ADALYN GIBSON

adalyn-gibson.github.io | adalyn.gibson@colorado.edu | linkedin.com/in/adalyngibson

EDUCATION

University of Colorado Boulder, Boulder, Colorado — August 2022 | Expected: May 2026
B.A., Astrophysical and Planetary Sciences - Physics Emphasis — GPA: 3.591
Minor in Evolutionary Biology and Ecology
Magna Cum Laude — Thesis Title: "Probing Non-Thermal Processes in Stellar Flares on AU Mic"

RESEARCH INTERESTS

I am interested in pursuing further research on the impact of stellar activity on planet formation and habitability, as well as the characterization and modeling of exoplanet atmospheres. My goal is to pursue research that bridges my knowledge of stellar activity and astrobiology, exploring how stellar phenomena impact the atmospheres of exoplanets. I intend to pursue further complementary modeling and observational astronomy.

RESEARCH EXPERIENCE (* denotes projects which resulted in a refereed publication)

Undergraduate Research Assistant * in preparation — Michigan State University, East Lansing, MI
Characterization of starspots and young planetary atmospheres in the NIR — May 2025 - Present
Advisor: Dr. Adina Feinstein

- Using Gemini-S/IGRINS data to perform high-resolution-spectroscopy of planet DS Tuc Ab
- Applying the blaśe package to remove stellar and telluric components
- Will add more one once we have results

Undergraduate Research Assistant * — LASP/University of Colorado Boulder, Boulder, CO
Detailed analysis of emission lines in a young star in the FUV — April 2024 - June 2025
Advisors: Dr. Adam Kowalski, Dr. Adina Feinstein

- Utilizing *Hubble Space Telescope*/Cosmic Origins Spectrograph data to characterize the stellar flare atmosphere of AU Mic
- Comparing available M-Dwarf stellar flare models to *Hubble Space Telescope*/Cosmic Origins Spectrograph observations in an effort to better understand gaps in current modeling abilities

Undergraduate Research Assistant * in preparation — University of Colorado Boulder, Boulder, CO
Explored TESS Photometry of Extreme Debris Disk RZ Psc — May 2023 - Present
Advisors: Dr. Meredith MacGregor, Dr. Ward Howard

- Utilizing Transiting Exoplanet Survey Satellite (TESS) data to create light curves for the analysis of the exocometary activity of extreme debris disk RZ Psc, and characterising present exocomets
- Using the python packages eleanor and LightKurve to analyze TESS data

REFEREED PUBLICATIONS

"TESS Detects Exocomets in the Extreme Debris Disk RZ Psc"
Adalyn Gibson, Meredith A. MacGregor, Ward S. Howard, in preparation

"Atmospheric Characterization of the 45 Myr planet, DS Tuc Ab, and Starspot Properties of its Host Star"
Adalyn Gibson, Adina D. Feinstein, in preparation

"Probing Non-Thermal Processes in Stellar Flares"
Adalyn Gibson, Adam F. Kowalski, Adina D. Feinstein, Under review at AAS Journals (arXiv:2506.10201)

RESEARCH PRESENTATIONS

Exoplanet Journal Club (talk), University of Michigan — July 2025
Astro Coffee (talk), Michigan State University — June 2025
Undergraduate Research Expo (poster), University of Colorado Boulder — April 2025
245th AAS Meeting (iposter), National Harbor, MD — January 2025
Conference for Undergraduate Women and Gender Minorities in Physics (poster), Boulder, CO — January 2025

Undergraduate Research Expo (poster), University of Colorado Boulder — April 2024
Conference for Undergraduate Women in Physics (poster), Tucson, AZ — January 2024

GRANTS & AWARDS

Dean's List — Spring 2025
Special CU Physics Award for Outstanding Service — January 2025
Undergraduate Research Opportunities individual grant ($3,000) — Summer 2024
Award for Excellent Poster Presentation, Conference for Undergraduate Women in Physics — January 2024
Dean's List — Fall 2024
Undergraduate Research Opportunities individual grant ($1,500) — Academic Year 2023-2024
STEM Routes | Uplift Research Program ($3,000) — Academic Year 2022-2023

LEADERSHIP

CU Astronomy Club — Boulder, Colorado
Social Media Content Lead — October 2022 – Present

- Advertising club events on social media and on campus
- Organizing astronomy outreach and education for college students

The Conference for Undergraduate Women and Gender Minorities in Physics 2025 — Boulder, Colorado
Local Organizing Committee - Advertising & Outreach Subcommittee — September 2024 – January 2025

- Using multiple social media platforms to advertise The Conference for Undergraduate Women and Gender Minorities in Physics
- Designing and creating social media posts and videos
- Outreach to the greater academic community through designing physical advertising, email outreach, and social media outreach

TEACHING EXPERIENCE

University of Colorado Boulder
Grader for ASTR 1010 - Introductory Astronomy: The Solar System w/Lab — April 2025 - May 2025
Grader for ASTR 2600 - Introduction to Scientific Programming — June 2024 - August 2024
Learning Assistant for ASTR 2600 - Introduction to Scientific Programming — January 2024 - May 2024

SKILLS & TRAINING

- **Programming:** Python, RStudio, Mathematica.
- **Packages:** `AstroPy, CalCOS, ChiantiPy, costools, eleanor, LightKurve, Matplotlib, NumPy, SciPy, blaśe`
- **Research Skills:** Managing and Analyzing Data sets, Scientific Writing, Project Management, Data Visualization.
- **Relavent Coursework:**
  - ASTR 3800 - Astronomical Data Analysis
  - ASTR 3750 - Solar and Space Physics
  - ASTR 3710 - Formation & Dynamics of Planetary Systems (*in progress*)
  - PHYS 4230 - Thermodynamics and Statistical Mechanics (*in progress*)
  - PHYS 3320 - Principles of Electricity and Magnetism 2 (*in progress*)
  - PHYS 3220 - Quantum Mechanics 1 (*in progress*)
  - PHYS 3210 - Classical Mechanics and Mathematical Methods 2
  - EBIO 3180 - Global Ecology
  - EBIO 3080 - Evolutionary Biology

STEM Routes | Uplift Research Program, University of Colorado Boulder — Boulder, Colorado
Uplift Research Mentee — October 2022 – May 2023
Advisor: Dr. Meredith MacGregor

- Attended weekly workshops on technical research skills
- Learned essential research skills through hands on training and my own research project

Professional Experience

Fiske Planetarium Boulder, Colorado
Outreach Specialist August 2023 – April 2024

- Conducting public astronomy outreach and k-12 science education
- Leading outreach trips for Fiske Planetarium, and training volunteers

DoorDash Boulder, Colorado
Delivery Driver March 2023 – June 2024

- Handled customer interactions and resolved technical issues efficiently, developed communication and multitasking skills.