Sarah Jane Schmidt

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Employment

Karl Schwarzschild Postdoctoral Fellow — 2015–present
Leibniz-Institut für Astrophysik Potsdam (AIP)

Columbus Prize Postdoctoral Fellow — 2012–2015
The Ohio State University

Education

University of Washington — 2012
Ph.D. in Astronomy
Thesis Title: "Activity and Kinematics of Cool and Ultracool Dwarfs"
Thesis Advisor: Suzanne Hawley

University of Washington — 2008
Master of Science in Astronomy

Barnard College of Columbia University — 2006
Bachelor of Arts with honors in Physics and Astronomy

Research Interests

Understanding magnetic activity on small stars and warm brown dwarfs
Determining the ages and metallicities of cool stars
Using kinematics to place M and L dwarfs in a Galactic context
Measuring the luminosity and mass function at the stellar/substellar boundary

Teaching Experience

Instructor, University of Washington — Summer 2012
Instructor for an introductory topical course that I designed based on the solar neighborhood.

Instructor, University of Washington — Summer 2010, 2011
Instructor for introduction to astronomy.

Instructor, University of Washington — Fall 2008
Instructor for the Pre-Major in Astronomy Seminar, which involved first-year undergraduates in research projects.

Teaching Assistant, University of Washington — Summer 2008–2012
Taught the basics of UW's 0.6-m telescope to advanced undergraduates.

Teaching Assistant, University of Washington — 2006–2007
Teaching assistant for introductory astronomy classes.

Honors & Awards

Washington NASA Space Grant Graduate Fellow, 2012
NSF Graduate Fellowship Honorable Mention, 2007 and 2008
Henry Borse Prize, 2006
New York NASA Space Grant Undergraduate Summer Research Program Award, 2004 and 2005

Invited Talks

"Finding the Largest Flares on Ultracool Dwarfs with ASAS-SN"
Cool Stars 19 Splinter Session on Flares in Time-Domain Surveys, June 2016

"Probing the Dynamic Chromospheres of Ultracool Dwarfs Over Timescales of a Decade"
SDSS-IV Collaboration Meeting Plenary, July 2015

"The Pre-Major in Astronomy Program at the University of Washington"
Inclusive Astronomy, June 2015

"Hot Chromospheres and Flares on Cool and Ultracool Dwarfs"
University of Leicester Seminar, November 2106
Leibniz-Institut für Astrophysik Potsdam Colloquium, November 2015
University of Texas Astronomy Colloquium, September 2014
University of Oklahoma Physics and Astronomy Colloquium, September 2014

"Hot Chromospheres on Cool and Ultracool Dwarfs"
Case Western Reserve University Astronomy Colloquium, February 2014
University of Toledo Physics and Astronomy Colloquium, December 2013

"BOSS Ultracool Dwarfs"
SDSS-III Collaboration Meeting Plenary, June 2013

Students Supervised

Amber Medina, New Mexico State University Undergraduate 2014–2015
Identified young M and L dwarfs in a large sample of SDSS ultracool dwarf spectra.
Currently: Astronomy Graduate Student at Harvard University

Erika Wagoner, Ohio State University Undergraduate 2013–2014
Analyzed APOGEE ASPCAP properties of late-K and early-M dwarfs in comparison to model isochrones. Second author of Schmidt et al. (2016, MNRAS 460 2611).
Currently: Physics Graduate Student at University of Arizona

Collin Kielty, University of Washington Undergraduate 2012
Worked on the calculation of spectroscopic templates based on the SDSS spectra of L dwarfs. Co-author of Schmidt et al. (2014, PASP 126 642).
Currently: Astronomy Graduate Student at University of Victoria

Heather Gunning, University of Washington Undergraduate 2011–2014
Worked on observations, data reduction, and analysis of spectroscopic observations of a sample of wide M dwarf binaries. First author of Gunning et al. (2014, PASP 126 1081).
Currently: Research and Instrumental Analyst at Space Telescope Science Institute

Service

Co-Spokesperson, AIP Internal Scientific Committee 2016–present

Member, NOAO TAC Galactic Panel 2015–present

Referee 2014–present
Astronomical Journal, Astrophysical Journal, Astronomy & Astrophysics

Member, NASA K2 Guest Observer Review Panel 2014

Graduate Representative on Admissions Committee 2010–2011
Facilitated graduate student contact with prospective students and co-organized prospective visiting weekend.

