

Somayeh Khakpash

CURRICULUM VITAE

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Research interests

Microlensing, Astronomical Data Science and Machine Learning, Lightcurve Classification, Stellar Astrophysics

Education

Lehigh University

Ph.D. Physics 2017- 2020

M.S. Physics 2015- 2016

Advisor : Professor Joshua Pepper

Sharif University of Technology

B.A. Physics 2010-2015

Skills

Programming Software: Python, C++, MATLAB, LaTeX

Professional Packages: Astropy, Scipy, George, AstroML, scikit-learn, Glue, Bokeh, ParaView

Awards and Honors

- AAS FAMOUS Travel Grant, Jan 2019
- LSSTC Data Science Fellowship Program: Two-year program to teach data science skills to astronomy graduate students, started September 2017 until June 2019.
- Lehigh University, College of Arts and Sciences Dean's Summer Fellowship 2017

Refereed Publications

1. **Khakpash, S.**, Penny, M. and Pepper, J., 2019. "A Fast Approximate Approach to Microlensing Survey Analysis". *The Astronomical Journal*, 158(1), p.9.
2. Johns, D., Reed, P., Rodriguez, J., Pepper, J., 2019, including **Khakpash, S.** "KELT-23b: A Hot Jupiter Transiting a Near-Solar Twin Close to the TESS and JWST Continuous Viewing Zones". *The Astronomical Journal*, 158(2), p.14.
3. Rodriguez, J.E., Eastman, J.D., Zhou, G., Quinn, 2019, including **Khakpash, S.** "KELT-24b: A 5M_J Planet on a 5.6 day Well-Aligned Orbit around the Young V= 8.3 F-star HD 93148". *arXiv preprint arXiv:1906.03276*.

Submitted

1. **Khakpash, S.**, Pepper, J., Penny, M., Gaudi, S., and Street, R., 2020 "Classifying High-cadence Microlensing Light Curves I; Defining Features"

White Papers

1. Street, R.A., Lund, M.B., Donachie, M., **Khakpash, S.**, 2018. "Unique Science from a Coordinated LSST-WFIRST Survey of the Galactic Bulge". *arXiv preprint arXiv:1812.04445*
2. Street, R.A., Lund, M.B., **Khakpash, S.**, Donachie, 2018. "The Diverse Science Return from a Wide-Area Survey of the Galactic Plane". *arXiv preprint arXiv:1812.03137*.

Attended Conferences and Workshops

- Rubin Observatory Project & Community Workshop, Aug 2020, Virtual
 - Member of the Scientific Organizing Committee
- LSST TVS-SMWLV Workshop, Oct 2019, Newark, DE
 - Member of the Scientific Organizing Committee
- Central Pennsylvania Consortium Conference, Apr 2019, Gettysburg, PA
- International Microlensing Conference, Jan 2019, Nashville, TN
- American Astronomical Society Meeting, Jan 2019, Seattle, WA
- American Astronomical Society Meeting, Jan 2018, Washington DC
- LSST Transients and Variable Stars Science Collaboration Workshop, Jun 2018, Bethlehem, PA
- Sagan Exoplanet Workshop: Microlensing in the Era of WFIRST, Aug 2017, Pasadena, CA
- KELT Workshop, Jun 2017, Bethlehem, PA
- KELT Workshop, Aug 2016, Nashville, TN
- Astrophilly Conference, Aug 2016, Philadelphia, PA
- Astronomy Summer School, Aug 2013, Karaj, Iran

Contributed Talks and Posters

- **Talk** at Rubin Observatory Project & Community Workshop, Aug 2020, Virtual
- **Talk** at LSST TVS-SMWLV Workshop, Oct 2019, Newark, DE
- **Talk** at Central Pennsylvania Consortium Conference, Apr 2019, Gettysburg, PA
- **Talk** at International Microlensing Conference, Jan 2019, Nashville, TN
- **Talk** at American Astronomical Society Conference, Jan 2019, Seattle, WA
- **Poster** at American Astronomical Society Conference, Jan 2018, Washington DC
- **Talk** at KELT Workshop, Aug 2016, Nashville, TN

Invited Talks

- Pennsylvania State University, Oct 2019, State Collage, PA
- The Lehigh Valley Amateur Astronomical Society (LVAAS), Mar 2019, Allentown, PA

Teaching Experience

- Co-teaching “Modern Astrophysics II”: An upper-level undergraduate course in galaxies and cosmology, with Professor Pepper, Spring 2019
- Teaching assistant for “Introduction to Astronomy”, Fall 2018
- Instructor for Physics Lab I, Fall 2015 & 2016 & 2019, Spring 2019
- Instructor for Physics Lab II, Spring 2017 & 2018
- Instructor for Concepts in Physics Lab, Spring 2016

References

- **Professor Joshua Pepper**
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- **Professor Matthew Penny**
Assistant Professor of Physics and Astronomy, Louisiana State University
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- **Dr. Rachel Street**
Project Scientist, Las Cumbres Observatory
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