

Ryan Keeley

Publications

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Publications

- [1] Ryan E. Keeley, Arman Shafieloo, and William L. Matthewson. Could We Be Fooled about Phantom Crossing? *arXiv*, 2506.15091, 6 2025.
- [2] Ryan E. Keeley, Kevork N. Abazajian, Manoj Kaplinghat, and Arman Shafieloo. Preference for evolving dark energy from cosmological distance measurements and possible signatures in the growth rate of perturbations. *Phys. Rev. D*, 112(4):043501, 2025.
- [3] Charles Gannon, Anna Nierenberg, Andrew Benson, Ryan Keeley, Xiaolong Du, and Daniel Gilman. Dark matter substructure: A lensing perspective. *Physical Review D*, 112(2):023532, July 2025.
- [4] Elahe Khalouei, Arman Shafieloo, Alex G. Kim, Ryan E. Keeley, William Sheu, Gregory S. H. Paek, Myungshin Im, Xiaosheng Huang, and Hyung Mok Lee. Detection of unresolved strongly lensed supernovae with the 7-Dimensional Telescope. *Astron. Astrophys.*, 698:A266, 2025.
- [5] Xiaolei Li, Ryan E. Keeley, and Arman Shafieloo. Redshift Evolution of the X-Ray and Ultraviolet Luminosity Relation of Quasars: Calibrated Results from SNe Ia. *Astrophys. J.*, 983(2):141, 2025.
- [6] Benjamin L'Huillier, Ayan Mitra, Arman Shafieloo, Ryan E. Keeley, and Hanwool Koo. Litmus tests of the flat Λ CDM model and model-independent measurement of $H_0 r_d$ with LSST and DESI. *JCAP*, 05:030, 2025.
- [7] Ryan E. Keeley, A. M. Nierenberg, D. Gilman, C. Gannon, S. Birrer, T. Treu, A. J. Benson, X. Du, K. N. Abazajian, T. Anguita, V. N. Bennert, S. G. Djorgovski, K. K. Gupta, S. F. Hoenig, A. Kusenko, C. Lemon, M. Malkan, V. Motta, L. A. Moustakas, Maverick S. H. Oh, D. Sluse, D. Stern, and R. H.

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- [9] Xiaolei Li, Ryan E. Keeley, Arman Shafieloo, and Kai Liao. A Model-independent Method to Determine H_0 Using Time-delay Lensing, Quasars, and Type Ia Supernovae. *Astrophys. J.*, 960(2):103, 2024.
- [10] Ryan E. Keeley, Anna M. Nierenberg, Daniel Gilman, Simon Birrer, Andrew Benson, and Tommaso Treu. Pushing the limits of detectability: mixed dark matter from strong gravitational lenses. *Mon. Not. Roy. Astron. Soc.*, 524(4):6159–6166, 2023.
- [11] Ryan E. Keeley, Arman Shafieloo, and Benjamin L’Huillier. An Analysis of Variance of the Pantheon+ Dataset: Systematics in the Covariance Matrix? *Universe*, 10(12):439, 2024.
- [12] Helena García Escudero, Jui-Lin Kuo, Ryan E. Keeley, and Kevork N. Abazajian. Early or phantom dark energy, self-interacting, extra, or massive neutrinos, primordial magnetic fields, or a curved universe: An exploration of possible solutions to the H_0 and σ_8 problems. *Phys. Rev. D*, 106(10):103517, 2022.
- [13] **Seung-gyu Hwang, Benjamin L’Huillier, Ryan E. Keeley, M. James Jee, and Arman Shafieloo. How to use GP: effects of the mean function and hyperparameter selection on Gaussian process regression. *JCAP*, 02:014, 2023.
- [14] Ryan E. Keeley and Arman Shafieloo. Ruling out new physics at low redshift as a solution to the h_0 tension. *PRL*, 9 2023.
- [15] Elcio Abdalla, Ryan E. Keeley, et al. Cosmology intertwined: A review of the particle physics, astrophysics, and cosmology associated with the cosmological tensions and anomalies. *JHEAp*, 34:49–211, 2022.
- [16] Ryan E. Keeley and Arman Shafieloo. On the distribution of Bayesian evidence. *Mon. Not. Roy. Astron. Soc.*, 515(1):293–301, 2022.
- [17] **Hanwool Koo, Ryan E. Keeley, Arman Shafieloo, and Benjamin L’Huillier. Bayesian vs frequentist: comparing Bayesian model selection with a frequentist approach using the iterative smoothing method. *JCAP*, 03(03):047, 2022.

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- [23] **Kai Liao, Arman Shafieloo, Ryan E. Keeley, and Eric V. Linder. Determining Model-independent H0 and Consistency Tests. *Astrophys. J. Lett.*, 895(2):L29, 2020.
- [24] **Hanwool Koo, Arman Shafieloo, Ryan E. Keeley, and Benjamin L’Huillier. Model-independent Constraints on Type Ia Supernova Light-curve Hyperparameters and Reconstructions of the Expansion History of the Universe. *Astrophys. J.*, 899(1):9, 2020.
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White Papers and Letters of Interest

NANCY: Next-generation All-sky Near-infrared Community survey, [arxiv:2306.11784](#).

Report of the Topical Group on Cosmic Probes of Fundamental Physics for for Snowmass 2021, [arxiv:2209.11726](#).

Inflation and Dark Energy from spectroscopy at $z > 2$, [arxiv:1903.09208](#).

The Next Generation of Cosmological Measurements with Type Ia Supernovae, [arxiv:1903.05128](#).

Messengers from the Early Universe: Cosmic Neutrinos and Other Light Relics, [arxiv:1903.04763](#).

Gravitational wave cosmology and astrophysics with large spectroscopic galaxy surveys, [arxiv:1903.04730](#).

Dark Matter Science in the Era of LSST, [arxiv:1903.04425](#).

Primordial Non-Gaussianity, [arxiv:1903.04409](#).

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