Nicholas H. Androski

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Education

University of Michigan, Ann Arbor   **August 2024-Present**
PhD in Climate and Space Physics anticipated 2029

Cal Poly, San Luis Obispo   **Sep. 2020 – June 2024**
Bachelor of Science in Physics with Astronomy and Mathematics Minors *GPA: 4.00*

Skills

Technical Skills

- Proficient in Python and MATLAB in data analysis and visualization including the IRAF Python framework for reducing astronomical data (Frost Summer Research; CfA Solar REU; Observational Astronomy Course)
- Unix, Mathematica, C++, CERN's ROOT framework, LabView, and LaTeX experience
- Hardware Experience: Oscilloscopes, PMTs, circuit design, and telescopes focused on measuring the validity of physical models with proper propagation of statistical uncertainty. (Quantum Lab, Observational Astronomy, and Electronics Courses)

Communication

- Synthesizing and presenting technical ideas. (Production of poster and oral presentations for all of my research experiences including posters at Winter 2023 AAS and 2021 APS Far West meetings).
- Demystifying complex physics concepts to fellow students geared towards understanding instead of memorization. (Learning Assistant, Cal Poly [2023]; Learning Assistant Seminar Course; Undergraduate Tutoring [2022-2024]).

Research

Solar REU Intern   **June 2023 – August 2023**
Center for Astrophysics | Harvard and Smithsonian - Dr. Kristoff Paulson   *Boston, MA*

- Developed original code to extract, visualize, and analyze plasma and electromagnetic (EM) data from NASA's Parker Solar Probe (PSP) mission in order to search for EM wave activity in the Sun's corona that may contribute to the high temperatures at the crux of the coronal heating problem.
- Produced a catalog of Sub-Alfvenic intervals in PSP data which indicates when the probe is within the corona and presented the list to the PSP's SWEAP instrument science team.

Frost Research Student   **June 2022 – August 2022**
Cal Poly - Dr. Elizabeth Jeffery   *San Luis Obispo, CA*

- Simulated unresolved binary star systems to analyze the effectiveness of a novel technique for measuring the age of individual main sequence stars through Bayesian analysis.
- Developed a data framework in Jupyter Notebook with widgets that organized and streamlined the analysis of 100s of non-Gaussian posterior distributions.
- Presented a poster presentation at the 2023 Winter AAS meeting

Observational Astronomy Course Project   **Sept. 2022 – Dec. 2022**

- Operated the Cal Poly Observatory to take images of a pulsating variable RR Lyrae star DH Peg.
- Used IRAF software to conduct differential aperture photometry to reduce images and produce a light curve
- Analyzed the light curve with a Lomb-Scargle approach to extract a period of pulsation.
- Presented findings in a technical report and final poster presentation for the course.

Undergraduate Research Student   **March. 2023 – May 2023**
Cal Poly - Dr. Elizabeth Jeffery   *San Luis Obispo,CA*

- Standardized photometry of the metal rich open cluster NGC 6253 and used a Bayesian Analysis software (BASE-9) to constrain the cluster age by fitting the main sequence turn off age.

- Presenting work as a poster at 2024 Winter AAS meeting and working on a manuscript with Dr. Jeffery.

Frost Research Student **June. 2021 – August 2021**

Cal Poly - Dr. Jennifer Klay *San Luis Obispo,CA*

- Worked with large sample of millions of nuclear fission event data from the NIFFTE experiment with CERN's ROOT framework.
- Developed an algorithm to characterize and sort rare ternary alpha nuclear fission events.

Publications

Technical Reports

- Andorksi, N.H, Paulson, K. (2024). **Identifying Ion-Scale Waves in Parker Solar Probe Sub-Alfvénic Intervals**. *Digital Commons @ Cal Poly.* https://digitalcommons.calpoly.edu/physsp/234

Awards/Honors

- California Polytechnic State University, San Luis Obispo Philip and Christina Bailey College of Science and Math 2024 Academic Excellence Award

- Cal Poly, San Luis Obispo Department of Physics Academic Excellence Award, June 2024

- California Polytechnic State University, San Luis Obispo graduating honors *Summa Cum Laude* in June 2024

- Cal Poly, San Luis Obispo Philip and Christina Bailey College of Science and Math Dean's List: All quarters of attendance

Teaching Experiences

Learning Assistant (LA) **March 2023 – June 2023**

General Physics II *Cal Poly San Luis Obispo*

- Participated in a LA pedagogy seminar focused on evidence-based strategies of physics education
- Learned how to effectively guide students by avoiding direct answer-giving and instead working to unwrap their mental models with probing questions.
- Guided students in two studio (lab+lecture) style class sections of a general physics II, covering topics such as simple harmonic motion, waves, and thermodynamics.

Service

Society of Physics Students **Fall 2022 – Spring 2024**

President *Cal Poly San Luis Obispo*

- Established a set of social norms for the physics community lounge in collaboration with the Women in Physics club based upon a community focused townhall in order to make the space more welcoming and safe for new students and underrepresented members of the community.
- Led weekly meetings to oversee progress and delegate tasks towards goals that promote diversity and a sense of community in the difficult journey of studying physics.
- Planned the physics department spring banquet with 100+ attendees to celebrate and honor the work of faculty and students