Pierson Lipschultz

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Research Experience

College of DuPage Glen Ellyn, IL
Honors Independent Study ⬦ GitHub ⬦ Publication 1/2025 - 5/2025

- Wrote a paper discussing the processes of mass transfer in binary stars
- Combined observational and simulated data
- Used Python to compare a dataset of a million simulated binaries with their observed counterparts
- Utilized LaTeX to allow for greater efficiency
- Published in the Digital Commons

CIERA, Northwestern University Evanston, IL
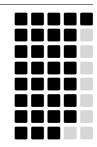REACH Further ⬦ GitHub ⬦ Visualizations 6/2024 - 7/2024

- Worked with mentor Ilia Kiato assisting with research
- Project one: Researched and cataloged X-ray binary simulation data using python tools.
- Developed a system for analyzing subpopulations using Bokeh and a GitHub Site.
- Project two: Researched natal kick velocities in Black Holes, recreating the results of the paper A Black Hole Kicked At Birth: MAXI J1305-704.
- Created visualizations of the processes of the paper.

Education

College of DuPage Glen Ellyn, IL
Honors Scholar 8/2024 - 5/2025

Research Skills

Blender ■■■■■
LaTeX ■■■■☐
Python ■■■■☐
Pandas ■■■■☐
Bokeh ■■■■☐
Matplotlib ■■■■☐
Git ■■■■☐
Tinker ■■■☐☐

Outreach

President and Founder, *COD Space Club* Glen Ellyn, IL
https://codspace.club/ 1/2025 - 5/2025

- Grew club to ≈70 members in 2 semesters
- Hosted numerous outreach events including a booth STEMCON
- Observing nights and field trips to places including Fermilab

Lead Ambassador, *Stories of Space* Glen Ellyn, IL
https://www.storiesofspace.com/ 2/2025 - Current

- Leading mission 4
- Helping coordinate large scale collaborations
- Marketed and encouraged college student engagement with space.

Project Head, *High Altitude Weather Balloon Collaboration* Glen Ellyn, IL
https://sites.google.com/view/stories-of-space-project/ 2/2025 - 7/2025

- Helping coordinate large scale collaborations
- Marketed and encouraged college student engagement with space.
- Currently working in charge of Mission 4

Talks

Guest Speaker, *Northwest Suburban Astronomers* — Barrington, IL
https://www.nsaclub.org/ — 2/7/2025
- Presented an overview of binary star properties, including X-Ray binaries, mass transfer, and stellar evolution
- Audience of ≈ 50 people.

Student Speaker, *College of Dupage* — Glen Ellyn, IL
COD Library Student Research Symposium — 5/12/2025
- Presented an in-depth exploration of the processes of Mass Transfer in Binary Stars

Publications

Mass Transfer in Binary Stars — Glen Ellyn, IL
Digital Commons — 5/2025

Photography — Glen Ellyn, IL
Prairie Light Review — 5/2025

Press

Student Spotlight, *College of DuPage* — Glen Ellyn, IL
https://www.cod.edu/about/stories/students/lipschultz.html — 1/2025

STORIES of Space and College of DuPage students . . . weather balloon launch
Daily Herald — 3/26/25

Projects

{*WIP*} Python Module for graphing HR diagrams of POSYDON Datasets
Independent Project ◇ Example ◇ GitHub — 5/2025 - Current
- Allows user to easily create elegant and publishing ready graphs in either Matplotlib or Bokeh
- Creates HTML viewing files to allow the user to quickly understand a dataset (*see link*)
- Written for an out-of-the-box solution while still allowing deep configuration

Custom Astrophotography Mounting Rig
Independent Project ◇ Photos — 5/2025 - Current
- Custom designed in CAD software (Fusion360)
- 3D printed in high-strength materials to allow for long-term use

Art

Astrophotography
Independent ◇ Photographs — 5/2024 - Current
- Custom assembled rig for taking pictures of faint deep sky objects
- Experienced with various AP tools, including NINA, PixInsight, BXT, Siril, PHD2, and more

Photography
Independent and Academic ◇ Photographs — 12/2024 - Current
- Experienced with Sony and Canon DSLRs
- Multiple photographs published