

Kamber R. Schwarz

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Employment

University of Arizona
Sagan Postdoctoral Fellow

Tucson, AZ
September 2018 - Present

Education

University of Michigan
PhD in Astronomy & Astrophysics

Ann Arbor, MI
September 2012 - August 2018

University of Arizona
BS Astronomy & Physics, Cum Laude & Honors

Tucson, AZ
August 2008 - May 2012

Publications

First author publications

- Schwarz, K. R., Bergin E. A., Cleeves, L. I., Zhang, K., Öberg, K. I., Blake, G. A., Anderson, D. “Unlocking CO Depletion in Protoplanetary Disks II. Primordial C/H Predictions Inside the CO Snowline” 2019, ApJ, 877, 131
- Schwarz, K. R., Teague, R., Bergin E. A. “Line Ratios Reveal N₂H⁺ Emission Originates Above the Midplane in TW Hydrae” 2019, ApJ, 876, L13
- Schwarz, K. R., Bergin E. A., Cleeves, L. I., Zhang, K., Öberg, K. I., Blake, G. A., Anderson, D. “Unlocking CO Depletion in Protoplanetary Disks I. The Warm Molecular Layer” ApJ, 823, 91
- Schwarz, K. R., Bergin E. A., Cleeves, L. I., Blake, G. A., Zhang, K., Öberg, K. I., van Dishoeck, E. F., Qi, C. “The Radial Distribution of H₂ and CO in TW Hya as Revealed by Resolved ALMA Observations of CO Isotopologues” 2016, ApJ, 823, 91
- Schwarz, K. R., & Bergin, E. A. “The Effects of Initial Abundances on Nitrogen in Protoplanetary Disks” 2014, ApJ, 797, 113
- Schwarz, K. R., Shirley, Y. L., & Dunham, M. M. “A Systematic Search for Molecular Outflows Toward Candidate Low-Luminosity Protostars” 2012, AJ, 144, 115

Co-authored publications

- Zhang, K., Bergin, E. A, Schwarz, K. R., Krijt, S., Ciesla, F. “Systematic Variations of CO Gas Abundance with Radius in Gas-rich Protoplanetary Disks” 2019, ApJ, 883, 98

- Anderson, D. E., Blake, G. A., Bergin E. A., Zhang, K., Carpenter, J. M., **Schwarz, K. R.**, Huang, J., Öberg, K. I. “Probing the Gas Content of Late-stage Protoplanetary Disks with N_2H^+ ” 2019, ApJ, 881, 127
- Macías, E., Espailat, C., Ribas, Á., **Schwarz, K. R.**, Anglada, G., Osorio, M., Carrasco-González, C., Gómez, J., Robinson, C., “Multiple Rings in the Transitional Disk of GM Aurigae Revealed by VLA and ALMA” 2018, ApJ, 865, 37
- Krijt, S., **Schwarz, K. R.**, Bergin, E. A., Ciesla, F. J. “Transport of CO in Protoplanetary Disks: Consequences of Pebble Formation, Settling, and Radial Drift” 2018, ApJ, 864, 78
- Favre, C., Fedele, D., Semenov, D., Parfenov, S., Codella, C., Ceccarelli, C., Bergin, E. A., Chapillon, E., Testi, L., Hersant, F., Lefloch, B., Fontani, F., Blake, G. A., Cleeves, L. I., Qi, C., **Schwarz, K. R.**, Taquet, V. “First Detection of the Simplest Organic Acid in a Protoplanetary Disk” 2018, ApJ, 862L, 2
- Zhang, K., Bergin, E. A., Blake, G. A., Cleeves, L. I., **Schwarz, K. R.** “Mass inventory of the giant-planet formation zone in a solar nebula analogue” 2017, Nature Astronomy, 1, 0130
- Bergin, E. A., Du, F., Cleeves, L. I., Blake, G. A., **Schwarz, K. R.**, Visser, R., Zhang, K. “Hydrocarbon Emission Rings in Protoplanetary Disks Induced by Dust Evolution” 2016, ApJ, 831, 101
- Zhang, K., Bergin, E. A., Blake, G. A., Cleeves, L. I., Hogerheijde, M., Salinas, V., **Schwarz, K. R.** “On the Commonality of 10-30 AU Sized Axisymmetric Dust Structures in Protoplanetary Disks” 2016, ApJ, 818, L16

Presentations

- Extreme Solar Systems IV, Reykjavik, Iceland, August, 2019; Poster
- Gordon Research Symposium “Origins of Solar Systems: The Composition and Assembly of Planets”, South Hadley, MA, June, 2019; Contributed Talk
- “New Horizons in Planetary Systems”, Victoria, BC, May, 2018; Contributed Talk
- TAC Seminar, University of California Berkeley, Berkeley, CA, March, 2019
- LPL Colloquium, University of Arizona, Tucson, AZ, November, 2018
- “Astrochemistry: Past, Present, & Future”, Pasadena, CA, July, 2018; Contributed Talk
- Department of Geophysical Sciences Seminar, University of Chicago, January, 2018
- AAS Meeting 231, National Harbor, MD, January, 2018; Contributed Talk
- Leiden Observatory Astrochemistry Seminar, Leiden, Netherlands, December, 2017