Cool Stars 16 Local Organizing Committee 2010
Assisted with planning many aspects of the conference including excursions, facilities, poster arrangement and poster abstract sorting.

Co-Organizer of Undergraduate Mentoring Workshop 2008
Facilitated an afternoon workshop for the Astronomy department including presentations from the campus Undergraduate Research Program staff

Equity & Inclusion

Co-Chair, Committee On INclusion in SDSS (COINS) 2016-present
Charged with assessing the SDSS climate and demographics and both recommending and implementing policies or practices for inclusiveness.

SDSS FAST Collaborator 2016-present
Working with two teams as part of the SDSS Faculty and Student Teams (FAST) initiative that involves researchers and students at Minority Serving Institutions in the SDSS collaboration.

AIP Equity & Inclusion Lunches 2015–present
Co-organizer and presenter in monthly lunch meetings at AIP on topics of equity and inclusion.

Diversity Journal Club 2012–2015
Instigated and facilitated a monthly journal club in the OSU astronomy department to present and discuss diversity & inclusion issues.

Organizer and Chair of AAS Special Session 2015
Led the committee that put together the session on "Celebrating 10 Years of Diversity With Pre-MAP" at the 225th AAS.

Pre-Major in Astronomy Program (Pre-MAP) Staff 2006–2012

- Planned and led the seminar component of the program
- Recruited students at campus events and in classrooms
- Assisted in writing NSF CCLI and ASP SEED grants
- Developed an evaluation plan and conducted student interviews
- Planned field trips for 10 students to Vancouver (UBC and TRIUMF) and Portland (OMSI)
- Worked as academic mentor to a cohort of students

Outreach

Prolific Tweeter at Astronomy Meetings 2014-present
Shared recent results through social media at the Cool Stars Workshops (#CS15 and #CS16), AAS (#AAS223, #AAS225, and #AAS227), and SDSS collaboration meetings (#SDSS16).

Tweep of the Week 2015-2016
Spent one week on the popular AstroTweeps twitter account and one week on the SDSS surveys account engaging the public about my research.

Speaker at Upper Arlington Public Library Astronomy Series 2014
Spoke to a group of children and parents about the solar neighborhood.

Speaker at Columbus Astronomy on Tap 2013, 2015
Presented public talks to an adult audience at a local bar.

OSU Astronomy Coffee Briefs 2013, 2015
Created two short videos explaining the results of my publications; a large flare on a small star (`http://y2u.be/uue8G0NnjJU`) and magnetic activity on a large sample of ultracool dwarfs (`http://y2u.be/wwX5WkuJCU4`).

Volunteer at 4-H Astronomy Day Camp 2013
Led activities with a group of 8-12 year old kids.

Resource for Pacific Science Center Educators 2011
Staffed a question and answer session and provide ongoing support for educators who teach astronomy at the Seattle Pacific Science Center.

Speaker in Engage Science Seminar Series 2010
Public talk describing current research on low mass stars and brown dwarfs.

Telescope Time Awarded

Kepler K2 2015–2016
Co-I: Over 100 targets in Campaigns 4–13

McDonald 2.7-m (IGRINS) 2015
Co-I: 1 night

IRTF 3.0-m (SpeX) 2013–2014
PI: 2.5 nights; Co-I: 3 nights

LBT twin 8-m (LUCI, MODS) 2012–2015
PI: 20 hours

HST (COS) 2013
Co-I: 8 orbits

MDM 1.3-m (optical spectrograph and imager) 2013
PI: 14 nights

SDSS 2.5-m (BOSS) 2010-2014
PI: 10,000 fibers; Co-I: 200 fibers

ARC 3.5-m (TripleSpec, DIS) 2007–2012
PI: ∼75 half-nights; Co-I: ∼20 half-nights

KPNO 2.1-m (SQUIID) 2010–2011
Co-I: 14 nights

DAO 1.8-m (optical spectrograph) 2009
PI: 4 nights; Co-I: 3 nights

Additional Observing Experience

LBT twin 8-m 2012–2015
Eighteen nights queue observing using LUCI (IR spectrograph and imager), MODS (optical spectrograph), and LBC (optical imager).

