

Sarah A. Jaeggli

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Education

Ph.D. Astronomy, December 2011
University of Hawai'i, Honolulu, HI
Thesis: *An Observational Study of the Formation and Evolution of Sunspots*
Advisor: Dr. Haosheng Lin

M.S. Astronomy, December 2007
University of Hawai'i, Honolulu, HI

B.S. Physics and Astronomy, May 2005
University of Arizona, Tucson, AZ
Summa Cum Laude

Honors and Awards

- AURA Science Award, 2012
- Galileo Circle Scholar, 2005
- Phi Beta Kappa, December 2004
- Glen C. Purviance Scholarship Award, 2004
- Dean's List with Distinction, Fall 2001 - Spring 2003, Spring 2004
- Dean's List Honorable Mention, Fall 2003, Fall 2004

Professional Memberships

- American Astronomical Society, 2004-Present

Research

Post-Doctoral Researcher, *Montana State University, 2011-present*
Supervisor: Dr. Charles Kankelborg
Instrument and science support for the IRIS spectrograph.

Graduate Research Assistant, *University of Hawai'i, 2007-2011*
Advisor: Dr. Haosheng Lin
Commissioning of the Facility Infrared Spectropolarimeter on the Dunn Solar Telescope, dissertation research.

Visiting Graduate Student, *National Solar Observatory at Sacramento Peak, February - May 2010*
Advisor: Dr. Han Uitenbroek
Atmospheric modeling of sunspot umbra, instrument support, dissertation research.

Graduate Research Assistant, *University of Hawai'i, 2005-2007*
Advisor: Dr. Jeffrey Kuhn
Feasibility studies for the heat-stop and wavefront curvature sensor for the New Solar Telescope at Big Bear Solar Observatory.

Directed Research Course, *University of Hawai'i, 2006-2007*
2007 Advisor: Dr. Robert Joseph
Analysis of integral field spectroscopy of merging and Seyfert 2 galaxies.
2006 Advisor: Dr. Shadia Habbal
Design and implementation of a broadband spectroscopy experiment during the total solar eclipse of March 29, 2006.

Undergraduate Research Assistant, *National Solar Observatory, Tucson, AZ, 2003-2005*
Advisor: Dr. Matthew Penn
Study of chemical abundances in sunspot umbrae and wavelet analysis of moving magnetic features in sunspot superpenumbrae.

Cube Satellite Project, *University of Arizona, 2003-2005*
Supervisor: Dr. Uwe Fink
Power and communication systems specialist.

REU, *National Radio Astronomy Observatory, Charlottesville, VA, Summer 2004*

Advisor: Dr. Richard Bradley

Hardware and software development for the broadband digital spectrograph on the Green Bank Solar Radio Burst Spectrometer.

REU, *National Solar Observatory, Tucson, AZ, Summer 2003*

Advisor: Dr. Matthew Penn

Characterization of instrumental polarization for the McMath-Pierce Solar Telescope.

NASA Space Grant Internship, *University of Arizona, 2002-2003*

Advisor: Dr. Timothy Slater

Astronomy education research in undergraduate classrooms.

Committees and Service

IfA Graduate Education and Public Outreach, *2005-present*

Participated on a monthly basis in public outreach activities for grades K-12 and adults including star- and sun-gazing, planetarium shows, comet making, telescope building, and many other activities.

IfA TGIF, *2008-2011*

Organizer for institute-wide free-form discussion group.

Hawai'i State Science Fair Judge, *2011*

Astronomy judge for the Hawai'i State Science Fair.

IfA Colloquium Committee, *2010-2011*

Elected graduate student representative to the colloquium committee.

IfA Public Open House, *2006-2009, 2011*

Organized and assisted with activities at IfA annual public open house.

IfA Graduate Student Representative, *2009*

Appointed student representative to the faculty.

IfA Graduate Research Oversight Group, *2008-2009*

Elected student representative on the committee that oversees graduate student directed research.

University of Arizona Astronomy Camp, *2005, 2009*

Astronomy camp counselor for beginning and advanced camps, students grade 7-12. In 2009, lead a student observing project using the Vertical Spectrograph on the McMath-Pierce Solar Telescope to detect the solar magnetic fields and p-modes.

Presentations and Posters

Bunching Magnetic Field, Hidden Molecule: an Investigation of H₂ Formation in Sunspots. Colloquium, Utah State University. Logan, UT. 24 April 2012.

Comparison of Multi-Height Observations with a 3D MHD Sunspot Model. Poster Paper, The 5th Hinode Science Meeting. Boston, MA. October 2011.

An Observational Study of the Formation and Evolution of Sunspots. Dissertation Presentation, University of Hawai'i, Institute for Astronomy. Honolulu, HI. 26 August 2011.

An Observational Study of the Formation and Evolution of Sunspots. Dissertation Presentation, American Astronomical Society Solar Physics Division Meeting. Las Cruces, NM. June 2011.

