

# Somayeh Khakpash

## CURRICULUM VITAE

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### Research interests

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Microlensing, Transients, Machine learning, Lightcurve classification, Stellar astrophysics

### Education

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#### 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

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

**Professional Packages:** George, AstroML, scikit-learn, Keras

**Visualization Software:** Glue, Bokeh, ParaView

### Awards and Honors

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- 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

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1. **Khakpash, S.**, Pepper, J., Penny, M., Gaudi, S., and Street, R., 2021 "Classifying High-cadence Microlensing Light Curves I; Defining Features". *Accepted to Astronomical Journal*
2. **Khakpash, S.**, Penny, M. and Pepper, J., 2019. "A Fast Approximate Approach to Microlensing Survey Analysis". *The Astronomical Journal*, 158(1), p.9.
3. Romy Rodríguez Martínez, B Scott Gaudi, Joseph E Rodriguez, George Zhou, 2020, including **Khakpash, S.** "KELT-25 b and KELT-26 b: A Hot Jupiter and a Substellar Companion Transiting Young A Stars Observed by TESS". *The Astronomical Journal*, 160(3), p.111.
4. F Davoudi, SJ Jafarzadeh, A Poro, O Basturk, S Mesforoush, 2020, including **Khakpash, S.** "Light curve analysis of ground-based data from exoplanets transit database". *New Astronomy*, 76, p. 101305.
5. 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.
6. Rodríguez, J.E., Eastman, J.D., Zhou, G., Quinn, 2019, including **Khakpash, S.** "KELT-24b: A 5M<sub>J</sub> Planet on a 5.6 day Well-Aligned Orbit around the Young V= 8.3 F-star HD 93148". *arXiv preprint arXiv:1906.03276*.

### White Papers

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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*.
3. Jennifer C Yee, Jay Anderson, Rachel Akeson, Etienne Bachelet, 2018, including **Khakpash, S.** "White Paper: Exoplanetary Microlensing from the Ground in the 2020s". *arXiv preprint arXiv:1803.07921*

## Attended Conferences and Workshops

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- American Astronomical Society Meeting, Jan 2021, Virtual
- 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

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- **Talk** at Rubin Observatory Project & Community Workshop, Aug 2020, Virtual
- **Talk** at University of Delaware, Nov 2019, Newark, DE
- **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

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

## Teaching Experience

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- 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