Pierson Lipschultz

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Astronomy + Data Science

Research Experience

College of DuPage — Glen Ellyn, IL

Honors Independent Study ⬦ GitHub ⬦ Publication — January 2025 – May 2025

- Authored a paper on mass transfer in binary stars; published in the COD Digital Commons.
- Integrated observational and simulated datasets to cross-validate trends in binary evolution.
- Built Python pipelines to compare ~1,000,000 simulated binaries with observed counterparts.
- Automated typesetting workflows in LaTeX to streamline figure and table generation.

CIERA, Northwestern University — Evanston, IL

REACH Further ⬦ GitHub ⬦ Visualizations — June 2024 – July 2024

- Collaborated with mentor Ilia Kiato on X-ray binary research.
- Cataloged simulation datasets using Python analysis tools.
- Developed Bokeh dashboards and a GitHub Pages site to analyze subpopulations.
- Reproduced natal-kick velocity results for MAXI J1305-704.
- Created explanatory visualizations of paper methods and results.

Education

University of Illinois Urbana–Champaign — Urbana–Champaign, IL

Bachelor of Science in Astronomy & Data Science — Expected May 2028

College of DuPage — Glen Ellyn, IL

Honors Scholar — August 2024 – May 2025

Research Skills

Blender ■■■■■
LaTeX ■■■■□
Python ■■■■□
Pandas ■■■■□
Bokeh ■■■■□
Matplotlib ■■■■□
Git ■■■■□
Tinker ■■■□□
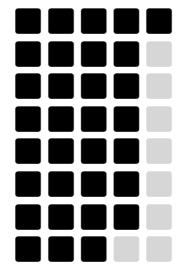
Outreach

President and Founder, *COD Space Club* — Glen Ellyn, IL

https://codspace.club/ — January 2025 – May 2025

- Grew the club to ≈70 members across two semesters.
- Hosted outreach events, including a booth at STEMCON.
- Led observing nights and organized field trips to Fermilab and other sites.

Lead Ambassador, *Stories of Space* — Glen Ellyn, IL

https://www.storiesofspace.com/ — February 2025 – Present

- Lead Mission 4 planning and execution.
- Coordinate large-scale collaborations across partner institutions.
- Market and encourage college student engagement with space initiatives.

Project Head, *High Altitude Weather Balloon Collaboration* — Glen Ellyn, IL

https://sites.google.com/view/stories-of-space-project/ — February 2025 – July 2025

- Coordinated large-scale collaborations across student teams.
- Marketed and promoted participation in space-related projects.
- Led Mission 4 workstream.

Talks

Student Speaker, *College of DuPage* — Glen Ellyn, IL
[COD Library Student Research Symposium](#) — May 2025
- Presented an in-depth exploration of mass transfer in binary stars.

Guest Speaker, *Northwest Suburban Astronomers* — Barrington, IL
https://www.nsaclub.org/ — February 2025
- Presented an overview of binary star properties, including X-ray binaries, mass transfer, and stellar evolution; audience ≈50.

Publications

Photography — Glen Ellyn, IL
Emulsion and Noise — September 2025

Mass Transfer in Binary Stars — Glen Ellyn, IL
[Digital Commons](#) — May 2025

Photography — Glen Ellyn, IL
[Prairie Light Review](#) — May 2025

Press

Curious about astrophotography in C-U? Here's a . . . look at the craft — Champaign-Urbana, IL
[IPM Newsroom](#) — November, 2025

Student Spotlight, *College of DuPage* — Glen Ellyn, IL
https://www.cod.edu/about/stories/students/lipschultz.html — January 2025

STORIES of Space and College of DuPage students . . . weather balloon launch
[Daily Herald](#) — March 2025

Projects

Python Module for Graphing HR Diagrams of POSYDON Datasets
Independent Project ⋄ [Example](#) ⋄ [GitHub](#) — May 2025 – Present
- Enables rapid creation of publication-ready HR diagrams in Matplotlib or Bokeh.
- Generates interactive HTML viewers for quick dataset exploration (*see link*).
- Balances out-of-the-box defaults with deep configuration options.

Custom Astrophotography Mounting Rig
Independent Project ⋄ [Photos](#) — May 2025 – Present
- Designed components in Fusion 360 and iterated via CAD.
- 3D-printed parts in high-strength materials for durable, long-term use.

Art

Photography
Independent and Academic ⋄ [Photographs](#) — December 2024 – Present
- Operate Sony and Canon DSLR workflows; multiple photographs published.

Astrophotography
Independent ⋄ [Photographs](#) — May 2024 – Present
- Assembled a custom rig for faint deep-sky imaging.
- Use tools including NINA, PixInsight, BXT, Siril, and PHD2.