- “The origin of galaxies, stars, and planets in the era of ALMA”, Pasadena, CA, November, 2017; Contributed Talk
- Habitable Worlds 2017, Laramie, WY, November, 2017; Invited Review
- Gordon Research Conference “Origins of Solar Systems: Making a Habitable Planet”, South Hadley, MA, June, 2017; Poster
- IAU Symposium 332 “Astrochemistry VII: Through the Cosmos from Galaxies to Planets”, Puerto Varas, Chile, March, 2017; Poster
- “Half a Decade of ALMA: Cosmic Dawns Transformed”, Indian Wells, CA, September, 2016; Contributed Talk
- “Exoplanets I”, Davos, Switzerland, July, 2016; Poster
- “Resolving Planet Formation in the Era of ALMA and Extreme AO”, Santiago, Chile, May, 2016; Contributed Talk
- “From clouds to protoplanetary disks: the astrochemical link”, Berlin, Germany, October, 2015; Contributed Talk
- Gordon Research Conference “Origins of Solar Systems: The Physics and Chemistry of Building Planets”, South Hadley, MA, June, 2015; Poster
- The Olympian Symposium on Star Formation, Mount Olympus, Greece, May, 2014, Poster

Outreach

- StemAZing Teacher Workshop “Imagine Alien Worlds: The Hunt for Earth Twins” facilitator, October, 2019
- Arizona Science Teachers Association Structure and Function Symposium invited talk “How Planet Composition Influences Habitability”, July, 2019
- Space Drafts public talk “What We Know About Planetary Nurseries”, March, 2019
- Science Olympiad “Reach for the Stars” Event Coach, Slauson Middle School, 2015-2017 Description: Ran weekly practices including homework, quizzes, lectures, and hands-on activities
- Led astronomy activities at University of Michigan “Females Excelling More in Math and Science” Capstone Events, 2013-2015

Professional Service

- LPL Postdoc Faculty Representative, 2019-Present
- Pascucci Disks & Exoplanets Group Meeting Organizer, 2019-Present
- Hubble Space Telescope TAC, 2019
- FINESST External Reviewer, 2019
- University of Arizona Origins Seminar Organizer, 2018-Present
- Referee for ApJ, 2018-Present
- Lead Equi-tea discussion on graduate student mental health, University of Michigan, February, 2018
- Referee for A&A, 2017-Present
- Chair of Gordon Research Symposium “Origins of Solar Systems: The Foundations of Planets”, South Hadley, MA, June, 2017
- Internal NOEMA/IRAM TAC, 2015-2017
- Graduate Prospective Weekend Activities Coordinator, University of Michigan, 2014, 2017
- Stars, Planets, and Formation Group Meeting Organizer, University of Michigan, 2015-2016
- Internal Magellan/MDM Observatory TAC, University of Michigan, 2015

Teaching & Mentoring

- Guest Lecturer, Planetary Science 450/550 “Origin of the Solar System and Other Planetary Systems”, Fall 2019
- Arizona/NASA Space Grant Program mentor, 2019-Present
- Guest Lecturer, Planetary Science 501B “Chemistry of the Solar System”, Spring 2019
- Guest Lecturer, Planetary Science 214 “Astrobiology: A Planetary Perspective”, Fall 2018
- Supervised undergraduate student Lauren Weinburg, Summer 2015
- Graduate Student Instructor, Astronomy 102 “Stars, Galaxies, and the Universe”, Fall 2013
- Graduate Student Instructor, Astronomy 105 “The Cosmos Through the Constellations”, Winter 2013

Accepted Observing Proposals (as PI)

- NOEMA, Winter 2017; “Constraining the Nitrogen Abundance Towards Class 0 Protostars: A Limited Survey”, B Priority
- NOEMA, Summer 2017; “Constraining the Nitrogen Abundance Towards Class 0 Protostars: A Limited Survey”, A Priority
- ALMA Cycle 4, April 2016; “Characterizing the Gas Surface Density and CO Abundance Structure in Disks with Known Gas Masses”, A Priority
- ALMA Cycle 4, April 2016; “The First Constraints on the Volatile Nitrogen Abundance in TW Hya”, A Priority
- NOEMA, Summer 2016; “Constraining the Nitrogen Abundance Towards a Class 0 Protostar”, A Priority
- IRAM 30m, Winter 2013; “Probing the chemistry of disks in enhanced radiation fields”, B Priority

Career Development

- Visualizing the Kinematics of Planet Formation Workshop, Flatiron CCA, New York, NY, October 2019
- Diversity in the Classroom workshop series, University of Arizona, Fall 2019
- Preparing for Faculty Job Applications workshop series, University of Arizona, Fall 2019
- Preparing Future Faculty Seminar, University of Michigan, May 2018

Awards & Grants

- Rackham Graduate Student Travel Grant (4), 2015, 2017, 2018
- NRAO Student Observing Support Award, ALMA Cycle 4, \$35,000
- American Astronomical Society International Travel Grant, 2015
- Excellence in Undergraduate Research Award, Astronomy Department, Spring 2012