ADALYN GIBSON

Incoming Ph.D Student

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EDUCATION

Michigan State University, East Lansing, Michigan — Expected Start: August 2026
Ph.D Student, Astrophysics
Advisor: Dr. Adina Feinstein
Stellar Activity, Exoplanets, ISOs, Exocomets

University of Colorado Boulder, Boulder, Colorado — August 2022 | Expected: May 2026
B.A., Astrophysical and Planetary Sciences - Physics Emphasis
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 ISOs and exocomets to explore how these objects relate to exoplanet formation. I intend to pursue further complementary observational and theoretical astronomy.

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

Undergraduate Research Assistant * In Prep — Michigan State University, Remote
Observations of 3I/ATLAS — September 2025 - Present
Advisor: Dr. Adina Feinstein

- Using Las Cumbres Observatory multi-band data to perform photometric characterization of interstellar object 3I/ATLAS

Undergraduate Research Assistant — Michigan State University, East Lansing, MI
Characterization of starspots and young planetary atmospheres in the NIR — May 2025 - August 2025
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

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 * — University of Colorado Boulder, Boulder, CO
Explored TESS Photometry of Extreme Debris Disk RZ Psc — May 2023 - September 2025
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 et al, published in The Astrophysical Journal Letters (DOI:10.3847/2041-8213/ae11a1)

"Far-Ultraviolet Emission Line Investigation of Flares on AU Mic"
Adalyn Gibson, Adam F. Kowalski, Adina D. Feinstein, published in The Astrophysical Journal (DOI:10.3847/1538-4357/ae1691)

RESEARCH PRESENTATIONS

High-Resolution Spectroscopy for Exoplanet Atmospheres Workshop (poster), Arizona State University	December 2025
Exoplanet Journal Club (talk), University of Michigan	July 2025
Mid-Michigan Symposium for Undergraduate Research Experiences (poster), Michigan State University	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

MEDIA APPEARANCES

"A host of 'exocomets' swarms a distant star" see the Nature Research Highlight (Adalyn Gibson et al. 2025)

"Alien Comets Swarm around Other Stars" see the Scientific American Article (Adalyn Gibson et al. 2025)

GRANTS & AWARDS

Michigan State University Distinguished Fellowship	August 2026 - August 2027
Honorable Mention - U.S. National Science Foundation GRFP	April 2026
Dean's List	Fall 2025
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 – December 2025

- 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 1020 - Introductory Astronomy: Stars & Galaxies w/Lab	September 2025 - December 2025
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 5140 - Astrophysical and Space Plasmas
  - ASTR 3830 - Astrophysics 2 - Galactic and Extragalactic (*in progress*)
  - ASTR 3800 - Astronomical Data Analysis
  - ASTR 3750 - Solar and Space Physics
  - PHYS 4230 - Thermodynamics and Statistical Mechanics
  - PHYS 3320 - Principles of Electricity and Magnetism 2
  - PHYS 3220 - Quantum Mechanics 1
  - PHYS 3210 - Classical Mechanics and Mathematical Methods 2
  - EBIO 4140 - Plant Ecology (*in progress*)
  - 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

Village Dining Center Boulder, Colorado
Student Assistant at Dining Hall August 2025 – December 2025

- Food service and food preparation.

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.