

Anastasios Tzanidakis

University of Washington, Department of Astronomy, Seattle, WA

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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 centers on time-domain astronomy, specializing in stellar variability, circumstellar environments, and planetary system evolution. I develop and apply scalable, open-source software tools for large astronomical datasets, with emphasis on real-time discovery pipelines and characterization of unique stellar systems using premier time-domain surveys. Beyond research, I am deeply committed to education and science outreach as a means to empower youth. I served as the former director of the University of Washington Planetarium and have organized public programs that promote inclusive and accessible educational opportunities for students in STEM.

Publications (ADS)

1. **Tzanidakis, A.** and Davenport, J. R. A. *Gaia-GP1: An Evolving Catastrophic Planetsimal 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*, *ApJ*, **991**, 118, 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. Cardoso, J. V.; Barentsen, G.; Hedges, C. et al. (including **Tzanidakis, A.**) *Lightkurve: Kepler and TESS Time Series Analysis in Python*, Astrophysics Source Code Library, 2018 (ascl: 1812.013)
22. 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)
23. 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)

Teaching

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

O'ahu, HI

Co-led study abroad Pacific Indigenous Astrophysics program, organizing student events; managed and mentored a 20-student cohort in a dynamic field setting (engagement, community-building, logistics); served as TA bridging contemporary astrophysics with Pacific Indigenous wayfinding; participated and assisted with co-organizing 4 public community events for professional development and community organizing.

Aug. 2025 - Sep. 2025

Graduate Student Teaching Assistant of Astronomy

Seattle, WA

Graduate teaching assistant supporting introductory and upper-level undergraduate astronomy courses and science outreach programs. Conducted discussion sections, provided individualized student support, managed grading, and assisted teaching faculty across diverse course offerings: ASTR-150 (planetary science, 2 quarters), ASTR-360 (stellar astrophysics, 1 quarter), ASTR-270 (astronomy public outreach, 3 quarters), and ASTR-567 (Pacific Indigenous Astrophysics, 2 quarters).

Sep. 2021 - Present

Astronomy Ambassador Program (AAP) Fellow, American Astronomical Society

Online

Selected for professional development program training early-career astronomers in effective education and public outreach strategies.

Feb., 2022

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; Director's Discretionary Time)

Awarded 1.2 hrs on The Southern African Large Telescope (SALT).

Instruments: Robert Stobie Spectrograph (RSS)

Characterizing Main-Sequence Dipper Stars (PI)

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

Instruments: Goodman Spectrograph

Radial Velocity TESS Exoplanet Host HIP 23309 (Co-PI: A. Tzanidakis)

Awarded 8 hours on SMARTS-GSU 1.5m.

Instruments: CHIRON

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-PI: A. Tzanidakis)

Hale 200-inch Telescope, Palomar Observatory.

Instruments: DBSP, WIRC

AGN Variability with Kepler/K2 (PI; Director's Discretionary Time)

Kepler Space Telescope/K2, Campaign 30.

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 directed 30 active undergraduate and graduate volunteers at the UW Planetarium. My role 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 - Aug. 2025

DiRAC Summer Undergraduate Research Mentor

Seattle, WA

Proposed, and awarded \$8,000 for research funds to support undergraduate students. Supervised undergraduate student research on behalf of the DiRAC institute.

Summer 2023, 2024

Pre-Major in Astronomy Undergraduate Research Mentor

Seattle, WA

2-month long research mentoring undergraduate freshman-sophomore students at the University of Washington.

2023, 2024, 2025

Founder of Astronomy Podcast: StarBites

Sep. 2017 - May 2019

Developed an undergraduate astronomy podcast with colleagues at Columbia University. StarBites successfully bridged 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.

President of Physics and Astronomy Club, LaGuardia Community College

Long Island City, NY

Founded and led undergraduate physics organization with 10+ members.

2015-2016

Highlighted Talks & Posters

Invited Seminars

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

Coffee Talk, University of Hawai'i at Mānoa Institute for Astronomy, HI, 2025 (Talk)

Young Stars Reading Group, California Institute of Technology, CA, 2025 (Talk)

Pizza Lunch Seminar Series, Michigan State University, MI, 2025 (Talk)

Stars and Planets Group, University of Michigan, MI, 2025 (Talk)

Conference Presentations & Posters

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) Tech Talk, 2024 (Talk)

NOIRLab Rare Gems in Big Data Conference, Tucson, 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, Washington DC, 2023 (Press Release & 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

National Science Foundation, Site Visit for ZTF-II, 2024 (Talk)

American Astronomical Society Meeting 237, 2021 (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 Talks

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 (Talk)

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 for expanding educational capabilities and visualization standards.

Feb., 2025

Optical Technosignatures in Large Surveys (Co-PI: A. Tzanidakis)

Breakthrough Listen Foundation, 2025.

June, 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: UW Student Technology Fund (Co-PI)

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

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.**

Cassidy Johnson

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

Annika Meunier

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

Tessa Ward

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

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.

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.

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.

Community Organizing & Service

Ho‘ākea, Department of Education — Lele Aloha

Graduate student ambassador, and supervising study abroad students on wa'a education.

Lahaina, Maui

Sep., 2025

Voyaging Beyond High School: E Ala Voyaging Academy Halau

Graduate student speaker and panelist.

Wai'anae, O'ahu

Aug., 2025

Professional Development 'Aina-based STEM Educator Day

Led an embodied-learning teaching strategy station on celestial dynamics and sky navigation; served on the organizing team, shaping program organizing and structure.

Wai'anae, O'ahu

Aug., 2025

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