Ellis Avallone

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Education & Employment

University of Hawai'i at Mānoa Institute for Astronomy — **Honolulu, HI**
Ph.D. in Astronomy, 3.85/4.0 — *2018 – Present*

Bay Area Environmental Research Institute — **Moffet Field, CA**
Research Associate — *Summer 2018*

University of Washington — **Seattle, WA**
Bachelor of Science in Physics & Astronomy, 3.47/4.0 | Astronomy 3.78/4.0 — *2014 – 2018*
UW Dean's List – SP16, WI17, SP17 | Astronomy Honors

Research

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

Constraining Angular Momentum Loss Mechanisms in Subgiant Stars — **Honolulu, HI**
Dr. Jennifer van Saders & Dr. Jamie Tayar — *Autumn 2019 - Present*
- Analyzing how different angular momentum loss models fare for stars on the subgiant branch.

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 *Autumn 2018 – Present*
Secretary, President: UW League of Astronomers *Spring 2016 – Spring 2018*

Volunteer: Theodor Jacobsen Observatory *Spring 2016 – Spring 2018*

Presenter: UW Planetarium, UW Mobile Planetarium *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

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.