

Edward F. Schlafly
Curriculum Vitae
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ADDRESS: Lawrence Berkeley National Laboratory
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 Berkeley, CA 74720

PERSONAL: Born 17 October, 1984, US citizen

EDUCATION: Ph.D., Physics, Harvard University, 2012
 Dissertation: *Dust in Large Optical Surveys*, supervised by Doug Finkbeiner
 B.S., Physics, Stanford University, 2007

POSITIONS:

December 2015 – present
Hubble Fellow, Lawrence Berkeley National Laboratory

August 2012 – November 2015
Postdoctoral Researcher, Max Planck Institut für Astronomie
Supervisor: Hans-Walter Rix

August 2007 – July 2012
Ph.D. student, Physics, Harvard University
Advisor: Douglas P. Finkbeiner

RESEARCH INTERESTS:

- Interstellar dust, interstellar medium, bubbles
- Galactic structure, streams, dwarf galaxies
- Large surveys

AWARDS and FELLOWSHIPS:

- 2015 Hubble Fellowship
- 2011 Harvard Graduate School of Arts and Sciences Merit Fellowship
- 2008 Harvard Physics Purcell Fellowship
- 2007 Jeff Willick Memorial Award (astronomy), Stanford Physics
- 2007 Sterling Award for Scholastic Achievement, Stanford University
- 2007 Departmental Honors, Stanford Physics

RESEARCH ADVISED:

(graduate)

- 2012— Albert Lee (with D. P. Finkbeiner)
- 2013—2015 Nina Hernitschek (with H. W. Rix)
- 2010—2015 Gregory Green (with D. P. Finkbeiner)

(undergraduate)

- 2015 Iraj Eshghi
- 2014 Melih Ozcelik (with H. W. Rix)

TEACHING EXPERIENCE:

- 2017 Guest lecturer, Berkeley Physics 209 (graduate E&M)
- 2017 Guest lecturer, St. Louis Priory High School Computer Science
- 2009 Harvard Undergraduate Physics 15a (mechanics) lab teaching assistant
- 1999—2003 Aim High St. Louis Calligraphy Teacher (5 week summer school)

COLLABORATIONS:

- APOGEE Reddening Survey PI
- DECaPS (DECam Galactic Plane Survey) Co-I
- After Sloan-IV Dust Working Group Lead
- DECaLS (DECam Legacy Survey) Co-I
- DESI (Dark Energy Spectroscopic Instrument)
- SDSS-IV (Collaboration Council)
- MaNGA (Mapping Nearby Galaxies at APO)
- Pan-STARRS1

INVITED TALKS:

- “The DECam Plane Survey and the Extinction Curve.” MPIA, 2017.
- “Dust in the Milky Way in 3D.” Berkeley, colloquium, 2017.
- “Dust and the Extinction Curve in 3D.” Institut d’astrophysique spatiale, 2017.
- “Mapping the Galaxy’s Dust in 3D.” University of Kentucky, 2016.
- “The Photometric Calibration of PS1.” European Space Astronomy Center, 2016.
- “The Optical-Infrared Extinction Curve and its Variation.” Stanford, 2016.
- “Dust Extinction and its Distribution in the Galaxy.” Mayacamas Ranch, review, 2016.
- “The Optical-Infrared Extinction Curve and its Variation.” STScI, colloquium, 2016.
- “The Optical-Infrared Extinction Curve and its Variation.” UW, colloquium, 2016.
- “Mapping the Galaxy’s Dust in 3D: Results and Prospects” Hawaii, colloquium, 2016.
- “The Optical-Infrared Extinction Curve.” Strasbourg, colloquium, 2015.
- “Mapping Dust in 3D with Photometry.” *EWASS*, review, 2015.
- “3D dust mapping reveals that Orion forms part of a large ring of dust.” Vienna, 2015.

