

# Lucien Mallett

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## EDUCATION

B.S. in Math and Physics from Harvey Mudd College, Claremont, CA    Graduated with High Distinction (3.75 GPA)

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## RESEARCH EXPERIENCE

**Researcher in Solar Physics** May 2023 – Present

The Center for Space Plasma and Aeronomic Research, University of Alabama in Huntsville / NASA Marshall Space Flight Center, Huntsville, AL

- First-author research presented at AGU 2023 (poster and oral format) and Coronal Loops Workshop 2024 (poster); paper in progress to be submitted to ApJ
- Gathered data using JSOC and processed it using IDL, Python, and Ffmpeg to study where and when DEM inversion methods fail to produce solutions during X-class solar flares
- Produced figures with particular close attention to accessibility, particularly colorblindness

**Undergraduate Researcher in Orbital Dynamics**, Harvey Mudd College, Claremont, CA    Jan. 2023 – May 2023

- Studied celestial dynamics under a mentor, completing coding exercises using the Rebound library in Python to study resonance in n-body systems

**Undergraduate Researcher in Particle Physics**, Harvey Mudd College, Claremont, CA    Sept. 2021 – Aug. 2022

- Implemented set of coupled differential equations in Mathematica, then compared with two other implementations to correct errors in all three, requiring detailed examination of code
  - Produced numerical simulations of cosmological models to attempt to explain matter-antimatter asymmetry in the early universe via lepton-number-breaking scalar decays and RHNs
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## WORK EXPERIENCE

**Grader/Tutor**, Harvey Mudd College, Claremont, CA    Sept. 2021 – May 2023

- Graded 30-130 students' work weekly for intro courses in computer science, astrophysics, & mechanics
- Offered 2-4 tutoring hours weekly to provide help on assignments and clear up conceptual confusion

**Student Notetaker**, Student Disability Services, Claremont, CA    Jan. 2022 – May 2023

- Submitted 5-15 pages of handwritten notes weekly for students with accommodations

**Instructor**, Mathnasium, Raleigh Hills, OR    Oct. 2019 – Jun. 2020

- Tutored students in math skills, including mental math, for all levels up to precalculus
  - Maintained communication with parents regarding student improvement and learning plans
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## SKILLS

Python, IDL, Mathematica, LaTeX, Java, HTML, Excel, Racket, Word  
Scientific Illustration, Interdisciplinary Communication, Self-Teaching

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## AWARDS & HONORS

- Haskell Student Conference Travel Award, Physics Dept. at Harvey Mudd College    May 2024
- Best Poster Presentation, Center for Space Plasma and Aeronomic Research    Aug. 2023
  - Awarded \$5000 travel grant to international conference