Status of FIRS Data and Processing. Invited Presentation, The Second Vector Magnetogram Comparison Group Meeting. Stanford, CA. October 2010.

Adventures in Spectropolarimetry at the National Solar Observatory. Presentation, IfA AstroCoffee. October 2010.

Molecule Formation and Magnetic Field Evolution in Sunspots. Presentation, The 6th Solar Polarization Workshop. Ka'anapali, HI. June 2010.

FIRS: A New Instrument for Multi-Wavelength Spectropolarimetry. Invited Presentation, The First Vector Magnetogram Comparison Group Meeting. Tucson, AZ. October 2009.

FIRS: A New Instrument for Photospheric and Chromospheric Studies at the Dunn Solar Telescope. Presentation, NSO Workshop 25: Chromospheric Structure and Dynamics. Sacramento Peak, NM. September 2009.

The Facility Infrared Spectropolarimeter for the Dunn Solar Telescope. Poster Paper, American Geophysical Union, Spring Meeting. Ft. Lauderdale, FL. May 2008.

The Starburst-AGN Connection: Integral Field Spectroscopy of Merging and Seyfert 2 Galaxies. Presentation, Directed Research Course. Institute for Astronomy. July 2007.

The Starburst-AGN Connection: Integral Field Spectroscopy of Merging and Seyfert 2 Galaxies. Poster Paper, American Astronomical Society Meeting 210. Honolulu, HI. May 2007.

Broadband Spectroscopy of the Corona during the Total Solar Eclipse of March 29, 2006. Presentation, Directed Research Course. Institute for Astronomy. January 2007.

Broadband Spectroscopy of the Corona during the Total Solar Eclipse of March 29, 2006. Poster Paper, American Astronomical Society Meeting 209. Seattle, WA. January 2007.

Searching for Moving Magnetic Features at 1565 nm. Poster Paper, American Geophysical Union, Spring Meeting. New Orleans, LA. May 2005.

IR Vector Magnetic Fields I: Instrumental Polarization Correction. Poster Paper, American Astronomical Society Meeting 204. Denver, CO. May 2004.

Refereed Publications

Jaeggli, S. A.; Lin, H.; & Uitenbroek, H., 2012, *On Molecular Hydrogen Formation and the Magneto-hydrostatic Equilibrium of Sunspots*, ApJ, 745, 133

Elmore, D. F.; Lin, H.; Socas Navarro, H.; & **Jaeggli, S. A.**, 2010, *Utilization of redundant polarized solar spectra to infer the polarization properties of the new generation of large aperture solar telescopes*, SPIE, 7735, 147

Kuhn, J. R.; Arnaud, J.; **Jaeggli, S.**; Lin, H.; & Moise, E., 2007, *Detection of an Extended Near-Sun Neutral Helium Cloud from Ground-based Infrared Coronagraph Spectropolarimetry*, ApJ, 667, 203

Habbal, S. R.; Morgan, H.; Johnson, J.; Arndt, M. B.; Daw, A.; **Jaeggli, S.**; Kuhn, J.; & Mickey, D., 2007, *Localized Enhancements of Fe+10 Density in the Corona as Observed in Fe XI 789.2 nm during the 2006 March 29 Total Solar Eclipse*, ApJ, 663, 598

Other Publications

Jaeggli, S. A.; Lin, H.; & Uitenbroek, H., 2011, *Molecule Formation and Magnetic Field Evolution in Sunspots*, ASP Conf., Solar Polarization Workshop 6

Schad, T.; **Jaeggli, S. A.;** Lin, H.; & Penn, M., 2011, *Spectropolarimetry of Chromospheric Magnetic and Velocity Structure Above Active Regions*, ASP Conf., Solar Polarization Workshop 6

Jaeggli, S. A. & Lin, H., 2010, *The FIRS Data Reduction Manual*

Jaeggli, S. A.; Lin, H.; Mickey, D. L.; Kuhn, J. R.; Hegwer, S. L.; Rimmele, T. R.; & Penn, M. J., 2010, *FIRS: A New Instrument for Photospheric and Chromospheric Studies at the Dunn Solar Telescope*, Mem. SA It, 81, 763

Jaeggli, S. A. & Lin, H., 2009, *The FIRS User's Manual*

Penn, M. J.; **Jaeggli, S. A.;** Henney, C. J.; Luszcz, S.; & Walton, S. R., 2006, *Penumbra Moving Magnetic Features*, ASP Conf., 368, 31

Telescope Time Awarded

The Evolution of Sunspot Magnetic Fields with Multi-Wavelength Spectropolarimetry.

Richard B. Dunn Solar Telescope.

Feb 2010, 12 days; May 2010, 10 days; September 2010, 9 days; November 2010, 9 days

References

Dr. Haosheng Lin

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Dr. Han Uitenbroek

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Dr. Shadia Habbal

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Dr. Matthew Penn

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