McDonald 0.8-m 2014
Four nights of optical imagining.

ARC 0.5-m 2009–2012
Fourteen nights of optical imaging using Flare-cam.

MRO 0.8-m 2007–2012
Supervisor for small groups of undergraduates using optical imaging; 20 nights.

CTIO 4-m 2006
Two nights on the optical spectrograph.

Publications

First Author Refereed Publications

A10 ASASSN-16ae: A Powerful White-Light Flare on an Early-L Dwarf
Schmidt, Sarah J.; Shappee, Benjamin J.; Gagné, Jonathan, Stanek, K. Z.; Prieto, José L.; Holoien, Thomas W.-S.; Kochanek, C. S.; Chomiuk, Laura; Dong, Subo; Seibert, Mark; Strader, Jay, 2016, ApJL 828 22

A9 Examining the relationships between colour, T_{eff}, and [M/H] for APOGEE K and M dwarfs
Schmidt, Sarah J.; Wagoner, Erika L.; Johnson, Jennifer A.; Davenport, James R. A.; Stassun, Keivan; Souto, Diogo; Ge, Jian, 2016, MNRAS 460 2611

A8 BOSS Ultracool Dwarfs I: Colors and Magnetic Activity of M and L dwarfs
Schmidt, Sarah J.; Hawley, Suzanne L.; West, Andrew A.; Bochanski, John J.; Davenport, James R. A.; Ge, Jian; Schneider, Donald P.; 2015, AJ 149 158

A7 Calibrating Ultracool Dwarfs: Optical Template Spectra, Bolometric Corrections, and χ Values
Schmidt, Sarah J.; West, Andrew A.; Bochanski, John J.; Hawley, Suzanne L.; Kielty, Collin; 2014, PASP 126 642

A6 Characterizing a Dramatic $\Delta V \sim 9$ Magnitude Flare on an Ultracool Dwarf Found in the ASAS-SN Survey
Schmidt, Sarah J.; Prieto, Jose L.; Stanek, K. Z.; Shappee, Benjamin J.; et al., 2014, ApJ 781 24L

A5 Probing the Flare Atmospheres of M Dwarfs Using Infrared Emission Lines
Schmidt, Sarah J.; Kowalski, Adam F.; Hawley, Suzanne L.; Hilton, Eric J.; Wisniewski, John P.; Tofflemire, Benjamin M., 2012, ApJ 745 14

A4 Colors and Kinematics of L Dwarfs From the Sloan Digital Sky Survey
Schmidt, Sarah J.; West, Andrew A.; Hawley, Suzanne L.; Pineda, J. Sebastian, 2010, AJ 139 1808

A3 Discovery of An Unusually Blue L Dwarf Within 10 pc of the Sun
Schmidt, Sarah J.; West, Andrew A.; Burgasser, Adam J.; Bochanski, John J.; Hawley, Suzanne L., 2010, AJ 139 1045

A2 Cool Star Oxygen Abundances From Spectral Synthesis of TiO Bands
Schmidt, Sarah J.; Wallerstein, George; Woolf, Vincent M.; Bean, Jacob L., 2009, PASP 121 884

A1 Activity and Kinematics of Ultracool Dwarfs, Including an Amazing Flare Observation
Schmidt, Sarah J.; Cruz, Kelle L.; Bongiorno, Bethany J.; Liebert, James; Reid, I. Neill, 2007, AJ 133 2258

Additional Refereed Publications

B19 K2 Ultracool Dwarfs Survey I: Photometry of an L dwarf Superflare
Gizis, John E.; Paudel, Rishi R.; **Schmidt, Sarah J.**; Williams, Peter K. G.; Burgasser, Adam J., 2016 submitted to AAS journals

