SARAH JANE SCHMIDT

Citizenship: USA Leibniz-Institut für Astrophysik Potsdam (AIP)

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Employment Karl Schwarzschild Postdoctoral Fellow Sept 2015—present

Leibniz-Institut für Astrophysik Potsdam (AIP)

Columbus Prize Postdoctoral Fellow Sept 2012–Aug 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 Magnetic activity on small stars and warm brown dwarfs

Interests Determining the ages and metallicities of cool stars

Using kinematics to place M and L dwarfs in a Galactic context

Luminosity and mass function at the stellar/substellar boundary

Teaching Instructor, University of Washington Summer 2012

Experience 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 & Washington NASA Space Grant Graduate Fellow, 2012

Awards 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**

"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 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 - 2015Identifying young M and L dwarfs in a large sample of SDSS ultracool dwarfs. Currently: Astronomy Graduate Student at Harvard University

ERIKA WAGONER, OHIO STATE UNIVERSITY UNDERGRADUATE 2013-2014 Analyzing APOGEE data of late-K and early-M dwarfs in comparison to model grids. Currently: Physics Graduate Student at University of Arizona

COLLIN KIELTY, UNIVERSITY OF WASHINGTON UNDERGRADUATE 2012 Worked on the calculation of spectroscopic templates based on SDSS spectra of L dwarfs. Coauthor of Schmidt et al. (2014). Currently: Astronomy Graduate Student at University of Victoria

HEATHER GUNNING, UNIVERSITY OF WASHINGTON UNDERGRADUATE 2011 - 2014Worked on observations, data reduction, and analysis of spectroscopic observations of a sample of wide M dwarf binaries. First author of Gunning et al. (2014). Currently: Research and Instrumental Analyst at Space Telescope Science Institute

Service

Referee 2014-present Astronomical Journal, Astrophysical Journal

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.

APACHE POINT OBSERVATORY TELESCOPE ALLOCATION COMMITTEE 2010 Graduate student member of the internal University of Washington TAC; quarterly review of ~ 20 applications.

COOL STARS 16 LOCAL ORGANIZING COMMITTEE 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

Sarah Jane Schmidt 2 Curriculum Vitae

Outreach & Diversity

DIVERSITY JOURNAL CLUB

2012 - 2015

Instigated and facilitated a monthly journal club in the OSU astronomy department to present and discuss diversity issues.

SDSS TWEEP OF THE WEEK

2015

Spent a week describing my research and engaging with the public on the SDSS twitter account.

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.

SPEAKER AT UPPER ARLINGTON PUBLIC LIBRARY ASTRONOMY SERIES Spoke to a group of children and parents about the solar neighborhood.

2014

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 Led activities with a group of 8-12 year old kids. 2013

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

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

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

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 - 2011Co-I: 14 nights DAO 1.8-M (OPTICAL SPECTROGRAPH) 2009 PI: 4 nights; Co-I: 3 nights Additional LBT TWIN 8-M 2012-2015 Observing Eighteen nights queue observing using LUCI (IR spectrograph and imager), MODS (optical Experience spectrograph), and LBC (optical imager). McDonald 0.8-m 2014 Four nights of optical imagining. ARC 0.5-M 2009 - 2012Fourteen nights of optical imaging using Flare-cam. 2007-2012 Supervisor for small groups of undergraduates using optical imaging; 20 nights. CTIO 4-M 2006 Two nights on the optical spectrograph.

2010-2014

SDSS 2.5-M (BOSS)

Sarah Jane Schmidt 4 Curriculum Vitae

Publications

First Author Refereed

- 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
- Publications A7 Calibrating Ultracool Dwarfs: Optical Template Spectra, Bolometric Cor-RECTIONS, 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-AN SURVEY Schmidt, Sarah J.; Prieto, Jose L.; Stanek, K. Z.; Shappee, Benjamin J.; et al., 2014, ApJ 781
 - 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
 - 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 OB-SERVATION Schmidt, Sarah J.; Cruz, Kelle L.; Bongiorno, Bethany J.; Liebert, James; Reid, I. Neill, 2007, AJ 133 2258

Refereed **Publications**

- Additional 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 in press, ArXiv 1507.00057
 - 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 H α 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 H₂O, HCL, CO, OCS, SO₂, 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

 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, Brbara; 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 D4 Chromospheric Activity on L Dwarfs Talks Schmidt, Sarah J., Splinter Session: Magne

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

- 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 H α 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