- “The Milky Way’s Dust in Three Dimensions.” MPIA, colloquium, 2015.
- “Dust with Gaia.” Ringberg, review, 2014.
- “Mapping the Galaxy’s Dust in 3D with PS1.” Strasbourg, colloquium, 2013.
- “PS1 and BigBOSS.” Institut Henri Poincaré, 2012.
- “Photometric Calibration of the First 1.5 Years of the PS1 Survey.” LBL, 2012.
- “Reconstructing the 3D Distribution of Dust and Stars with PS1.” Leiden, 2011.

FIRST AUTHOR PUBLICATIONS:

1. *The DECam Plane Survey: Optical photometry of two billion objects in the southern Galactic plane.* **E. F. Schlafly**, G. M. Green, D. Lang, et al., 2017, submitted.
2. *Mapping the Extinction Curve in 3D: Structure on Kiloparsec Scales.* **E. F. Schlafly**, J. E. G. Peek, D. P. Finkbeiner, G. M. Green, 2017, ApJ, 838, 36.
3. *The Optical-Infrared Extinction Curve and its Variation in the Milky Way.* **E. F. Schlafly**, A. M. Meisner, A. M. Stutz, et al., 2016, ApJ, 821, 78. **20 citations**
4. *Three-dimensional Dust Mapping Reveals that Orion Forms Part of a Large Ring of Dust.* **E. F. Schlafly**, G. Green, D. P. Finkbeiner, et al., 2015, ApJ, 799, 116.
5. *A Map of Dust Reddening to 4.5 kpc from Pan-STARRS1.* **E. F. Schlafly**, G. Green, D. P. Finkbeiner, et al., 2014, ApJ, 789, 15. **45 citations**
6. *A Large Catalog of Accurate Distances to Molecular Clouds from PS1 Photometry.* **E. F. Schlafly**, G. Green, D. P. Finkbeiner, et al., 2014, ApJ, 786, 29. **69 citations**
7. *Photometric Calibration of the First 1.5 Years of the Pan-STARRS1 Survey.* **E. F. Schlafly**, D. P. Finkbeiner, M. Juric, et al, 2012, ApJ, 756, 158. **168 citations**
8. *Measuring Reddening with SDSS Stellar Spectra and Recalibrating SFD.* **E. F. Schlafly**, D. P. Finkbeiner, 2011, ApJ, 737, 103. **1761 citations**
9. *The Blue Tip of the Stellar Locus: Measuring Reddening with the SDSS.* **E. F. Schlafly**, D. P. Finkbeiner, D. J. Schlegel, et al., 2010, ApJ, 725, 1175. **83 citations**

2nd OR 3rd AUTHOR PUBLICATIONS:

10. *A Synoptic Map of Halo Substructures from the Pan-STARRS1 3π Survey.* E. J. Bernard, A. M. N. Ferguson, **E. F. Schlafly**, et al., 2016, MNRAS, 463, 1759.
11. *Pan-STARRS Photometric and Astrometric Calibration.* E. A. Magnier, **E. F. Schlafly**, D. P. Finkbeiner, et al.. 2016, arXiv, 1612, 5242.
12. *The stellar population structure of the Galactic disk.* J. Bovy, H.-W. Rix, **E. F. Schlafly**, et al., 2016, ApJ, 823, 30. **35 citations**