B18 The Time-Domain Spectroscopic Survey: Understanding the Optically Variable Sky with SEQUELS in SDSS-III
Ruan, John J.; Anderson, Scott F.; Green, Paul J.; Morganson, Eric; Eracleous, Michael; Myers, Adam D.; Badenes, Carles; Bershady, Matthew A.; Brandt, William N.; Chambers, Kenneth C.; Davenport, James R. A.; Dawson, Kyle S.; Flewelling, Heather; Heckman, Timothy M.; Isler, Jedidah C.; Kaiser, Nick; Kneib, Jean-Paul; MacLeod, Chelsea L.; Paris, Isabelle; Ross, Nicholas P. Runnoe, Jessie C.; Schlafly, Edward F.; **Schmidt, Sarah J.**; Schneider, Donald P.; Schwope, Axel D.; Shen, Yue; Stassun, Keivan G.; Szkody, Paula; Waters, Christoper Z.; York, Donald G., 2016, ApJ 825 137

B17 The Brown Dwarf Kinematics Project (BDKP). IV. Radial Velocities of 85 Late-M and L dwarfs with MagE
Burgasser, Adam J.; Logsdon, Sarah E.; Gagne, Jonathan; Bochanski, John J.; Faherty, Jaqueline K.; West, Andrew A.; Mamajek, Eric E.; **Schmidt, Sarah J.**; Cruz, Kelle L., 2015 ApJS 220 18

B16 The Eleventh and Twelfth Data Releases of the Sloan Digital Sky Survey: Final Data from SDSS-III
Alam, Shadab and 302 co-authors including **Schmidt, Sarah J.**, 2015, ApJS 219 12

B15 The Continued Optical to Mid-IR Evolution of V838 Monocerotis
Loebmen, Sarah R.; Wisniewski, John P.; **Schmidt, Sarah J.**; Kowalski, Adam F.; Barry, Richard K.; Bjorkman, Karen S.; Hammel, Heidi B.; Hawley, Suzanne L.; Kasliwal, Mansi M.; Lynch, David K.; Russel, Ray W.; Sitko, Michael L.; Szkody, Paula, 2015, AJ 149 17

B14 Hα Emission From Active Equal-mass, Wide M Dwarf Binaries
Gunning, Heather C.; **Schmidt, Sarah J.**; Davenport, James R. A.; Dhital, Saurav; West, Andrew A.; Hawley, Suzanne L., 2014, PASP 126 1081

B13 SpeX Spectroscopy of Unresolved Very Low Mass Binaries. II. Identification of Fourteen Candidate Binaries with Late-M/Early-L and T Dwarf Components
Bardalez Gagliuffi, Daniella C.; Burgasser, Adam J.; Gelino, Christopher R.; Looper, Dagny L.; Nicholls, Christine P.; **Schmidt, Sarah J.**; Cruz, Kelle; West, Andrew A.; Gizis, John E.; Metchev, Stanimir, 2014, ApJ 709 143

B12 Spatially resolved measurements of H_2O, HCl, CO, OCS, SO_2, cloud opacity, and acid concentration in the Venus near-infrared spectral windows
Arney, Giada; Meadows, Victoria; Crisp, David; **Schmidt, Sarah J.**; Bailey, Jeremy; Robinson, Tyler, 2014, J. Geophys. Res. Planets, 119, 1860–1891

B11 The Tenth Data Release of the Sloan Digital Sky Survey: First Spectroscopic Data from the SDSS-III Apache Point Observatory Galactic Evolution Experiment
Ahn, Christopher P. and 231 co-authors including **Schmidt, Sarah J.**, 2014, ApJS 211 17

B10 Time-resolved Properties and Global Trends in dMe Flares from Simultaneous Photometry and Spectra
Kowalski, Adam F.; Hawley, Suzanne L.; Wisniewski, John P.; Osten, Rachel A.; Hilton, Eric J.; Holtzman, Jon A.; **Schmidt, Sarah J.**; Davenport, James R. A., 2013 ApJS 207, 15

B9 The Baryon Oscillation Spectroscopic Survey of SDSS-III
Dawson, Kyle S. and 164 co-authors including **Schmidt, Sarah J.**, 2013 AJ 145 10

B8 The Ninth Data Release of the Sloan Digital Sky Survey: First Spectroscopic Data from the SDSS-III Baryon Oscillation Spectroscopic Survey
Ahn, Christopher P. and 235 co-authors including **Schmidt, Sarah J.**, 2012 ApJS 203 21

