Zack Andalman

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https://www.zandalman.com/ ArXiv

EDUCATION

Princeton University	Princeton, NJ	Ph.D., Astrophysics	4.00 GPA	2023 - 2028
Yale University	New Haven, CT	B.S., Physics	3.95 GPA	2019 - 2023
Evanston Township HS	Evanston, IL	Diploma	4.00 GPA	2015 - 2019

PUBLICATIONS

First-Author: 2

[1] **Andalman, Z. L.**, Teyssier, R., & Avishai, D. (2024).
On the Origin of the High Star-Formation Efficiency in Massive Galaxies at Cosmic Dawn.
Submitted to MNRAS.
(`https://ui.adsabs.harvard.edu/abs/2024arXiv241020530A/abstract`)

[2] **Andalman, Z. L.**; Liska, M. T. P.; Tchekhovskoy, A.; Coughlin, E. R.; & Stone, N. (2022).
Tidal Disruption Discs Formed and Fed by Stream-stream and Stream-disc Interactions in Global GRHD Simulations. MNRAS.
(`https://ui.adsabs.harvard.edu/abs/2022MNRAS.510.1627A/abstract`)

Co-Author: 1

[1] Kaaz, N.; et. al. incl. **Andalman, Z. L.** (2023).
Nozzle Shocks, Disk Tearing and Streamers Drive Rapid Accretion in 3D GRMHD Simulations of Warped Thin Disks. MNRAS.
(`https://ui.adsabs.harvard.edu/abs/2023ApJ...955...72K/abstract`)

In prep: 2

[1] **Andalman, Z. L.**; Quataert, E.; Coughlin, E.; Nixon, C. (2025)
Resolving the (Debate About) Compression in Deeply-Penetrating Tidal Disruption Events. Currently in prep with plans for submissions to the Astrophysical Journal.

[2] **Andalman, Z. L.**; Fryer, C.; Fontes, C.; Mumpower, M. (2025).
Thermalization in Kilonova Ejecta with Detailed Atomic, Nuclear, and Transport Physics. Currently in prep with plans for submissions to the Astrophysical Journal.

PRESENTATIONS

Selected Talks

Inaugural Tinsley workshop	2024
LANL Center for Nonlinear Studies Student Talk Series (1st place student talk)	2024
KITP Program - Towards a Physical Understanding of Tidal Disruption Events	2024
RAMSES User Meeting	2024
HEAD Frontiers Seminar Series	2023
HEAD-19 Conference (invited talk)	2022

Selected Posters

AAS-245 Conference (Chambliss honorable mention)	2025
HEAD-20 Conference (1st place undergraduate poster)	2023
Connecticut Space Grant Consortium Expo	2021, 2022
Blue Waters Symposium for Petascale Science and Beyond	2018, 2019

SKILLS

Computer languages: Python, C, C++, HTML/CSS/Javascript, Unix shell

Software: HPC, OpenMPI, git, `ParaView`, `H-AMR`, `RAMSES`, `Athena++`, `CLOUDY`

Languages: English (native), Spanish (conversational), Modern Greek (basic)

Misc: Triathlon, jazz piano

GRANTS, FELLOWSHIPS, AND AWARDS

DOE Computational Science Graduate Fellowship, Krell Institute — 2023 - 2027

Martin Schwarzschild Fellowship, Princeton University (departmental award) — 2023 - 2025

Michael Manzella Award, Yale University (leadership award) — 2023

Lamat Fellowship (REU), University of California Santa Cruz — 2022

Hahn Scholarship, Yale University — 2019 - 2021
Using Ultracold Strontium to Investigate the Quantum Many-Body Problem

Student Project Grant, Connecticut Space Grant Consortium — 2020
Active-Adjustment Ornithopter, Federal FTE Award P-1643

First-Year Summer Research Fellowship, Yale University — 2020

LEADERSHIP EXPERIENCE

Thunch (thursday lunch) seminar series organizer — 2024

Yale Undergraduate Aerospace Association, President — 2022 - 2023

Yale Undergraduate Aerospace Association, Director of Projects — 2021 - 2022

Yale Club Triathlon, Captain — 2021 - 2022

Yale Undergraduate Aerospace Association, Project Leader — 2020 - 2021

PROFESSIONAL SERVICE

Number of papers refereed
MNRAS: 2

Code contributions: `H-AMR`, `Athena++`, `RAMSES`

Code development: `Thunderstorm`

YouTube channel with scientific visualizations

OUTREACH

Speaker at Astronomy on Tap, Trenton — 2024

Resident astronomer for solar eclipse at Littlebrook Elementary — 2024

Tutor for the New Jersey Prison Teaching Initiative — 2024

Teacher at Yale Splash — 2022

Peer Mentor for the Yale Society for Physics Students — 2022

Organizer of aerospace-themed educational events with New Haven public schools — 2021