13. *Hypercalibration: A Pan-STARRS1-based Recalibration of the Sloan Digital Sky Survey Photometry*. D. P. Finkbeiner, **E. F. Schlafly**, D. J. Schlegel, et al., 2016, ApJ, 823, 30. **25 citations**
14. *Finding, Characterizing, and Classifying Variable Sources in Multi-epoch Sky Surveys: QSOs and RR Lyrae in PS1 3 data*. N. Hernitschek, **E. F. Schlafly**, B. Sesar, et al., 2016, 817, 73.
15. *A Three-dimensional Map of Milky Way Dust*. G. M. Green, **E. F. Schlafly**, D. P. Finkbeiner, et al., 2015, ApJ, 810, 25. **124 citations**
16. *Serendipitous discovery of a thin stellar stream near the Galactic bulge in the Pan-STARRS1 3pi Survey*. E. J. Bernard, A. M. N. Ferguson, **E. F. Schlafly**, et al., 2014, MNRAS, 443, 84. **24 citations**
17. *Galactic globular and open cluster fiducial sequences in the Pan-STARRS1 photometric system*. E. J. Bernard, A. M. N. Ferguson, **E. F. Schlafly**, et al., 2014, MNRAS, 442, 2999.
18. *The Complex Structure of Stars in the Outer Galactic Disk as Revealed by Pan-STARRS1*. C. T. Slater, E. Bell, **E. F. Schlafly**, et al., 2014, ApJ, 791, 9. **23 citations**
19. *Measuring Distances and Reddenings for a Billion Stars: Toward a 3D Dust Map from Pan-STARRS 1*. G. Green, **E. F. Schlafly**, D. P. Finkbeiner, et al., 2014, ApJ, 783, 114. **43 citations**
20. *Perseus I: A Distant Satellite Dwarf Galaxy of Andromeda*. N. F. Martin, **E. F. Schlafly**, C. T. Slater, et al., 2013, ApJL, 779, 10. **27 citations**
21. *Lacerta I and Cassiopeia III. Two Luminous and Distant Andromeda Satellite Dwarf Galaxies Found in the 3pi Pan-STARRS1 Survey*. N. F. Martin, C. T. Slater, **E. F. Schlafly**, et al., 2013, ApJ, 772, 15. **50 citations**
22. *The Pan-STARRS 1 Photometric Reference Ladder, Release 12.01*. E. A. Magnier, **E. F. Schlafly**, D. P. Finkbeiner, et al., 2013, ApJS, 205, 20. **128 citations**
23. *A Pan-STARRS1 View of the Bifurcated Sagittarius Stream*. C. T. Slater, E. F. Bell, **E. F. Schlafly**, et al., 2013, ApJ, 762, 6. **27 citations**

OTHER PUBLICATIONS:

24. *Sloan Digital Sky Survey IV: Mapping the Milky Way, Nearby Galaxies, and the Distant Universe*. M. Blanton et al. [362 coauthors including **E. F. Schlafly**]. 2017, AJ, 154, 28.

