Aaron S. Wolf

Contact Information

University of Michigan • Earth and Environmental Sciences
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Education

- California Institute of Technology, Pasadena, CA USA
  - **Ph.D., Planetary Science**, May 2013
  - Thesis: "Probing the Thermodynamic Properties of Mantle Rocks in Solid and Liquid States"
- California Institute of Technology, Pasadena, CA USA
  - **M.S., Planetary Science**, June 2009
- University of California, Santa Cruz, Santa Cruz, CA USA
  - **B.S., Physics**, June 2006
  - **B.S., Earth Sciences**, June 2006
  - Thesis: "Spin History of the Extrasolar Planetary System HD149026"

Academic Employment

- Turner Postdoctoral Fellow, 2014 - **present**, *University of Michigan* • Host: Rebecca Lange
- Postdoctoral Scholar, 2013 - 2013, *Caltech* • Advisor: Paul D. Asimow
- Graduate Research Assistant, 2006 - 2013, *Caltech* • Advisors: Paul D. Asimow and Jennifer M. Jackson
- Primary Research Assistant, 2006, *UC Santa Cruz* • Advisor: Gregory P. Laughlin
- Undergraduate Research Assistant, 2003 - 2005, *UC Santa Cruz* • Advisor: Gregory P. Laughlin
- Research Experience for Undergraduates, Summer 2003, *Cornell* • Advisors: Donald Campbell and Lynn Carter

Teaching Experience

- Seminar Organizer/Leader, *Mineral-Rock-Melts Reading Group*: Winter 2014, Fall 2014
- Teaching Assistant/Co-teacher, *Statistics and Bayesian Data Analysis*: Winter 2013
- Teaching Assistant, *Thermodynamics of Geologic Systems*: Spring 2011
- Teaching Assistant, *Planetary Structure and Evolution*: Fall 2008, Winter 2010
- Teaching Assistant, *Mineralogy (Lecture & Lab)*: Fall 2007

Advising Student Research

- Sean Hurt (graduate student) - Lattice dynamics and Thermodynamics of Ionic Materials Near Melting: Fall 2014
- Rong Zhou (undergrad) - Unified High Pressure and Temperature Equations of State: Fall 2014
- Wardah Mohammad Fadil (undergrad) - Unified High Pressure and Temperature Equations of State: Fall 2014

Awards and Honors

- Turner Postdoctoral Fellowship (*Univ. of Michigan Earth & Environmental Science fellowship*), 2014
- AGU Outstanding Student Paper Award (*Mineral and Rock Physics*), 2012
- AGU Outstanding Student Paper Award (*Mineral and Rock Physics*), 2008
- NSF Graduate Research Fellowship, 2007-2010
- Moore Fellowship (*Caltech institute fellowship*), 2006-2007
- Steck Award (*UC Santa Cruz award for the finest senior thesis*), 2006
- Chancelor's and Dean's Undergraduate Awards (*UC Santa Cruz awards recognizing outstanding senior theses*), 2006
- Thimann Scholarship (*UC Santa Cruz award for student with highest promise in natural sciences*), 2006
- Fridley Scholarship (*UC Santa Cruz award for outstanding student in physical sciences*), 2005
- Outstanding Senior in Earth Sciences (*UC Santa Cruz department graduation*), 2005
- Barry M. Goldwater Scholarship (*Honorable Mention*), 2004
- UC Regents Scholarship, 2001-2004

Publications

- **Wolf**, A. S., Asimow, P. D., Caracas, R. Cation Ordering in Fe-bearing Silicate Perovskite (Bridgmanite) and its Role in Disproportionation., (in prep.).
- **Wolf**, A. S., Jackson, J. M., Dera, P., Prakapenka, V. The Thermal Equation of State of (Mg,Fe)SiO_3 Perovskite and Implications for Lower Mantle Structures. *Earth and Planetary Science Letters*, (to be submitted).

- O'Rourke, J. G., **Wolf**, A. S., Ehlmann, B. L. (2014) Venus: Interpreting the spatial distribution of volcanically modified craters. *Geophysical Research Letters*, (in review).
- **Wolf**, A. S., Asimow, P. D., Stevenson, D. J. (2014) Coordinated Hard Sphere Mixture (CHaSM): A simplified model for oxide and silicate melts at mantle pressures and temperatures. *Geochimica et Cosmochimica Acta*, (in review).

- Keppel-Aleks, G., **Wolf**, A. S., Mu, M., Doney, S. C., Morton, D. C., Kasibhatla, P. S., Miller, J. B., Dlugokencky, E. J., Randerson, J. T. (2014) Separating the influence of temperature, drought, and fire on interannual variability in atmospheric CO_2. *Global Biogeochemical Cycles*, (accepted).
- Line, M. R., **Wolf**, A. S., Zhang, X., Knutson, H., Kammer, J. A., Ellison, E., Deroo, P., Crisp, D., Yung, Y. L. (2013) A Systematic Retrieval Analysis of Secondary Eclipse Spectra. I. A Comparison of Atmospheric Retrieval Techniques. *The Astrophysical Journal*, 775:137.
- Hayes, A. G., **Wolf**, A. S., Aharonson, O., Zebker, H., Lorenz, R., Kirk, R. L., Paillou, P., Lunine, J., Wye, L., Callahan, P., Wall, S., Elachi, C. (2010) Bathymetry and absorptivity of Titan's Ontario Lacus. *J. Geophys. Res.*, 115:E09009.
- Zhuravlev, K., Jackson, J., **Wolf**, A., Wicks, J., Yan, J., Clark, S. (2010) Isothermal compression behavior of (Mg,Fe)O using neon as a pressure medium. *Physics and Chemistry of Minerals*, 37:465–474.
- Meschiari, S., **Wolf**, A. S., Rivera, E., Laughlin, G., Vogt, S., Butler, P. (2009) Systemic: A Testbed for Characterizing the Detection of Extrasolar Planets. I. The Systemic Console Package. *Publications of the Astronomical Society of the Pacific*, 121:1016–1027.
- Ragozzine, D., **Wolf**, A. S. (2009) Probing the Interiors of very Hot Jupiters Using Transit Light Curves. *The Astrophysical Journal*, 698:1778, (Note: both authors contributed equally).
- **Wolf**, A. S., Ragozzine, D. (2008) Probing the Interiors of Very Hot Jupiters Using Transit Light Curves. *Proceedings of the International Astronomical Union*, 4:163–169.
- Ammons, S. M., Robinson, S. E., Strader, J., Laughlin, G., Fischer, D., **Wolf**, A. (2006) The N2K Consortium. IV. New Temperatures and Metallicities for More than 100,000 FGK Dwarfs. *The Astrophysical Journal*, 638:1004.

