

# Anastasios Tzanidakis

University of Washington, Department of Astronomy, Seattle, WA

☎ +1 347-703-9210 | ✉ atzanida@uw.edu | 🏠 andytza.github.io | 📺 AndyTza

## Education

### University of Washington (UW)

Ph.D. in Astronomy. Advisors: James Davenport, Eric Bellm

Seattle, WA

Sep. 2021 - Present

### University of Washington (UW)

Master of Science (MSc) in Astronomy. Advisors: James Davenport, Eric Bellm.

Seattle, WA

Sep. 2021 - May 2023

### Columbia University

Bachelor of Arts (BA) in Astronomy. School of General Studies. Advisor: Kathryn Johnston.

New York, NY

Sep. 2016 - May 2019

### LaGuardia Community College, City University of New York (CUNY)

Honors Associate of Science (AS) in Natural Sciences and Mathematics. Advisor: Allyson Sheffield.

Long Island City, NY

Sep. 2013 - May 2016

## Academic Interests

My research focuses on time-domain astronomy, with particular expertise in stellar variability, circumstellar environments, and planetary system evolution. I am passionate about developing and applying scalable, open-source software tools to tackle large astronomical datasets. My research focuses on real-time discovery pipelines, characterization of anomalous stellar systems using major astronomical time-domain surveys (Gaia, ZTF, and LSST). Beyond research, I am deeply committed to science outreach. I served as the former director of the University of Washington Planetarium, organized several astronomy coding workshops, and produced public programs that promote education and accessibility in STEM.

## Publications (ADS)

1. **Tzanidakis, A.** and Davenport, J. R. A. *Gaia-GP1: An Evolving Catastrophic Planetesimal Collision*. 2025 (in preparation)
2. **Tzanidakis, A.**, Davenport, J. R. A., Caplar, N., et al. *A Systematic Search for Main-Sequence Dipper Stars Using the Zwicky Transient Facility*. Accepted for publication in The Astrophysical Journal, 2025 (arXiv:2508.03964)
3. Davenport, J. R. A., Chabour Barra, F., Bostroem, K. A., et al. (including **Tzanidakis, A.**), *Automated Spectroscopic Wavelength Calibration using Dynamic Time Warping*, Submitted to AJ, 2025 (arXiv:2508.05862)
4. Gollotti, G., **Tzanidakis, A.**, Wainer, J., and Davenport, J. R. A. *Two Intriguing Transits of HIP 23309 Observed by TESS*, RNAAS, **8**, 293, 2024
5. **Tzanidakis, A.**, Davenport, J. R. A., Bellm, E., et al. *Gaia17bpp: Discovery of a Giant Star with the Deepest and Longest Known Eclipse*, ApJ, **955**, 69, 2023 (arXiv:2306.12409)
6. **Tzanidakis, A.** and Bellm, E. *Periodicity Analysis in Alert Production*, Vera C. Rubin Observatory Data Management Technote, DMTN-221, 2023 ([dmtn-221](#))
7. Anand, S., Barnes, J., Yang, S., et al. (including **Tzanidakis, A.**), *Collapsars as Sites of r-process Nucleosynthesis: Systematic Photometric Near-infrared Follow-up of Type Ic-BL Supernovae*, ApJ, **962**, 2024 (arXiv:2210.05729)
8. Das, K., Kasliwal, M., Ahumada, T., et al. (including **Tzanidakis, A.**), *Probing the Low-mass End of Core-collapse Supernovae Using a Sample of Strongly-stripped Calcium-rich Type IIb Supernovae from the Zwicky Transient Facility*, ApJ, **959**, 2023 (arXiv:2210.05729)
9. Corsi, A., Ho, A. Y. Q., Cenko, S. B., et al. (including **Tzanidakis, A.**), *A Search for Relativistic Ejecta in a Sample of ZTF Broad-lined Type Ic Supernovae*, ApJ, **953**, 2023 (arXiv:2210.09536)
10. Das, K., Kasliwal, M., Sollerman, J., et al. (including **Tzanidakis, A.**), *Probing pre-supernova mass loss in double-peaked Type Ibc supernovae from the Zwicky Transient Facility*, ApJ, **972**, 91, 2024 (arXiv:2210.05729)
11. Ho, A. Y. Q., Perley, D. A., Gal-Yam, A., et al. (including **Tzanidakis, A.**), *A Search for Extragalactic Fast Blue Optical Transients in ZTF and the Rate of AT2018cow-like Transients*, ApJ, **949**, 2023 (arXiv:2105.08811)
12. Shivkumar, H., Jaodand, A., Balasubramanian, A., et al. (including **Tzanidakis, A.**), *SN2019wxt: An Ultra-stripped Supernova Candidate Discovered in the Electromagnetic Follow-up of a Gravitational Wave Trigger*, ApJ, **952**, 86, 2023 (arXiv:2208.09010)

