Anastasios Tzanidakis

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Education

University of Washington (UW) — *Seattle, WA*
Doctorate Degree (Ph.D) in Astronomy. P.I James Davenport (jrad@uw.edu) — *Sep. 2021 - Present*

University of Washington (UW) — *Seattle, WA*
Masters of Science (MSc) in Astronomy. P.I James Davenport. — *Sep. 2021 - May 2023*

Columbia University — *New York, NY*
Bachelors of Arts (BA) in Astronomy. Columbia University, School of General Studies. — *Sep. 2016 - May 2019*

LaGuardia Community College, City University of New York (CUNY) — *Long Island City, NY*
Honors Associate of Science (AS) in Natural Sciences and Mathematics. — *Sep. 2013 - May 2016*

Research Experience

University of Washington, Department of Astronomy — *Seattle, WA*
Researcher for the Vera C. Rubin Observatory Legacy Survey of Space and Time (LSST) Data Management and Alert Production team. The primary investigation includes multi-band time series feature classification and evaluation. — *Sep. 2021 - Present*

California Institute of Technology (Caltech), Department of Astrophysics — *Pasadena, CA*
Astronomical data analyst - post-baccalaureate researcher for the Zwicky Transient Facility (ZTF) survey. Co-leading Census of the Local of Universe (CLU) supernova project, with the largest spectroscopic complete supernovae sample in the local universe. — *June 2019 - Aug. 2021*

NASA Ames Research Center, Kepler Guest Observer Office (KGO) — *Mountain View, CA*
Astronomy research and software developer for open-source package LIGHTKURVE. Investigation of AGN variability with K2, and developing tools for LIGHTKURVE. — *June 2018 - Aug. 2018*

Columbia University, Department of Astronomy and Astrophysics — *New York, NY*
Astrophysics undergraduate researcher galactic structure and Galactic archaeology with the *Gaia* spacecraft. Examining Galactic stellar substructure using M-giants and RR Lyrae. — *Sep. 2016 - May 2019*

Publications (ADS)

1. **Tzanidakis. A.** and Davenport, J. R. A. *Gaia-XXXX: 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*. Submitted to ApJ, 2025
3. Gollotti, G.; **Tzanidakis, A.**; Wainer, and Davenport, J. R. A. *Two Intriguing Transits of HIP 23309 Observed by TESS*, RNAAS, **8**, 293, 2024
4. **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)
5. **Tzanidakis, A.**; and Bellm, E.; *Periodicity Analysis in Alert Production*, Vera C. Rubin Observatory Data Management Technote, DMTN-221, 2023 (dmtn-221)
6. 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)
7. 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)
8. 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)
9. 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* , submitted to ApJ, 2023 (arXiv:2210.05729)

10. 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*, **949**, ApJ, 2023 (arXiv:2105.08811)
11. H. Shivkumar, A. Jaodand, A. Balasubramanian, et al. (including **Tzanidakis A.**), *SN2019wxt: An Ultrastripped Supernova Candidate Discovered in the Electromagnetic Follow-up of a Gravitational Wave Trigger*, ApJ, **952**, 86, 2023 (arXiv: 2208.09010)
12. T. Sit, M. Kasliwal, **A. Tzanidakis**, et al., *Long-rising Type II Supernovae in the Zwicky Transient Facility Census of the Local Universe*, ApJ, **959**, 2, 2023 (arXiv:2306.01109)
13. K. De, M. Kasliwal, **A. Tzanidakis**, 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)
14. 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)
15. 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)
16. Strotjohann L. N.; Ofek O. E.; Gal-Yam A. et al. (including **Tzanidakis A.**) *Bright, Months-Long Stellar Outbursts Announce the Explosion of Interaction-Powered Supernovae,* submitted to ApJ, 2020 (arXiv:2010.11196)
17. 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)
18. 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)
19. 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)
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.**) *Lightkurve: Kepler and TESS Time Series Analysis in Python,* Astrophysics Source Code Library, 2018 (ascl: 1812.013)

Employment

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*

Information Technology Specialist — *Seattle, WA*
Columbia University, Graduate School of Journalism. Providing general IT support for Graduate School of Journalism staff, faculty, and business intelligence group. — *Nov. 2017 - 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

Successfully directed and organized over 900 public free planetarium shows, engaging with the greater Seattle community, with an annual visit rate of over 4,000 students. Each year, I oversee 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 - Present

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

Co-mentored a team of three

September 2023, 2024

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

Virtual

Virtually 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

Undergraduate astronomy podcast developed 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, Young Stars Reading Group, California Institute of Technology, CA, 2025 (Talk)
Invited seminar speaker, Michigan State University, MI, 2025 (Talk)
Invited lunch speaker, 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 $72,00 University of Washington Student Technology Fund for technological updates. — *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. — *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 — *Seattle, WA*
Senior undergraduate student at the University of Washington. Characterization of a Young Dipper Star Discovered in TESS: HIP 23309. Co-advised with Tobin Wainer. AAS 245 Chambliss Award finalist. — *June 2024 - Present*

Cassidy Johnson — *Seattle, WA*
Investigation of a ZTF planetesimal collision dipper star. Undergraduate student at the University of Washington. — *Jan. 2025 - Present*

Annika Meunier — *Seattle, WA*
University of Washington Honors Program of Interdisciplinary Studies. Developing strategic social media outreach content for UW Astronomy and UW Planetarium. — *March 2025 - Present*

Tessa Ward — *Seattle, WA*
Simultaneous TESS-ZTF observations of main-sequence dipper stars. Undergraduate student at the University of Washington. — *Jan. 2025 - Present*

Cassidy Johnson, Tessa Ward — *Seattle, WA*
University of Washington freshman undergraduate students part of the UW Pre-Major in Astronomy Program (Pre-MAP). Searching for main-sequence dipper stars in open clusters with ZTF and Gaia. — *Nov. 2024 - Dec. 2024*

Celeste Hagee — *Seattle, WA*
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. — *June 2023 - Present*

Elizabeth Pawelka, Miguel Moralles, Emma Bacarra — *Seattle, WA*
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. — *Oct. 2022 - Dec. 2022*

Hinna Shivkumar — *Pasadena, CA*
Master's student, (currently Ph.D student) at University of Amsterdam. Analysis on SN2019wxt – an ultra-stripped supernova candidate observations from GROWTH and ZTF. — *June 2020 - Aug. 2021*

Media Appearances

UW Planetarium and STF to Update Technology for Classic Star-Show Events — *Link*
The Daily UW — *May 2025*

Lunar Eclipse, Meteor Showers and More: Seattle-Area Guide to Stargazing — *Link*
The Seattle Times — *March 2025*

UW Planetarium Turns 30 as Public Showings Remain Popular with Community — *Link*
The Daily UW — *May, 2024*

10 Washington Road-Trip Spots Recommended by the People Who Know Them Best — *Link*
The Seattle Times — *March, 2024*

The Seven-Year Photobomb: Distant Star's Dimming Was Likely a 'Dusty' Companion Getting in the Way, Astronomers Say — *Link*
University of Washington News — *January, 2023*

Unusually Brightening Star Captures Attention as a Stellar Oddity — *Link*
CNN — *January, 2023*

Astronomers Discover Giant Blinking Star — *Link*
Sky & Telescope — *January, 2023*

Astrophysics Majors Have More Fun: Bwog Peoplehops The Voices Of StarBites — *Link*
Bwog — *December, 2017*