- Laughlin, G., Butler, R. P., Fischer, D. A., Marcy, G. W., Vogt, S. S., **Wolf**, A. S. (2005) The GJ 876 Planetary System: A Progress Report. *The Astrophysical Journal*, 622:1182.
- Laughlin, G., **Wolf**, A., Vanmunster, T., Bodenheimer, P., Fischer, D., Marcy, G., Butler, P., Vogt, S. (2005) A Comparison of Observationally Determined Radii with Theoretical Radius Predictions for Short-Period Transiting Extrasolar Planets. *The Astrophysical Journal*, 621:1072.
- Sato, B., Fischer, D. A., Henry, G. W., Laughlin, G., Butler, R. P., Marcy, G. W., Vogt, S. S., Bodenheimer, P., Ida, S., Toyota, E., **Wolf**, A., Valenti, J. A., Boyd, L. J., Johnson, J. A., Wright, J. T., Ammons, M., Robinson, S., Strader, J., McCarthy, C., Tah, K. L., Minniti, D. (2005) The N2K Consortium. II. A Transiting Hot Saturn around HD 149026 with a Large Dense Core. *The Astrophysical Journal*, 633:465.

Invited Talks

- Southwest Research Institute (SWRI), Boulder CO. April 2013.
- Washington University in Saint Louis - Earth and Planetary Sciences, Saint Louis MO. March 2013.
- University of Michigan - Earth and Environmental Sciences, Ann Arbor MI. March 2013.

Courses and Workshops

- Dynamical, Dielectric and Magnetic Properties of Solids with Abinit, Lyon FR, May 2014
- Deform & COMPRES EarthCube Workshop, Washington DC, Nov 2013
- Keck Institute for Space Studies, Innovative Approaches to Planetary Seismology, Pasadena CA, March 2010
- Theoretical and Computational Methods in Mineral Physics (Pre-AGU shortcourse), San Francisco CA, December 2009
- Summer School in Statistics for Astronomers, Penn State PA, June 2009

Conference Presentations

- **Wolf**, A. S., Asimow, P. D., Caracas, R. (2014) Cation Ordering in Fe-bearing Silicate Perovskite (Bridgmanite) and its Role in Disproportionation. *AGU Fall Meeting*, (talk).
- Antoshechkina, P. M., **Wolf**, A. S., Hamecher, E. A., Asimow, P. D., Ghiorso, M. S. (2013) Simultaneous calibration of end-member thermodynamic data and solution properties with correlated uncertainties. *AGU Fall Meeting*, (poster).
- **Wolf**, A. S., Asimow, P. D., Stevenson, D. J. (2013) Coordinated HArd Sphere Model (CHASM): A Simplified Model for Silicate and Oxide Liquids at Mantle Conditions. *AGU Fall Meeting*, (poster).
- **Wolf**, A. S., Jackson, J. M., Dera, P., Prakapenka, V. (2013) The Thermal Properties of Iron-bearing Mg-Silicate Perovskite and the Implications for Lower Mantle Structures. *COMPRES Meeting*, (talk & poster).
- **Wolf**, A. S., Jackson, J. M., Dera, P., Prakapenka, V. (2013) The Thermal Properties of Iron-bearing Mg-Silicate Perovskite and the Implications for Lower Mantle Structures. *Gordon Research Conference*, (poster).
- **Wolf**, A. S., Asimow, P. D., Stevenson, D. J. (2012) A Simplified Cation Speciation Model for Silicate Liquids at Mantle Pressures and Temperatures. *AGU meeting*, (poster).
- **Wolf**, Aaron S., Asimow, Paul D., Caracas, R. (2012) A Simplified Cation Speciation Model for Silicate Liquids at High Pressures. *Goldschmidt Meeting*, (talk).
- **Wolf**, A. S., Jackson, J. M., Dera, P. K., Prakapenka, V. (2010) Thermal Equation of State of $(Mg,Fe)SiO_3$ Perovskite in a Ne Pressure Medium. *AGU fall meeting*, (poster).
- **Wolf**, A. S., Asimow, P. D., Caracas, R. (2008) Thermodynamic phase relations of the MgO-FeO-SiO2 system in the lower mantle. *Goldschmidt conference*, (poster).

- **Wolf**, A. S., Caracas, R., Asimow, P. D. (2008) Thermodynamic Phase Relations in the MgO-FeO-SiO_2 System in the Lower Mantle. *AGU fall meeting*, (talk).
- **Wolf**, A. S., Ragozzine, D. (2008) Probing the Interiors of Very Hot Jupiters Using Transit Light Curves. *Transiting planets iAU symposium*, (talk).