13. Sit, T., Kasliwal, M., **Tzanidakis, A.**, et al., *Long-rising Type II Supernovae in the Zwicky Transient Facility Census of the Local Universe*, ApJ, **959**, 2, 2023 (arXiv:2306.01109)
14. De, K., Kasliwal, M., **Tzanidakis, A.**, et al., *The Zwicky Transient Facility Census of the Local Universe. I. Systematic Search for Calcium-rich Gap Transients Reveals Three Related Spectroscopic Subclasses*, ApJ, **905**, 58, 2020 (arXiv:2004.09029)
15. De, K., Kasliwal, M., Hankins, J. M., et al. (including **Tzanidakis, A.**), *A population of heavily reddened, optically missed novae from Palomar Gattini-IR: Constraints on the Galactic nova rate*, ApJ, **912**, 2021 (arXiv:2101.04045)
16. Perley, D. A., Fremling, C., Sollerman, J., et al. (including **Tzanidakis, A.**), *The Zwicky Transient Facility Bright Transient Survey II. A Public Statistical Sample for Exploring Supernova Demographics*, ApJ, **904**, 35, 2020 (arXiv:2009.01242)
17. Strotjohann, N. L., Ofek, E. O., Gal-Yam, A., et al. (including **Tzanidakis, A.**), *Bright, Months-long Stellar Outbursts Announce the Explosion of Interaction-powered Supernovae*, ApJ, **907**, 99, 2021 (arXiv:2010.11196)
18. Andreoni, I., Kool, C. E., Carracedo, S. A., et al. (including **Tzanidakis, A.**), *Constraining the Kilonova Rate with Zwicky Transient Facility Searches Independent of Gravitational Wave and Short GRB Triggers*, ApJ, **904**, 2, 2020 (arXiv:2008.00008)
19. Kasliwal, M., Anand, S., Ahumada, T., et al. (including **Tzanidakis, A.**), *Kilonova Luminosity Function Constraints based on Zwicky Transient Facility Searches for 13 Neutron Star Mergers*, ApJ, **905**, 2020 (arXiv:2006.11306)
20. Andreoni, I., Goldstein, D., Kasliwal, M., et al. (including **Tzanidakis, A.**), *GROWTH on S190814bv: Deep Synoptic Limits on the Optical/Near-Infrared Counterpart to a Neutron Star-Black Hole Merger*, ApJ, **890**, 131, 2020 (arXiv:1910.13409)
21. Laporte, F. P. C., Johnston, K. V., **Tzanidakis, A.**, *Stellar Disk Streams as Probes of the Galactic Potential and Satellite Impacts*, MNRAS, **482**, 1427, 2018 (arXiv:1803.11198)
22. Sheffield, A. A., Price-Whelan, A. M., **Tzanidakis, A.**, Johnston, K. V., et al., *A Disk Origin for the Monoceros Ring and A13 Stellar Overdensities*, ApJ, **854**, 47, 2018 (arXiv:1801.01171)

## Software

---

Cardoso, J. V.; Barentsen, G.; Hedges, C. et al. (including **Tzanidakis, A.**) *Lightcurve: Kepler and TESS Time Series Analysis in Python*, Astrophysics Source Code Library, 2018 (ascl: 1812.013)

## Teaching

---

### Graduate Student Teaching Assistant and Co-Lead Study Abroad Program: Pacific Indigenous Astrophysics Program

O'ahu, HI

Actively serving as a graduate student teaching assistant (TA) in the Department of Astronomy, contributing to the introductory and upper-level undergraduate astronomy and science outreach courses. Responsibilities also include one-on-one support with students, leading sections, grading, and providing support to teaching faculty.

