

Sarah A. Jaeggli

Physics Department, Montana State University, P.O. Box 173840 Bozeman, MT 59717-3840, USA • *Phone:* (406) 994-6072
Email: jaeggli@solar.physics.montana.edu • *Web:* solar.physics.montana.edu/jaeggli • *Fax:* (406) 994-4452 • *Citizenship:* USA

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

Professional Memberships

- American Astronomical Society, *2004-Present*
- American Geophysical Union, *2013-Present*

Research Experience

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

University of Arizona Astronomy Camp, 2005, 2009, 2013

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. In 2013 conducted spectropolarimetric observation of sunspots.

IfA Graduate Education and Public Outreach, 2005-2011

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.

Hawai'i State Science Fair Judge, 2011

Astronomy judge for the Hawai'i State Science Fair.

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.

Refereed Publications

De Pontieu, B. ... **Jaeggli, S. A.** ... et al., 2013, *The Interface Region Imaging Spectrograph*, Solar Phys., in preparation.

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., "Ask Astro: Solar Blemishes," *Astronomy Magazine*, October 2013, pg. 34

Jaeggli, S. A.; Lin, H.; Uitenbroek, H.; & Rempel, M., 2012, *Comparison of Multi-Height Observations with a 3D MHD Sunspot Model*, ASP Conf., 456, 67

Jaeggli, S. A.; Lin, H.; & Uitenbroek, H., 2011, *Molecule Formation and Magnetic Field Evolution in Sunspots*, ASP Conf., 437, 473

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

Technical Documents

- Jaeggli, S. A.; Lites, B. L., *IRIS Technical Note 16: Flat Fields*, 2013
- Jaeggli, S. A.; McIntosh, S.; Pereira, T.; & Tian, H., *IRIS Technical Note 19: Geometric Calibration*, 2013
- Jaeggli, S. A.; Boerner, P.; & Wuelser, J. P., *IRIS Technical Note 25: Gain Determination*, 2013
- Jaeggli, S. A.; Kankelborg, C. C.; Tarbell, T.; & Chung, M., *IRIS Technical Note 29: Deconvolution Approach*, 2013
- Jaeggli, S. A.; Boerner, P.; Tarbell, T.; & DePontieu, B., *IRIS Technical Note 7: Data Compression Techniques*, 2013
- Jaeggli, S. A.; Boerner, P.; Kankelborg, C. C.; & Wuelser, J. P., *IRIS Technical Note: Polarization of the NUV Spectrograph*, 2012
- Jaeggli, S. A. & Lin, H., *The FIRS Data Reduction Manual*, 2011
- Jaeggli, S. A. & Lin, H., *The FIRS User's Manual*, 2010

Presentations and Posters

- 1565 nm Observations of the Transit of Venus, Proxy for a Transiting Exoplanet*. Poster Paper, American Astronomical Society Solar Physics Division Meeting. Bozeman, MT. July 2013.
- Multi-Height Spectropolarimetry of Sunspots with FIRS and IBIS*. Poster Paper, American Astronomical Society Meeting. Anchorage, AK. June 2012.
- Non-Stationary Deconvolution for the IRIS NUV Slit-Jaw Imager*. Poster Paper. SDO-4. Monterey, CA. March 2012.
- Bunching Magnetic Field, Hidden Molecule: an Investigation of H₂ Formation in Sunspots*. Invited 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*. Oral 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.
- Molecule Formation and Magnetic Field Evolution in Sunspots*. Oral 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 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*. Poster Paper, American Astronomical Society Meeting 209. Seattle, WA. January 2007.

Telescope Time Awarded	<p><i>Polar Magnetic Field Measurements with FIRS</i> Richard B. Dunn Solar Telescope Feb, Sep 2013, 5 days</p> <p><i>Measuring Molecular Abundances in Sunspots with the U of A Advanced Teen Astronomy Camp</i> Richard B. Dunn and McMath-Pierce Solar Telescopes June 2013, 8 days</p> <p><i>The Evolution of Sunspot Magnetic Fields with Multi-Wavelength Spectropolarimetry</i> Richard B. Dunn Solar Telescope Feb 2010, 12 days; May 2010, 10 days; September 2010, 9 days; November 2010, 9 days</p>
-----------------------------------	--

References *Additional References Available Upon Request*

Dr. Charles Kankelborg
Department of Physics
Montana State University
P.O. Box 173840
Bozeman, MT 59717, USA
(406) 994-7853
kankel@solar.physics.montana.edu

Dr. Haosheng Lin
Institute for Astronomy
University of Hawai'i
34 Ohia Ku
Pukalani, HI 96768, USA
(808) 573-9538
lin@ifa.hawaii.edu

Dr. Han Uitenbroek
National Solar Observatory
Sacramento Peak
3010 Coronal Loop
Sunspot, NM 88349, USA
(575) 434-7032
huitenbroek@nso.edu

Dr. Matthew Penn
National Solar Observatory
950 N. Cherry St.
Tucson, AZ 85719, USA
(520) 318-8510
mpenn@email.noao.edu