Ryan Keeley

Cosmology is cool

Education

2008–2012 **B.S. Physics and History**, *California Institute of Technology*, Pasadena, CA, .
Description

2012–2016 **Masters Physics**, *University of California, Irvine*, Irvine, CA.

2012–2018 **PhD Physics**, *University of California, Irvine*, Irvine, CA.

Academic Positions

2014–2018 **University of California, Irvine**, *Graduate Research Assistant*, Prof. Kevork N. Abazajian, PI.

2018–Present **Korea Astronomy Space Science Institute**, *Postdoctoral Researcher*, Arman Shafieloo, Supervisor.

Invited Talks and Conferences

December 2019 **6th Korea-Japan Workshop on Dark Energy**, *Transitional Dark Energy: A solution to the H0 tension*.

October 2019 **KAS Fall 2019**, *Pillars of the standard model of cosmology: dark energy and the cosmological constant*.

September 2019 **CosKASI-ICG-NAOC-YITP Workshop 2019**, *Transitional Dark Energy: A solution to the H0 tension*.

August 2019 **COSMO19 - Poster**, *Transitional Dark Energy: A solution to the H0 tension*.

July 2019 **KITP UCSB Tensions between Early and Late Universe**, *Transitional Dark Energy: A solution to the H0 tension*.

July 2019 **DESI Collaboration Meeting**, *Model independent methods in cosmology*.

April 2019 **COSKASI 19**, *Transitional Dark Energy: A solution to the H0 tension*.

February 2019 **KAS Spring Meeting**, *Model independent inference of the expansion history and implications for the growth of structure*.

November 2018 **KIAS structure formation workshop**, *Model independent inference of the expansion history and implications for the growth of structure*.

October 2018 **CosKASI-ICG-NAOC-YITP Workshop 2018**, *Model independent inference of the expansion history and implications for the growth of structure*.

August 2018 **5th Korea-Japan Workshop on Dark Energy**, *Model independent inference of the expansion history and implications for the growth of structure*.

9581 Onset Cir – 92646 Huntington Beach, CA – USA
+1 (714) 625 7957 • *rkeeley@kasi.re.kr* • *rekeeley.github.io*
ryan.keeley • *rekeeley*

June 2018 **Conference on the Intersection of Particle and Nuclear Physics**, *Dark Matter Interpretation of the Galactic Center Gamma Ray Excess*.

February 2018 **Texas A&M High Energy seminar**, *What the Milky Ways Dwarfs tell us about the Galactic Center extended excess*.

August 2017 **TeV Particle Astrophysics conference**, *What the Milky Way's Dwarfs tell us about the Galactic Center extended excess*.

July 2017 **Virginia Tech**, *Summer Institute for Neutrino Theory*.

January 2017 **American Physical Society - April Meeting**, *Bright gamma-ray Galactic Center excess and dark dwarfs: Strong tension for dark matter annihilation despite Milky Way halo profile and diffuse emission uncertainties*.

Software

October 2017 **Cosmological expansion history inference using Gaussian processes**, *DOI:10.5281/zenodo.999564*.

April 2019 **Cosmological expansion history inference with a 1% forecasted H0 measurement using Gaussian processes**, *DOI:10.5281/zenodo.3116772*.

Programming Languages

Python

C

C++

C#

R

Teaching Experience

2012–2018 **Physics Teaching Assistant**, *UC, Irvine*.

Taught various classes from the standard introductory labs and courses to the more specialized classes aimed at teaching physics and astronomy to non-science majors, to teaching upper division astronomy courses.

2016–2016 **Physics Instructor**, *UC, Irvine*.

Taught one of the introductory physics courses at UCI

Service

Local Outreach

2016–2018 **Teaching through COSMOS program at UC, Irvine**.

Taught basic cosmology and particle physics to high school students, ran demonstrations for basic kinematics concepts, and designed a cloud chamber kit appropriate for the students to build themselves.

Publications

[1] * Kevork N. Abazajian and Ryan E. Keeley. Bright gamma-ray Galactic Center excess and dark dwarfs: Strong tension for dark matter annihilation despite Milky Way halo profile and diffuse emission uncertainties. *Physical Review D*, 93(8):083514,

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Apr 2016.

[2] * Shahab Joudaki, Manoj Kaplinghat, Ryan E. Keeley, and David Kirkby. Model independent inference of the expansion history and implications for the growth of structure. *Physical Review D*, 97(12):123501, Jun 2018.

[3] Manoj Kaplinghat, Ryan E. Keeley, Tim Linden, and Hai-Bo Yu. Tying Dark Matter to Baryons with Self-Interactions. *Physical Review Letters*, 113(2):021302, Jul 2014.

[4] * Ryan E. Keeley, Kevork N. Abazajian, Anna Kwa, Nicholas L. Rodd, and Benjamin R. Safdi. What the Milky Way's dwarfs tell us about the Galactic Center extended gamma-ray excess. *Physical Review D*, 97(10):103007, May 2018.

[5] * Ryan E. Keeley, Shahab Joudaki, Manoj Kaplinghat, and David Kirkby. Implications of a transition in the dark energy equation of state for the H_0 and σ_8 tensions. *arXiv e-prints*, page arXiv:1905.10198, May 2019.

[6] * Ryan E. Keeley, Arman Shafieloo, Benjamin L'Huillier, and Eric V. Linder. Debiasing Cosmic Gravitational Wave Sirens. *arXiv e-prints*, page arXiv:1905.10216, May 2019.

[7] * Kai Liao, Arman Shafieloo, Ryan E. Keeley, and Eric V. Linder. A model-independent determination of the Hubble constant from lensed quasars and supernovae using Gaussian process. *arXiv e-prints*, page arXiv:1908.04967, Aug 2019.

[8] * Arman Shafieloo, Ryan E. Keeley, and Eric V. Linder. Will Gravitational Wave Sirens Determine the Hubble Constant? *arXiv e-prints*, page arXiv:1812.07775, Dec 2018.

* Corresponding Author

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