25. *Machine-learned Identification of RR Lyrae Stars from Sparse, Multi-band Data: The PS1 Sample.* B. Sesar et al. [18 coauthors including **E. F. Schlafly**]. 2017, AJ, 153, 204.
26. *Searching for Planet Nine with Coadded WISE and NEOWISE-Reactivation Images.* A. M. Meisner et al. [6 coauthors including **E. F. Schlafly**], 2017, AJ, 153, 65.
27. *The Pan-STARRS1 Distance $z > 5.6$ Quasar Survey: More than 100 Quasars within the First Gyr of the Universe.* E. Bañados et al. [35 coauthors including **E. F. Schlafly**]. 2016, ApJS, 227, 11.
28. *Mapping the Monoceros Ring in 3D with Pan-STARRS1.* E. Morganson et al. [19 coauthors including **E. F. Schlafly**], 2016, ApJ, 825, 140.
29. *The Time-Domain Spectroscopic Survey: Understanding the Optically Variable Sky with SEQUELS in SDSS-III.* J. J. Ruan et al. [30 coauthors including **E. F. Schlafly**], 2016, ApJ, 825, 137.
30. *Low Surface Brightness Imaging of the Magellanic System: Imprints of Tidal Interactions between the Clouds in the Stellar Periphery.* G. Besla et al. [8 coauthors including **E. F. Schlafly**], 2016, ApJ, 825, 20.
31. *On Galactic Density Modeling in the Presence of Dust Extinction.* J. Bovy et al. [5 coauthors including **E. F. Schlafly**], 2016, ApJ, 818, 130.
32. *Supercal: Cross-calibration of Multiple Photometric Systems to Improve Cosmological Measurements with Type Ia Supernovae.* D. Scolnic et al. [19 coauthors including **E. F. Schlafly**], 2015, ApJ, 815, 117.
33. *Sagittarius II, Draco II and Laevens 3: Three New Milky Way Satellites Discovered in the Pan-STARRS 1 3π Survey.* B. P. M. Laevens et al. [21 coauthors including **E. F. Schlafly**], 2015, ApJ, 813, 44.
34. *The Nature and Orbit of the Ophiuchus Stream.* B. Sesar et al. [22 coauthors including **E. F. Schlafly**], 2015, ApJ, 809, 59.
35. *The Time Domain Spectroscopic Survey: Variable Selection and Anticipated Results.* E. Morganson et al. [39 coauthors including **E. F. Schlafly**], 2015, ApJ, 806, 244.
36. *Constraining the Radio-loud Fraction of Quasars at $z > 5.5$.* E. Bañados et al. [20 coauthors including **E. F. Schlafly**], 2015, ApJ, 804, 118.
37. *A nearby M star with Three Transiting Super-Earths Discovered by K2.* I. Crossfield et al. [26 coauthors including **E. F. Schlafly**], 2015, ApJ, 804, 10.
38. *A New Faint Milky Way Satellite Discovered in the Pan-STARRS1 3π Survey.* B. P. M. Laevens et al. [23 coauthors including **E. F. Schlafly**], 2015, ApJ, 802, 18.

39. *The Identification of Z-dropouts in Pan-STARRS1: Three Quasars at $6.5 < z < 6.7$.* B. P. Venemans et al. [32 coauthors including **E. F. Schlafly**], 2015, ApJ, 801, 11.
40. *Systematic Uncertainties Associated with the Cosmological Analysis of the First Pan-STARRS1 Type Ia Supernova Sample.* D. Scolnic et al. [48 coauthors including **E. F. Schlafly**], 2014, ApJ, 795, 45.
41. *Cosmological Constraints from Measurements of Type Ia Supernovae Discovered during the First 1.5 yr of the Pan-STARRS1 Survey.* A. Rest et al. [48 coauthors including **E. F. Schlafly**], 2014, ApJ, 795, 44.
42. *A New Distant Milky Way Globular Cluster in the Pan-STARRS1 3pi Survey.* B. P. M. Laevens et al. [22 coauthors including **E. F. Schlafly**], 2014, ApJ, 786, L3.
43. *Measuring Quasar Variability with Pan-STARRS1 and SDSS.* E. Morganson et al. [13 coauthors including **E. F. Schlafly**], 2014, ApJ, 784, 92.
44. *Towards a complete stellar mass function of the Hyades. I. Pan-STARRS1 optical observations of the low-mass stellar content.* B. Goldman et al. [17 coauthors including **E. F. Schlafly**], 2013, A&A, 559, 43.
45. *Clustering of Sloan Digital Sky Survey III Photometric Luminous Galaxies: The Measurement, Systematics, and Cosmological Implications.* S. Ho et al. [39 coauthors including **E. F. Schlafly**], 2012, ApJ, 761, 14.
46. *The Milky Way Tomography with Sloan Digital Sky Survey. IV. Dissecting Dust.* M. Berry et al. [30 coauthors including **E. F. Schlafly**], 2012, ApJ, 757, 166.
47. *Ameliorating systematic uncertainties in the angular clustering of galaxies: a study using the SDSS-III.* A. J. Ross, et al. [31 coauthors including **E. F. Schlafly**], 2011, MNRAS, 417, 1350.
48. *CGRaBS: An All-Sky Survey of Blazar Candidates.* S. E. Healey et al. [10 coauthors including **E. F. Schlafly**], 2008, ApJS, 175, 97.