

# Tess Kleanthous

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## EDUCATION

<b>Tufts University</b> Master of Science in Physics: Astrophysics Cumulative GPA: 4.00	Medford, MA May 2026
<b>Tulane University</b> Bachelor of Science in Engineering, Certificate in Computational Engineering Major: Engineering Physics, Minor: French Cumulative GPA: 3.67	New Orleans, LA Aug 2023
<b>Harvard University Extension School</b> Intensive Introduction to Computer Science Data Mining, Discovery, and Exploration	Remote Jun 2022 – Aug 2022 Jun 2023 – Aug 2023
<b>Other Coursework:</b> Greek (Preply, Nov 2023 – present), French (Preply, Nov 2024 – present), Spanish (Preply, July 2025 – present)	

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## 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)

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## RESEARCH AND INDUSTRY EXPERIENCE

<b>Tufts University</b> <i>Graduate Research Assistant   Graduate Teaching Assistant</i>	Medford, MA Sep 2024 – Present
<ul style="list-style-type: none"><li>• <b>Research:</b><ul style="list-style-type: none"><li>• Developed a robust pipeline for TESS eclipsing binaries, incorporating detrending, period validation, eclipse modeling, and secondary-vetting to enable automated circumbinary planet searches.</li><li>• Optimized the Stanley algorithm for high-throughput photometric analysis and ran injection–retrieval experiments to quantify completeness and reliability.</li><li>• Lead author on a manuscript describing the pipeline (in preparation).</li></ul></li><li>• <b>Teaching:</b><ul style="list-style-type: none"><li>• Supported <i>Intermediate Mechanics</i> and <i>Wanderers in Space</i> courses (30–100+ students).</li><li>• Held office hours, graded projects/exams, and provided in-class assistance.</li></ul></li></ul>	
<b>Lockheed Martin – Space</b> <i>Software Engineer Associate   Systems Engineer Intern</i>	Littleton, CO Jun 2023 – May 2024
<ul style="list-style-type: none"><li>• <b>Software Engineering:</b><ul style="list-style-type: none"><li>• Built in-house analytical tools for mission processing as a full-stack developer.</li><li>• Designed a satellite modeling module using circular restricted three-body dynamics (C++/JavaScript).</li></ul></li><li>• <b>Systems Engineering:</b><ul style="list-style-type: none"><li>• Designed a framework for a global mesh satellite network to support R&amp;D initiatives.</li></ul></li></ul>	
<b>Newcomb Tulane Institute's Technology Lab</b> <i>Developer Intern</i>	New Orleans, LA Aug 2022 – May 2023
<ul style="list-style-type: none"><li>• Delivered digital scholarship projects for faculty in an agile framework, including database development, UX/UI, web design, and digital archiving.</li></ul>	

- 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)**

- Bayesian parameter inference for light-curve models (priors, likelihoods, posterior sampling).
- Multi-walker chains with burn-in; autocorrelation and trace-based convergence diagnostics.
- Trace plots, residual QA, and best-fit overlays for star-spot modulation.

### **Synthetic Eclipsing Binary Populations**

- Statistical analysis of periods, eccentricities, and stellar radii from population synthesis.
- Period and eccentricity distributions return significantly low p-scores, showing eclipsing binaries are not representative of the overall population.
- Stellar radii yield relatively high p-scores, indicating consistency with the overall population in size.

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

- Final presentation for a graduate-level Statistical Mechanics course.
  - Examined equations of state and hydrostatic balance, highlighting the role of electron and neutron degeneracy pressure.
  - Derived the Chandrasekhar limit and analyzed neutron-star stability.
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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 into the Order of the Engineer upon completion of undergraduate coursework.
- The Order of the Engineer is an association for graduate and professional engineers that is devoted to upholding the standards and 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 Academics Chair and Professional Development Chair positions by fraternity of 100+ brothers.
- Organized events that focused on the academic and professional development of members.
- Spearheaded committees of 3–7 people that facilitated events.

### **Tulane Chapter of Society of Women Engineers**

*Treasurer | Member*

New Orleans, LA  
Feb 2021 – Jun 2023

- Elected to Treasurer position by a society of 15+ members.
  - Spearheaded sponsor coordination, fund allocation, as well as grant application for the group.
  - Worked with Executive Board to provide insightful and inclusive learning experiences to women in STEM.
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## DESIGN WORK

### HeartFelt (Senior Capstone, Tulane University)

- First joint capstone between Engineering Physics and Biomedical Engineering.
- 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)

- Designed a laser-projected physical therapy instrument to alleviate musculoskeletal strain with 2 other students in Tulane's Engineering Physics Department.
  - Engineered enclosure and circuitry for the prototype.
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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 Colloquium (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

**Technical:** Epilogue Engraver, 3D Printing

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

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