

# Tess Kleanthous

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## EDUCATION

### Tufts University

Master of Science in Physics: Astrophysics  
Cumulative GPA: 4.00

Medford, MA  
May 2026

### Tulane University

Bachelor of Science in Engineering, Certificate in Computational Engineering  
Major: Engineering Physics, Minor: French  
Cumulative GPA: 3.67

New Orleans, LA  
Aug 2023

### Harvard University Extension School

Intensive Introduction to Computer Science  
Data Mining, Discovery, and Exploration

Remote  
Jun 2022 – Aug 2022  
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 (anticipated Dec 2025).

## RESEARCH AND INDUSTRY EXPERIENCE

### Tufts University

Graduate Research Assistant | Graduate Teaching Assistant

Medford, MA  
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

Software Engineer Associate | Systems Engineer Intern

Littleton, CO  
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

Developer Intern

New Orleans, LA  
Aug 2022 – May 2023

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

- 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.
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## **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.
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## **PROFESSIONAL AFFILIATIONS/ORGANIZATIONAL INVOLVEMENT**

### **Tufts Graduate Physics & Astronomy Student Society**

*Member*

Medford, MA  
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**

*Member*

New Orleans, LA  
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**

*Professional Development Chair | Academics Chair | Member*

New Orleans, LA  
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**

*Treasurer | Member*

New Orleans, LA  
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.
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## **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.

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## 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.

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## 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)

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## SKILLS

**Software:** MATLAB, C++, C, Python, Java, JavaScript, HTML, CSS, Fusion 360, Cameo Systems Modeler

**Language:** English (Native), French (Intermediate), Greek (Beginner), Spanish (Beginner)