B7 Multi-Wavelength Characterization of Stellar Flares on Low-Mass Stars Using SDSS and 2MASS Time Domain Surveys
Davenport, James R. A.; Becker, Andrew C.; Kowalski, Adam F.; Hawley, Suzanne L.; **Schmidt, Sarah J.**; Hilton, Eric J.; Sesar, Branimir; Cutri, Roc, 2012, ApJ 748 58

B6 The Implications of M Dwarf Flares on the Detection and Characterization of Exoplanets at Infrared Wavelengths
Tofflemire, Benjamin M.; Wisniewski, John P.; Kowalski, Adam F., **Schmidt, Sarah J.**; Kundurthy, Praveen; Hilton, Eric J.; Holtzman, Jon A.; Hawley, Suzanne L., 2012, AJ 143, 12

B5 SDSS-III: Massive Spectroscopic Surveys of the Distant Universe, the Milky Way Galaxy, and Extra-Solar Planetary Systems
Eisenstein, Daniel J.; and 239 coauthors including **Schmidt, Sarah J.**, 2011, AJ 142 72

B4 The Eighth Data Release of the Sloan Digital Sky Survey: First Data from SDSS-III
Aihara, Horoaki.; and 189 coauthors including **Schmidt, Sarah J.**, 2011, ApJS 193 29

B3 A Population of X-ray Weak Quasars: PHL 1811 Analogs at High Redshift
Wu, Jianfeng; Brandt, W. N.; Hall, Patrick B.; Gibson, Robert R.; Richards, Gordon T.; Schneider, Donald P.; Shemmer, Ohad; Just, Dennis W.; **Schmidt, Sarah J.**, 2011, ApJ 736 28

B2 The Sloan Digital Sky Survey Data Release 7 Spectroscopic M Dwarf Catalog. I. Data
West, Andrew A.; Morgan, Dylan P.; Bochanski, John J.; Andersen, Jan Marie; Bell, Keaton J.; Kowalski, Adam F.; Davenport, James R. A.; Hawley, Suzanne L.; **Schmidt, Sarah J.**; Bernat, David; Hilton, Eric J.; Muirhead, Philip; Covey, Kevin R.; Rojas-Ayala, Bárbara; Schlawin, Everett; Gooding, Mary; Schluns, Kyle; Dhital, Saurav; Pineda, J. Sebastian; Jones, David O., 2011, AJ 141 97

B1 Meeting the Cool Neighbors. IX. The Luminosity Function of M7-L8 Ultracool Dwarfs in the Field
Cruz, Kelle L.; Reid, I. Neill; Kirkpatrick, J. Davy; Burgasser, Adam J.; Liebert, James; Solomon, Adam R.; **Schmidt, Sarah J.**; Allen, Peter R.; Hawley, Suzanne L.; Covey, Kevin R., 2007, AJ 133 439

White Papers & Conference Proceedings

C7 Examining the Age/Activity Relationship of Ultracool Dwarfs with GAIA
Schmidt, Sarah J., 2014, GAIA and the Unseen–The Brown Dwarf Question, eds. Ricky Smart, David Barrado, Jackie Faherty; ArXiv 1405.6206

C6 Evaluation of a College Freshman Diversity Research Program
Garner, Sarah; Tremmel, Michael J.; **Schmidt, Sarah J.**; Wisniewski, John P.; Agol, Eric; ArXiv 1311.5486

C5 Mapping the Milky Way's Ultracool Dwarfs, Subdwarfs, and White Dwarfs
Dhital et al. 2011, Science White Paper for LSST Deep-Drilling Field Observations

C4 LSST Science Book, Version 2.0
LSST Science Collaboration, 2009; ArXiv 0912.0201

C3 Increasing the Number of Underrepresented Minorities in Astronomy: Executive Summary
Norman, D. et al. 2009; Astro2010: The Astronomy and Astrophysics Decadal Survey, Position Papers, no. 38

C2 Increasing the Number of Underrepresented Minorities in Astronomy at the Undergraduate, Graduate, and Postdoctoral Levels (Paper I)
Norman, D. et al. 2009; Astro2010: The Astronomy and Astrophysics Decadal Survey, Position Papers, no. 39

