

Ellis Avallone

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Education & Employment

University of Hawai'i at Mānoa Institute for Astronomy <i>Ph.D. in Astronomy</i>	Honolulu, HI 2020 – Present
University of Hawai'i at Mānoa Institute for Astronomy <i>M.S. in Astronomy, 3.85/4.0</i>	Honolulu, HI 2018 – 2020
Bay Area Environmental Research Institute <i>Research Associate</i>	Moffet Field, CA Summer 2018
University of Washington <i>Bachelor of Science in Physics & Astronomy, 3.47/4.0 Astronomy 3.78/4.0</i> UW Dean's List – SP16, WI17, SP17 Astronomy Honors	Seattle, WA 2014 – 2018

Research

Interests: Solar & Stellar Physics – Solar Magnetic Fields – Stellar Evolution

Stellar Rotation with Kepler and TESS **Honolulu, HI**
Dr. Jennifer van Saders & Dr. Jamie Tayar Autumn 2019 - Present

- Analyzing rotation as a function of mass, metallicity, and binarity for stars near the Kraft Break.

Electric Current Neutralization in Solar Active Regions **Honolulu, HI**
Dr. Xudong Sun Winter 2019 - Spring 2020

- Studying the relationship between current distribution and flare production in solar active regions.

Lockheed Martin Solar and Astrophysics Lab **Palo Alto, CA**
Dr. Sanjiv Tiwari & Dr. Bart de Pontieu Summer 2018

- Studying the evolution of solar coronal plumes with the Interface Region Imaging Spectrograph (IRIS).

Solar Telescope **Seattle, WA**
Astronomy Undergraduate Engineering Group Autumn 2017 – Spring 2018

- Developing a solar telescope for use in introductory astronomy courses.

University of Alabama in Huntsville/NASA MSFC Heliophysics REU **Huntsville, AL**
Dr. Sanjiv Tiwari Summer 2017

- Studying the magnetic origins of solar coronal plumes.

Cataclysmic Variable Spectroscopy **Seattle, WA**
Prof. Paula Szkody Spring 2017 – Winter 2018

- Collected and reduced several Cataclysmic Variable (CV) targets and developed a CV catalog.

Little-Studied Open Clusters Project **Seattle, WA**
Prof. Ana Larson Spring 2016 – Winter 2017

- Cataloged open cluster properties and assisted in development of cluster membership analysis program.

Awards and Honors

American Astronomical Society Solar Physics Division Popular Writing Award: May 2020

NSF Graduate Research Fellowship Program: Honorable Mention April 2020

NSF Graduate Research Fellowship Program: Honorable Mention April 2018

American Geophysical Union (AGU) Fall Meeting Outstanding Student Paper Award: December 2017

UW Astronomy Baer Undergraduate Prize for Excellence in Research: Spring 2017

Teaching

Astronomy Course Teaching Assistant: TA for UH undergraduate astronomy courses Autumn 2018 - Spring 2019

Astronomy Course Grader: Grader for undergraduate astronomy core series Autumn 2017 - Spring 2018

Introductory Physics Tutorial Instructor: Tutorial TA for UW introductory physics series Winter 2017 – Spring 2018

Committees

UH Institute for Astronomy Graduate Admissions Committee: Graduate Student Representative Spring 2019

Volunteer Service and Outreach

Scientist: Skype a Scientist Autumn 2019 - Present

Presenter: Stars Above Hawaii Stargazing Tours Spring 2019 - Present

Author: Astrobites, astrobites.org/author/eavallone Winter 2019 – Present

Volunteer: UH Institute for Astronomy Outreach Autumn 2018 - Present

Pen-Pal: Letters to a Pre-Scientist
Secretary, President: UW League of Astronomers
Volunteer: Theodor Jacobsen Observatory
Presenter: UW Planetarium, UW Mobile Planetarium

Autumn 2018 – Present
Spring 2016 – Spring 2018
Spring 2016 – Spring 2018
Spring 2016 – Spring 2018

Mentorship

Maunakea Scholars Program: Graduate Student Mentor *Autumn 2018 – Present*
Research Mentor: Co-advising high school student with Dr. Xudong Sun *Spring 2019 – Present*

Technical Skills

Languages: Python | IDL | Mathematica | LaTeX | Bash | UNIX | R
Software: Wordpress | Microsoft Office
Telescope Operations: Observed 4+ nights at APO 3.5m, MRO 0.75m, DAO 1.83m

Coursework

UW PHYS 321-323: Electromagnetism
UW PHYS 324-325: Quantum Mechanics
UW ASTR 423: High Energy Astrophysics
UW ASTR 427: Computational Astronomy
UH ASTR 622: The Interstellar Medium
UH ASTR 631: Radiative Transfer and Stellar Atmospheres
UH ASTR 736: Astronomy Seminar - Solar Physics

Workshops

Preparing for DKIST: Image processing and Time Series: Northridge, CA *Winter 2020*
Preparing for DKIST: An Introduction to Ground Based Data: Boulder, CO *Summer 2019*
UCAR CPAESS Heliophysics Summer School: Boulder, CO *Summer 2019*

Presentations

American Astronomical Society Winter Meeting: Poster *January 2020*
◦ Astrobites: Blogging Astronomy Research and Beyond
American Astronomical Society Winter Meeting: Poster *January 2020*
◦ Electric Current Neutralization in Solar Active Regions and its Relation to Magnetic Shear and Eruptive Activity
American Geophysical Union Fall Meeting: Poster *December 2019*
◦ Electric Current Neutralization in Solar Active Regions and its Relation to Magnetic Shear and Eruptive Activity
SHINE Conference: Poster *August 2019*
◦ Electric Current Neutralization in Solar Active Regions and its Relation to Magnetic Shear and Eruptive Activity
Lockheed Martin Solar and Astrophysics Lab: Seminar *July 2018*
◦ The Magnetic Origins and Spectroscopic Properties of Coronal Plumes
UW Undergraduate Research Symposium: Poster *May 2018*
◦ Adapting an Amateur Solar Telescope for use as a Lecture, Research, and Public Outreach Tool
Stanford University Solar Observatories Group: Seminar *March 2018*
◦ Critical Magnetic Field Strengths for Unipolar Solar Coronal Plumes in Quiet Regions and Coronal Holes?
American Geophysical Union Fall Meeting: Poster *December 2017*
◦ Critical Magnetic Field Strengths for Unipolar Solar Coronal Plumes in Quiet Regions and Coronal Holes?
UW Undergraduate Research Symposium: Poster *May 2017*
◦ MW Open Cluster Metallicities + Membership Assignment
Theodor Jacobsen Observatory: Public Outreach Talk | The Sun: Our Home Star *May 2017*
UW Planetarium: Universe Tours *Spring 2016 – Spring 2018*

Publications

Electric Current Neutralization in Solar Active Regions and Its Relation to Eruptive Activity: *2020*
◦ Ellis A. Avallone and Xudong Sun 2020, ApJ, 893, 123
Critical magnetic field strengths for unipolar solar coronal plumes in quiet regions and coronal holes?: *2018*
◦ Avallone, E. A., Tiwari, S. K., Panesar, N. K., Moore, R. L., Winebarger, A. 2018, ApJ, 861, 111

References available upon request.