Tess Kleanthous

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EDUCATION

Tufts University — Medford, MA
Master of Science in Physics: Astrophysics — Jun 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)

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)

RESEARCH AND INDUSTRY EXPERIENCE

Tufts University — Medford, MA
Graduate Research Assistant — Sep 2024 – present

- 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.
- Lead author on a manuscript describing the pipeline (in preparation).

Graduate Teaching Assistant — Sep 2024 – May 2025

- 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 — Sep 2023 – May 2024

- 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 Engineer Intern — Jun 2023 – Aug 2023

- 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)

- 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.

Orbital Elements Visualizer (Interactive Teaching Tool)

- Built a 3D, browser-embeddable visualizer for orbital geometry and Keplerian motion (Plotly + ipywidgets).
- Supports two animation modes: true-anomaly sweep and physical time propagation with velocity vectors and trails.
- Includes angle sectors (node longitude, inclination, argument of periapsis, true anomaly), node/periapsis guides, and export-to-HTML for demos.

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.

Order of the Engineer New Orleans, LA
Member 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 New Orleans, LA
Professional Development Chairman Jul 2022 – Jun 2023
Academics Chairman Jan 2022 – May 2022
Member 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 New Orleans, LA
Executive Board Member, Treasurer Aug 2022 – Jun 2023

Member 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.

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)

- Team-designed a laser-projected physical therapy instrument to alleviate musculoskeletal strain.

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.
- Education in a Diverse Society at Catholic Charities Archdiocese of New Orleans – Assisted and led English as a Second Language classes.

WORKSHOPS, CONFERENCES, AND SEMINARS

Tufts' Student Accessibility & Academic Resources Graduate Writing Retreat (in-person, 2025)
Tufts' Astronomy and Physics Colloquium (weekly, in-person, Sep 2024 – present)
Tufts' Astronomy Paper Discussion (weekly, student-led, in-person, Sep 2024 – present)
Society of Women Engineers Conference (virtual: 2022, in-person: 2023, 2025)
Grace Hopper Conference (virtual, 2023)
Johnson & Johnson Root Cause Analysis Workshop (virtual, 2021)

SKILLS

Technical: Epilogue Engraver, 3D Printing
Software: MATLAB, C++, C, Python, Java, JavaScript, HTML, CSS, Inkscape, Cura, Fusion 360, Google Suite, Adobe Suite, Microsoft Office, Cameo Systems Modeler
Language: English (Native), French (Intermediate), Greek (Beginner), Spanish (Beginner)
Arts: Acrylic Painting, Oil Painting, Ceramic Sculpting, Procreate, Paint 3D