Sep. 2021 - Present

### Graduate Student Teaching Assistant of Astronomy

Seattle, WA

Actively serving as a graduate student teaching assistant (TA) in the Department of Astronomy, contributing to the introductory and upper-level undergraduate astronomy and science outreach courses. Responsibilities also include one-on-one support with students, leading sections, grading, and providing support to teaching faculty.

Sep. 2021 - Present

### Undergraduate Teaching Assistant of Astronomy

Seattle, WA

Columbia University, Department of Astronomy and Astrophysics. Grading for upper-class Astrophysics class.

Jan. 2018 - May 2019

### Mathematics Lead Tutor and Mentor

Harlem, NY

Columbia University, Tutoring and Learning Center (TLC), Wadleigh Secondary School. Algebra tutoring for middle school students with a focus on numeracy and studying techniques. The role also expanded for 4 months leading a team of mathematics undergraduate tutors.

Sep. 2016 - Sep. 2017

## Observing

---

### An Evolving Planetesimal Impact Candidate (PI; Directors Discretionary Time)

Awarded 1.2 hrs on the South African Large Telescope (SALT).

Instruments: Robert Stobie Spectrograph (RSS), Jan. 2025.

### Characterizing Main-Sequence Dipper Stars (PI)

Awarded 4 hrs on the Southern Astrophysical Research (SOAR) 4.1-meter Telescope.

Instruments: Goodman Spectrograph

### Characterization of Long Deep Stellar Eclipses in Gaia Photometric Alerts (PI)

Apache Point Observatory (APO), ARC 3.5m.

Instruments used: KOSMOS, ARCTIC

### Supernovae Classification for the ZTF Survey (Co-I)

Hale 200-inch Telescope, Palomar Observatory.

Instruments: DBSP, WIRC

### AGN Variability with Kepler/K2 (PI; Directors Discretionary Time)

Kepler Space Telescope/K2

## Outreach and Leadership

---

### Director of the University of Washington Planetarium

Seattle, WA

Directed and organized over 900+ free planetarium shows, engaging the greater Seattle community, with an annual visit rate of over 4,000 participants. Each year, I saw and direct 30 active undergraduate and graduate volunteers at the UW Planetarium. My role also includes the active facilitation of science communication resources for planetarium presenters and programs to strengthen the communication skills of the planetarium presenters. Responsibilities have also expanded to forge valuable partnerships within the broader UW community and other departments, leveraging the UW planetarium space to promote workshops on art, wellness, physical health, history, and culture.

Sep. 2022 - June 2025

### DiRAC Summer Undergraduate Research Mentor

Seattle, WA

Proposed, and awarded \$8,000 for research funds to support undergraduate students (summer 2023 and 2024).

Supervised undergraduate student research on behalf of the DiRAC institute.

June 2023 - Present

### Pre-Major in Astronomy Undergraduate Research Mentor

Seattle, WA

September 2023, 2024, 2025

### Global Relay of Observatories Watching Transients Happen (GROWTH) Research Mentor

Remote

Mentored one MSc student from the University of Amsterdam on transients and supernovae using data from the Zwicky Transient Facility (ZTF) survey.

Sep. 2020 - Sep. 2021

### Founder of Astronomy Podcast: StarBites

Sep. 2017 - May 2019

Developed an undergraduate astronomy podcast with colleagues at Columbia University. StarBites successfully united and provided a safe space for our undergraduate student community to practice science communication and learn about the history of astronomy by developing unique and compelling science history stories.

## Highlighted Talks & Posters

---

### Science

#### A Photometric Census of Main-Sequence Dipper Stars: Clues and Phenomenology

INVITED SEMINAR SPEAKER, COFFEE TALK, UNIVERSITY OF HAWAII AT MANOA INSTITUTE FOR ASTRONOMY, HI, 2025 (TALK)

INVITED SEMINAR SPEAKER, YOUNG STARS READING GROUP, CALIFORNIA INSTITUTE OF TECHNOLOGY, CA, 2025 (TALK)

INVITED SEMINAR SPEAKER, PIZZA LUNCH SEMINAR SERIES, MICHIGAN STATE UNIVERSITY, MI, 2025 (TALK)

INVITED LUNCH SPEAKER, STARS AND PLANETS GROUP, UNIVERSITY OF MICHIGAN, MI, 2025 (TALK)

