Joshua S. Speagle

Harvard University Department of Astronomy
60 Garden Street, Cambridge, MA 02138
jspeagle[at]cfa.harvard.edu
joshspeagle.github.io

POSITIONS

National Science Foundation Graduate Research Fellow: Harvard University — 2016-**Present**
Project Academic Support Staff: Kavli IPMU (WPI), UTIAS, The University of Tokyo — 2015-2016

EDUCATION

Harvard University: MA/PhD Program — 2016-**Present**
Advisers: Daniel Eisenstein (Primary), Charlie Conroy, Doug Finkbeiner
Harvard University: BA with Honors in Astrophysics and Physics — 2011-2015
Adviser: Daniel Eisenstein

RESEARCH INTERESTS

Statistical methods, machine learning, galaxy evolution, cosmology, stellar populations.

TEACHING

Teaching Fellow: ASTRON 130 (Harvard) — Spring 2018
Teaching Fellow: ASTRON 16 (Harvard) — Spring 2017
Course Assistant: PHYS 16 (Harvard) — Fall 2013

AWARDS & HONORS

National Science Foundation Graduate Research Fellowship — 2016
Herchel Smith-Harvard Undergraduate Science Fellowship — 2014
Harvard College Research Program Research Fellowship — Feb. 2014
Oct. 2012
Apr. 2012
Feb. 2012
Weismann International Internship Program Fellowship — 2013
Chambliss Astronomy Achievement Student Award — *Jan. 2013
Jan. 2011
REU in Astronomy and Astrophysics: Cornell U. — 2012

* Honorable mention

SELECTED PUBLICATIONS

12. Zucker, C. **et al.**, submitted to ApJ: "A New Technique for Mapping Distances Across the Perseus Molecular Cloud Using CO Observations and Stellar Photometry" **[arxiv: 1803.08931]**

11. Medezinski, E. **et al.**, PASJ: "Source Selection for Cluster Weak Lensing Measurements in the Hyper Sprime-Cam Survey" **[arxiv: 1706.00427]**

10. Tanaka, M. **et al.**, PASJ: "Photometric Redshifts for the Hyper Suprime-Cam Subaru Strategic Program Data Release 1" **[arxiv: 1704.05988]**

9. **Speagle, J. S.** & Eisenstein, D. J., MNRAS: "Deriving Photometric Redshifts with Fuzzy Archetypes and Self-Organizing Maps II. Implementation" **[arxiv: 1510.08080]**

8. **Speagle, J. S.** & Eisenstein, D. J., MNRAS: "Deriving Photometric Redshifts with Fuzzy Archetypes and Self-Organizing Maps I. Methodology" **[arxiv: 1510.08073]**

7. **Speagle, J. S.** et al., MNRAS: "Exploring Photometric Redshifts as an Optimization Problem: An Ensemble MCMC and Simulated Annealing-Driven Template-fitting Approach" **[arxiv: 1508.02484]**

6. Steinhardt, C. L. **et al.**, ApJ: "The Impossibly Early Galaxy Problem" **[arxiv: 1506.01377]**

5. Masters, D. C. **et al.**, ApJ: "Mapping the Galaxy Color-Redshift Relation: Optimal Photometric Redshift Calibration Strategies for Cosmology Surveys" **[arxiv: 1509.03318]**

4. Steinhardt, C. L. & **Speagle, J. S.**, ApJ: "A Uniform History for Galaxy Evolution" **[arxiv: 1409.2883]**

3. Steinhardt, C. L.; **Speagle, J. S.** et al., ApJL: "Star Formation at $4 < z < 6$ from the Spitzer Large Area Survey with Hyper-Suprime-Cam (SPLASH)" **[arxiv: 1407.7030]** **[Press Release: JPL]**

2. **Speagle, J. S.** et al., ApJS: "A Highly Consistent Framework for the Evolution of the Star-Forming 'Main Sequence' from z~0-6" **[arxiv: 1405.2041]** **[~300 citations]**

1. **Speagle, J. S.**; Kaplan, D. L.; & van Kerkwijk, M. H., ApJ: "The X-ray Counterpart of the High-*B* Pulsar J0726-2612" **[arxiv: 1111.2877]**

SELECTED TALKS AND POSTERS

18. **Bayes Comp**, **Poster**, Mar. 2018: "Dynamic Nested Sampling with dynesty"
17. **Harvard**, **Talk** (Machine Learning Seminar), Mar. 2018: "An Overview of Machine Learning with Scikit-Learn"
16. **UMass Amherst**, **Talk** (Data Science Tea), Oct. 2017: "Big Data Inference: Combining Hierarchical Bayes and Machine Learning to Improve Photometric Redshifts"
15. **Harvard**, **Talk** (Topics in Astrostatistics), Sep. 2017: "An Introduction to Dynamic Nested Sampling"
14. **Harvard**, **Talk** (AstroStat Day), Sep. 2017: "Typical Sets: What They Are and How to (Hopefully) Find Them"
13. **Princeton**, **Talk** (HSC Group), Jan. 2017: "Big Data Inference: Combining Hierarchical Bayes and Machine Learning to Improve Photometric Redshifts for HSC"
12. **AAS 229**, **Poster**, Jan. 2017: "Improving Photometric Redshifts for Hyper Suprime-Cam (HSC) with Hierarchical Bayes and Machine Learning"
11. **COSMO21**, **Talk**, May 2016: "Improving Photometric Redshifts for Hyper Suprime-Cam"
10. **Kavli IPMU**, **Talk** (Lunch Seminar), Mar. 2016: "Mapping, Visualizing, and Exploiting the Color-Redshift Relation"
9. **Harvard**, **Talk** (Senior Thesis), Apr. 2015: "Mapping the Universe (at low resolution) with Photometric Redshifts"
8. **National Collegiate Research Conference**, **Poster**, Jan. 2015: "Mapping the Universe"
7. **AAS 225**, **Talk**, Jan. 2015: "Improving Photometric Redshift Accuracy and Computational Efficiency"
6. **AAS 223**, **Poster**, Jan. 2014: "Parallel Galaxy Main Sequence and Quasar Evolution from z=0-6"
5. **Harvard**, **Talk** (Junior Thesis), Dec. 2013: "'Main Sequence' Evolution from z~0-6"
4. **Tsukuba U.**, **Talk**, Aug. 2013: "The Evolution of Star-Forming Galaxies Over Cosmic Time"
3. **Kavli IPMU**, **Talk** (Lunch Seminar), Jul. 2013: "Gyrochronology and the Angular Momentum Evolution of Solar-like Stars"
2. **AAS 221**, **Poster**, Jan. 2013: "An In-Depth Analysis of the *Kepler* Low-Amplitude Blazhko RR Lyrae Stars"
1. **AAS 219**, **Poster**, Jan. 2012: "The X-ray Counterpart of the High-*B* Pulsar J0726-2612"