C1 Increasing the Number of Underrepresented Minorities in Astronomy Through K-12 Education and Public Outreach (Paper II)
Norman, D. et al. 2009; Astro2010: The Astronomy and Astrophysics Decadal Survey, Position Papers, no. 40

Contributed Talks

D5 Examining the ages of M7-L8 dwarfs with the BOSS Ultracool Dwarf sample
Schmidt, Sarah J.; Hawley, Suzanne L.; West, Andrew A.; Bochanski, John J., 2016, AAS 227 #121.03

D4 Chromospheric Activity on L Dwarfs
Schmidt, Sarah J., Splinter Session: Magnetic Fields, Dynamos and Aurorae: From Brown Dwarfs to Exoplanets, 2014, Cool Stars 18

D3 ASASSN-13bc: A Dramatic Flare on an Ultracool Dwarf
Schmidt, Sarah J.; Prieto, Jose L.; Stanek, K. Z.; Shappee, Benjamin J., 2014, AAS 223 #315.04

D2 Kinematics, Colors, and Ages of Ultracool Dwarfs
Schmidt, Sarah J.; Hawley, Suzanne L., 2012, AAS 219 #330.06D

D1 Kinematics of L dwarfs
Schmidt, Sarah J.; West, Andrew A.; Hawley, Suzanne L., 2010, Cool Stars 16

Selected Posters

E12 Finding the Largest Flares on Ultracool Dwarfs with ASAS-SN
Schmidt, Sarah J., 2016, Cool Stars 19

E11 Diversity Journal Club: A Tool to Educate Astronomers About Diversity and Inclusion
Schmidt, Sarah J., 2015, Inclusive Astronomy

E10 Using APOGEE Data to Examine Late-K and Early-M Dwarfs
Schmidt, Sarah J.; Wagoner, Erika L.; Johnson, Jennifer; Gregorio Fernandez Trincado, Jose; Robin, Annie; Reyle, Celine; Terrien, Ryan; Allende-Prieto, Carlos; Hearty, Fred; Majewski, Steven R.; Schiavon, Ricardo P., 2015, AAS 225 #138.10

E9 Towards an Age/Activity Relationship for Ultracool Dwarfs
Schmidt, Sarah J.; West, Andrew A.; Hawley, Suzanne L.; Bochanski, John J., 2014, Cool Stars 18

E8 Ultracool Dwarf Spectroscopic Templates, Bolometric Fluxes, and χ Factors
Schmidt, Sarah J.; West, Andrew A.; Bochanski, John J.; Hawley, Suzanne L., 2013, AAS 222 #116.17

E7 First Results From The BOSS Ultracool Dwarf (BUD) Sample
Schmidt, Sarah J.; Hawley, Suzanne L.; Davenport, James R. A.; West, Andrew A.; Bochanski, John J., 2013, AAS 221 #158.21

E6 Using Hα Emission to Examine the Chromospheres of M and L dwarfs
Schmidt, Sarah J.; Hawley, Suzanne L.; Bochanski, John J.; West, Andrew A., 2012, Cool Stars 17

E5 The First Detection of Time-Variable Infrared Line Emission During M Dwarf Flares
Schmidt, Sarah J.; Hilton, E. J.; Tofflemire, B.; Wisniewski, J. P.; Kowalski, A. F.; Holtzman, J.; Hawley, S. L., 2011, AAS 218 #326.04

E4 X-ray and Radio Observations of LP349-25
Schmidt, Sarah J.; Osten, R. A.; Hawley, S. L.; Ngoc, P.; Reid, N., 2011, AAS 217 #242.18

E3 Colors and Kinematics of L Dwarfs in the Sloan Digital Sky Survey
Schmidt, Sarah J.: West, Andrew A.; Hawley, Suzanne L., 2009, Joint Annual Conference of the National Society of Black Physicist and National Society of Hispanic Physicists

E2 Cool Star Oxygen Abundances from Spectral Synthesis of TiO Bands
Schmidt, Sarah J,; Wallerstein, G.; Woolf, V. M.; and Bean, J. L., 2008, Cool Stars 15

E1 Activity and Kinematics of Ultracool Dwarfs
Schmidt, Sarah J.; Cruz, K. L., 2006, Cool Stars 14