#### A Systematic Search for Main-Sequence Dipper Stars using the Zwicky Transient Facility

AMERICAN ASTRONOMICAL SOCIETY WINTER MEETING 245, MD, 2025 (POSTER)

LSST INTERDISCIPLINARY NETWORK FOR COLLABORATION AND COMPUTING (LINCC) FRAMEWORKS - TECH TALK, 2024 (TALK)

NOIRLAB RARE GEMS IN BIG DATA CONFERENCE, TUSCON, AZ, 2024 (TALK)

HOTWIRING THE TRANSIENT UNIVERSE VI, TORONTO, CA, 2024 (TALK)

LINCC FRAMEWORKS UNIVERSITY OF WASHINGTON LUNCH TALK, WA, 2024 (TALK)

#### Discovery of the Deepest and Largest Known Giant Blinking Star: Gaia17bpp

AMERICAN ASTRONOMICAL SOCIETY MEETING 241, PRESS RELEASE AND SCIENCE TALK, 2023 (TALK)

INSTITUTE FOR DATA INTENSIVE RESEARCH IN ASTROPHYSICS AND COSMOLOGY (DIRAC) LUNCH TALK, 2023 (TALK)

#### ZTF Census of the Local Universe: Luminosity Function of Type II Supernovae

AMERICAN ASTRONOMICAL SOCIETY MEETING 237, 2021 (TALK)

NATIONAL SCIENCE FOUNDATION, SITE VISIT FOR ZTF-II, 2024 (TALK)

## Probing the Dynamic Evolution of the Milky Way Using Stellar Substructures

SENIOR THESIS – ASTRONOMY SEMINAR, COLUMBIA UNIVERSITY, NY, 2019 (TALK)  
AMERICAN ASTRONOMICAL SOCIETY (AAS), MEETING 233, 2019 (POSTER)  
AMERICAN ASTRONOMICAL SOCIETY (AAS), MEETING 232, 2018 (POSTER)  
NATIONAL COLLEGIATE RESEARCH CONFERENCE, HARVARD UNIVERSITY, 2017 (POSTER)  
CUNY RESEARCH SCHOLARS ANNUAL RESEARCH SYMPOSIUM, JOHN-JAY COLLEGE, NY, 2016 (TALK)

## New Tools for AGN Photometry with Kepler Guest Observer Python Package lightkurve

NASA INTERN POSTER SYMPOSIUM, NASA AMES RESEARCH CENTER, CA, 2018 (POSTER)

## Origin of Diffuse Stellar Clouds in the Milky Way: In-situ or Accreted?

CUNY RESEARCH SCHOLARS ANNUAL RESEARCH SYMPOSIUM, JOHN-JAY COLLEGE, NY, 2016 (TALK)  
AMNH SUMMER STUDENT RESEARCH PRESENTATIONS, AMERICAN MUSEUM OF NATURAL HISTORY, NY, 2016 (POSTER)

## Outreach

### When Stars Go Dark

ASTRONOMY ON TAP ROADSHOW, SINGLEHILL BREWERY, YAKIMA, WA, 2025 (TALK)  
ASTRONOMY ON TAP, BICKERSON BREWERY, SEATTLE, WA, 2025 (TALK)  
SMARTY PINTS, BURKE-GILMAN BREWING, SEATTLE, WA, 2025 (TALK)

### Searching for Mysterious Stellar Eclipses in the Milky Way

SEATTLE ASTRONOMICAL SOCIETY (SAS), FEBRUARY, 2024

### Interstellar Insights: SETI Experts on the Hunt for Truth Amidst Misinformation

EMERALD CITY COMIC CON, PANELIST, MARCH, 2024

### An Introduction to Stellar Variability

LINCOLN HIGH SCHOOL, APRIL 2024

### Introduction to Astronomy Outreach with Social Media

DOT-ASTRONOMY-12, FLATIRON INSTITUTE, NEW YORK, 2023 (TALK)

### Cosmic Cinematography with the Vera C. Rubin Observatory

ASTRONOMY ON TAP, PEDDLER BREWING, FEBRUARY, 2022 (TALK)

## Awards & Grants

---

### Research University Alliance (RUA) Research Exchange Travel Award

AWARDED RESEARCH EXCHANGE TRAVEL AWARD, UNIVERSITY OF WASHINGTON

June, 2025

### University of Washington Excellence in Teaching Award

2025 EXCELLENCE IN TEACHING AWARD FINALIST

May, 2025

### Beyond the Stars: Launching the First Interdisciplinary Technologies at the UW Planetarium (Principal Investigator)

Awarded \$72,000 University of Washington Student Technology Fund for technological updates at the UW Planetarium.

