Andrew Milne

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Education

University of Rochester — Aug. 2025-Present
Masters in Physics and Astronomy
Supervisor: Prof. Dominique Segura-Cox

University of Iowa — Aug. 2020-Dec. 2024
B.S. Astronomy, B.A. Physics, Minor in Chemistry
GPA: 3.67/4.0 Cumulative

Publications

Accepted

Milne, A., Segura-Cox, D., Offner, S. "Determining the Mass and Characteristic Disk Radii of Per-Emb-14 Using Rotation and Infall", 2025, *RNAAS*.

Hospodarsky, G., **Milne, A.,** Kurth, W., et al. "Jupiter Long Dispersion Lightning Whistlers That Propagate Through the Io Torus: Juno Observations", 2023, *Planetary, Solar and Heliospheric Radio Emissions IX*

In preparation

Milne. A., Hospodarsky, G., Kurth, W., et al. "A Survey of Jovian Long Dispersion Whistlers as Observed By Juno Waves", 2026, To be submitted to JGR: Space Physics

Milne, A., Segura-Cox, D., Offner, S., "Determining the Mass and Characteristic Disk Radii of 10 Class 0/1 Protostars Using Rotation and Infall", 2026, To be submitted to the Astrophysical Journal

Posters

Milne, A., Hospodarsky, G., Faden, J. "A Survey of Jovian Long Dispersion Lightning Whistlers as Detected by Juno Waves"
University of Iowa Fall Undergraduate Research Fair Nov '24
Andrew Nelson Award Recipient

Milne, A., Sugura-Cox, D., Offner, S. "Studying Infall Towards 10 Class 0/I Protostars Using ALMA Data and FERIA"
243rd AAS Meeting Jan. 2024

Milne, A., Sugura-Cox, D., Offner, S. "Studying Infall Towards 10 Class 0/I Protostars Using ALMA Data and FERIA"
UT Austin Aug. 2023

Hospodarsky, G., **Milne, A.** et al. "Comparison of Models for the Jupiter Magnetosphere and Io Torus Electron Density to the Observed Dispersion of Jovian Long Dispersion Lightning Whistlers as Detected by Juno"
AGU Meeting Dec. 2023 (poster, SM23D-2846)

Awards

Strayer-Rairden Scholarship in Physics Jan. 2021
University of Iowa

Iowa Flagship Award Aug. 2020
University of Iowa

Bucksbaum Academy Scholarship Aug. 2020
University of Iowa

Andrew Nelson Poster Award Nov. 2024
Awarded for best poster at undergraduate research presentation
University of Iowa

Dean's List
University of Iowa Fall 2021 & 2022 Semester, Spring 2022 & 2024 Semester

Research Experience

Kaaret Research Group - Prof. Philip Kaaret Aug. 2021-May 2022
Laboratory Research Assistant – University of Iowa
· 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 to a computer

Juno Waves Group - William Kurth and George Hospodarsky Sep. 2022-Aug. 2025
Laboratory Research Assistant – University of Iowa
· Analyze data from Juno instruments "UVS" and "Waves" to identify aurora crossing times
· Process and analyze data from "Waves" instrument from perijove observations
· This work springboarded me to working alongside George Hospodarsky in cataloging "Waves" readings on lightning whistlers
· Developed whistler digitizing tool alongside Jeremy Faden to catalog whistlers by their dispersion constants
· Analyzed over 1000 distinct whistlers to identify long dispersion whistlers, and perform statistical analysis using Juno orbital data
· Won the Andrew Nelson award for a poster presentation on this work

REU Scholar - Dominique Segura-Cox and Stella Offner May 2023-Aug. 2023
REU Scholar – University of Texas at Austin
· 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 243rd AAS Meeting January 2024

Leadership

University of Iowa Aerospace and Rocketry Club
Vice President May 2023-May 2024
Safety Officer May 2022-May 2023

University of Iowa Society of Physics Students
Webmaster May 2022-May 2024