Andrew Milne
4216 Beaver Crest Drive · Des Moines, IA 50310 · 515-402-2799 · andrew-milne@uiowa.edu

EDUCATION

- **Bachelor of Science, Astronomy** *University of Iowa, Anticipated December 2024*
- **Bachelor of Arts, Physics**
- **Minor, Chemistry**

  3.57 Cumulative GPA

HONORS AND AWARDS

- **Strayer-Rairden Scholarship in Physics** *January 2021*
- **Iowa Flagship Award** *August 2020*
- **Bucksbaum Academy Scholarship** *August 2020*
- **University of Iowa Dean's List** *Fall 2021 & 2022 Semester, Spring 2022 Semester*

RELATED EMPLOYMENT

- **Research Assistant**, Philip Kaaret, Iowa City, IA

  August 2021-May 2022
  - Conducted tests of CMOS sensor effectiveness on X-ray detection using Fe-55 samples and data processing using Python 3
  - Assembled new CMOS sensor instrument package for usage at Argonne National Labratory's Advanced Photon Source for further X-ray detection at other wavelengths
  - Designed sensor package mount for future experiment in cooperation with NASA, for atmospheric or orbital use
  - Conducted tests on various cameras for Earth observing instrument, and design & construct a customized cable to connect the cameras together to a computer

- **Research Assistant**, William Kurth & George Hospodarsky, Iowa City, IA

  September 2022-Present
  - Analyze data from Juno instruments "UVS" and "Waves" to identify aurora crossing times
  - Process and analyze data from "Waves" instrument from perijove observations
  - Also work alongside George Hospodarsky in cataloging "Waves" readings on lightning whistlers
  - Developed whistler digitizing tool alongside Jeremy Faden to catalog whistlers

- **REU Scholar,** Dominique Seguara-Cox & Stella Offner, University of Texas, Austin, TX

  May 2023-August 2023
  - Derived protostellar masses using Keplerian and infalling-rotating envelope $C^{18}O$ models and comparing to the values derived from a simple Keplerian fit from a previous project
  - Used Keplerian and IRE $C^{18}O$ models to find the radii of the centrifugal barrier
  - Presented research at local symposium, as well as the Winter 2024 AAS Meeting in New Orleans

PUBLICATIONS

- Hospodarsky, G., Milne, A., Kurth, W., et al. (2023). Jupiter Long Dispersion Lightning Whistlers that propagate through the Io torus: Juno Observations. In Planetary (pp. 103686).
- Milne, A., Segura-Cox, D., Offner, S. (2023). Determining the Mass and Characteristic Disk Radii of a Class 0/I Protostar Using FERIA. Manuscript in preparation.
- Milne, A., Kirkpatrick, C., Segura-Cox, D., Offner, S., et al. (2023). Determining the Mass and Characteristic Disk Radii of 10 Class 0/I Protostars using Keplerian Rotation Fitting and FERIA. Manuscript in preparation.

RELATED CLASSES

- **Calculus 3 (MATH:2850)**
- **Linear Algebra (MATH:2700)**
- **Electricity and Magnetism 2 (PHYS:3812)**
- **Introduction to Astrophysics 2 (ASTR:3772)**
- **Introduction to Quantum Mechanics 1 (PHYS:3741)**
- **Principles of Chemistry 2 (CHEM:1120)**
- **Organic Chemistry 2 (CHEM:2220)**
- **Observational Techniques in Astronomy (ASTR:4850:0001)**

OTHER EXPERIENCE

- **Vice President**, American Institute of Aeronautics and Astronautics *August 2020-Present*
    - Develop leadership and communication skills
    - Design, construct, and successfully fly a Level 1 certification rocket according to National Association of Rocketry specifications
    - Act as chief engineer for the design and construction of high powered rockets
    - Formerly was Secretary and Safety Officer of student organization from August 2021 - May 2022
- **Webmaster**, Society of Physics Students, Iowa City, IA *September 2021-Present*
    - Operate club website, and be executive leader for club