

# PIERSON LIPSCHULTZ

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## RESEARCH EXPERIENCE

### College of DuPage

Glen Ellyn, IL

Honors Independent Study ♦ [GitHub](#) ♦ [Publication](#)

01/2025 - 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](#)

06/2024 - 07/2024

- 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

08/2024 - 5/2025

## RESEARCH SKILLS

Blender

$\LaTeX$

Python

Pandas

Bokeh

Matplotlib

Git



## OUTREACH

### President and Founder, COD Space Club

Glen Ellyn, IL

<https://codspace.club/>

01/2025 - Current

- Grew club to  $\approx 70$  members in 2 semesters
- Hosted numerous outreach events including events at [STEMCON](#)
- Observing nights and field trips to places including Fermilab
- Gave talks and presentations

### Lead Ambassador, Stories of Space

Glen Ellyn, IL

<https://www.storiesofspace.com/>

08/24 - current

- In charge of 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/>

01/2025 - current

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

## Guest Speaker, Northwest Suburban Astronomers

Glen Ellyn, 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  $\approx 50$  people.

## PUBLICATIONS

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### Mass Transfer in Binary Stars

Glen Ellyn, IL

[Digital Commons](#)

5/2025

### Photography

Glen Ellyn, IL

[Prairie Light Review](#)

5/25

## PRESS

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- [College of DuPage](#)
- [Daily Herald](#)

## PROJECTS

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### {WIP} [Python Module for graphing HR diagrams of POSYDON Datasets](#)

Independent Project ◊ [GitHub](#)

4/25 - 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](#)

5/25 - Current

- Custom designed in CAD software (Fusion360)
- 3D printed in high-strength materials to allow for long-term use

## ART

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### Astrophotography

Independent ◊ [Photos](#)

1/24 - 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](#)

12/24 - Current

- Experienced with Sony and Canon DSLRs
- Multiple photographs published