Feb., 2025

### UW Astronomy Graduate Student Award of Outstanding Leadership and Service

Awarded \$1,000 for outstanding contributions to public service and leadership.

Oct., 2024

### Astronomy around the Clock: University of Washington Student Technology Fund (Co-I)

Awarded \$14,000 UW Student Technology Fund for solar telescope and observing equipment for public outreach.

June, 2023

### Jacobsen Fund Support for the Discovery of Gaia17bpp

Awarded \$2,500 for partial publication costs for Gaia17bpp research paper published to ApJ.

June, 2022

### Astronomy Ambassador Program (AAP) Fellow, American Astronomical Society

Freshman undergraduate student at the University of Washington, as part of the Pre-Major in Astronomy Program (Pre-MAP). Searching for signatures of black-hole self-lensing candidates with TESS.

Feb., 2022

### CUNY Research Scholar Fellow & Highlighted Research Scholar

RESEARCH FELLOW AT LAGUARDIA COMMUNITY COLLEGE, CITY UNIVERSITY OF NEW YORK (CUNY).

2015 - 2016

# Student Mentorship

---

## Giovanni Gollotti

Senior undergraduate student at the University of Washington. Characterization of a Young Dipper Star Discovered in TESS: HIP 23309. Co-advised with Tobin Wainer and James Davenport. **AAS 245 Chambliss award finalist.**

Seattle, WA

June 2024 - Present

## Cassidy Johnson

Investigation of a ZTF planetesimal collision dipper star. Undergraduate student at the University of Washington.

Seattle, WA

Jan. 2025 - Present

## Annika Meunier

University of Washington Honors Program of Interdisciplinary Studies. Developing strategic social media outreach content for UW Astronomy and UW Planetarium.

Seattle, WA

March 2025 - Present

## Tessa Ward

Simultaneous TESS-ZTF observations of main-sequence dipper stars. Undergraduate student at the University of Washington.

Seattle, WA

Jan. 2025 - Present

## Celeste Hagee

Senior undergraduate student at the University of Washington. Building an empirical response function for the epochal BP/RP spectra from the Gaia Photometric Science Alerts using SN Ia.

Seattle, WA

June 2023 - Present

## Elizabeth Pawelka, Miguel Morales, Emma Bacarra

Freshman undergraduate student at the University of Washington, as part of the Pre-Major in Astronomy Program (Pre-MAP). Co-advised with Tom Wagg. Searching for signatures of black-hole self-lensing candidates with TESS.

Seattle, WA

Oct. 2022 - Dec. 2022

## Hinna Shivkumar

Master's student, (currently Ph.D student) at University of Amsterdam. Analysis on SN2019wxt – an ultra-stripped supernova candidate observations from GROWTH and ZTF.

Pasadena, CA

June 2020 - Aug. 2021

# Media Appearances

---

## UW Planetarium and STF to Update Technology for Classic Star-Show Events

THE DAILY UW

[Link](#)

May 2025

## Lunar Eclipse, Meteor Showers and More: Seattle-Area Guide to Stargazing

THE SEATTLE TIMES

[Link](#)

March 2025

## UW Planetarium Turns 30 as Public Showings Remain Popular with Community

THE DAILY UW

[Link](#)

May, 2024

## 10 Washington Road-Trip Spots Recommended by the People Who Know Them Best

THE SEATTLE TIMES

[Link](#)

March, 2024

## The Seven-Year Photobomb: Distant Star's Dimming Was Likely a 'Dusty' Companion Getting in the Way, Astronomers Say

UNIVERSITY OF WASHINGTON NEWS

[Link](#)

January, 2023

## Unusually Brightening Star Captures Attention as a Stellar Oddity

CNN

[Link](#)

January, 2023

## Astronomers Discover Giant Blinking Star

SKY & TELESCOPE

[Link](#)

January, 2023

## Astrophysics Majors Have More Fun: Bwog Peoplehops The Voices Of StarBites

BWOG

[Link](#)

December, 2017