (in-person, Sep 2024 – present)

Tufts' Astronomy Paper Discussion (in-person, Sep 2024 – present)

Society of Women Engineers Conference (virtual: 2021, in-person: 2022, 2025)

Grace Hopper Conference (virtual, 2022)

Johnson & Johnson Root Cause Analysis Workshop (virtual, 2021)

SKILLS

Software: MATLAB, C++, C, Python, Java, JavaScript, HTML, CSS, Fusion 360, Cameo Systems Modeler
Language: English (Native), French (Intermediate), Greek (Beginner), Spanish (Beginner)