

Edward F. Schlafly  
Curriculum Vitae October 2018  
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**ADDRESS:**        Lawrence Berkeley National Laboratory  
                         1 Cyclotron Rd MS 50R-5008  
                         Berkeley, CA 94720

**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

**TELESCOPE TIME:**

• DECam Plane Survey	22 nights	Blanco 4m	Co-PI
• DECam Plane Survey 2	17+ nights	Blanco 4m	Co-PI
• APOGEE Reddening Survey	ancillary survey	Sloan 2.5m	PI
• California Molecular Cloud Survey	ancillary survey	Sloan 2.5m	Co-PI
• SDSS-V Interstellar Medium Survey	survey	Sloan & DuPont	group lead
• DECam Legacy Survey	> 200 nights	Blanco 4m	Co-I

**RESEARCH ADVISED:**

(graduate)

2018— Jacqueline Beechert (with D. J. Schlegel)

2016— Catherine Zucker (with D. P. Finkbeiner)

2012—2017 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&amp;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
- DECam Galactic Plane Survey Co-PI
- SDSS-V Dust Working Group Lead
- DECam Legacy Survey founding Co-I
- Dark Energy Spectroscopic Instrument (DESI)
- SDSS-IV (Collaboration Council)
- Mapping Nearby Galaxies at APO (MaNGA)
- Pan-STARRS1

**INVITED TALKS:**

- “The DECam Plane Survey.” Lawrence Livermore National Laboratory, 2018.
- “DECaLS & DECaPS: Surveys in and out of the Galaxy.” University of Chicago, 2018.

- “Mapping the Milky Way’s Dust in 3D.” Washington University, public lecture, 2018.
- “The Milky Way’s Dust in 3D.” Caltech, 2018.
- “The DECam Plane Survey.” University of Washington, 2018.
- “The Milky Way’s Dust in 3D.” University of Pennsylvania, colloquium, 2018.
- “The Milky Way’s Dust in 3D.” Flatiron Institute, colloquium, 2018.
- “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.” University of Washington, 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., 2018, ApJ, 234, 39.
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. **46 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. **62 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. **98 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. **201 citations**
8. *Measuring Reddening with SDSS Stellar Spectra and Recalibrating SFD.* **E. F. Schlafly**, D. P. Finkbeiner, 2011, ApJ, 737, 103. **2359 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. **89 citations**

## 2nd OR 3rd AUTHOR PUBLICATIONS:

10. *Three-dimensional dust mapping in the Orion Complex, combining Gaia-TGAS, 2MASS, and WISE.* S. Rezaei Kh., C. A. L. Bailer-Jones, **E. F. Schlafly**, et al., 2018, A&A, 616, 44.
11. *Galactic reddening in 3D from stellar photometry - an improved map.* G. M. Green, **E. F. Schlafly**, et al., 2018, MNRAS, 478, 651. **32 citations**
12. *A Color-locus Method for Mapping  $R_V$  Using Ensembles of Stars.* A. Lee, G. M. Green, **E. F. Schlafly**, et al., 2018, ApJ, 854, 79.
13. *A Synoptic Map of Halo Substructures from the Pan-STARRS1  $3\pi$  Survey.* E. J. Bernard, A. M. N. Ferguson, **E. F. Schlafly**, et al., 2016, MNRAS, 463, 1759. **40 citations**
14. *Pan-STARRS Photometric and Astrometric Calibration.* E. A. Magnier, **E. F. Schlafly**, D. P. Finkbeiner, et al.. 2016, arXiv, 1612, 5242. **52 citations**
15. *The stellar population structure of the Galactic disk.* J. Bovy, H.-W. Rix, **E. F. Schlafly**, et al., 2016, ApJ, 823, 30. **74 citations**
16. *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. **36 citations**
17. *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. **30 citations**
18. *A Three-dimensional Map of Milky Way Dust.* G. M. Green, **E. F. Schlafly**, D. P. Finkbeiner, et al., 2015, ApJ, 810, 25. **231 citations**
19. *Serendipitous discovery of a thin stellar stream near the Galactic bulge in the Pan-STARRS1  $3\pi$  Survey.* E. J. Bernard, A. M. N. Ferguson, **E. F. Schlafly**, et al., 2014,

MNRAS, 443, 84. **32 citations**

20. *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.
21. *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. **41 citations**
22. *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. **58 citations**
23. *Perseus I: A Distant Satellite Dwarf Galaxy of Andromeda.* N. F. Martin, **E. F. Schlafly**, C. T. Slater, et al., 2013, ApJL, 779, 10. **29 citations**
24. *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. **56 citations**
25. *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. **166 citations**
26. *A Pan-STARRS1 View of the Bifurcated Sagittarius Stream.* C. T. Slater, E. F. Bell, **E. F. Schlafly**, et al., 2013, ApJ, 762, 6. **33 citations**

#### OTHER PUBLICATIONS:

24. *Charge Diffusion Variations in Pan-STARRS1 CCDs.* E. A. Magnier et al. [12 coauthors including **E. F. Schlafly**]. 2018, PASP, 130, 998, 065002.
25. *The APOGEE-2 Survey of the Orion Star-forming Complex. I. Target Selection and Validation with Early Observations.* J. Cottle et al. [28 coauthors including **E. F. Schlafly**]. 2018, ApJS, 236, 27.
26. *The Complete Light-curve Sample of Spectroscopically Confirmed SNe Ia from Pan-STARRS1 and Cosmological Constraints from the Combined Pantheon Sample.* D. M. Scolnic et al. [39 coauthors including **E. F. Schlafly**]. 2018, ApJ, 859, 101.
27. *The Fourteenth Data Release of the Sloan Digital Sky Survey: First Spectroscopic Data from the Extended Baryon Oscillation Spectroscopic Survey and from the Second Phase of the Apache Point Observatory Galactic Evolution Experiment.* B. Abolfathi et al. [347 coauthors including **E. F. Schlafly**]. 2018, ApJS, 235, 42.
28. *UKIRT-2017-BLG-001Lb: A Giant Planet Detected through the Dust.* Y. Shvartzvald

- et al. [10 coauthors including **E. F. Schlafly**]. 2018, ApJ, 857, 8.
29. *The Optical/Near-infrared Extinction Law in Highly Reddened Regions*. M. Hosek et al. [8 coauthors including **E. F. Schlafly**]. 2018, ApJ, 855, 13.
  30. *The 13th Data Release of the Sloan Digital Sky Survey: First Spectroscopic Data from the SDSS-IV Survey Mapping Nearby Galaxies at Apache Point Observatory*. F. Albareti et al. [343 coauthors including **E. F. Schlafly**]. 2017, ApJS, 233, 25.
  31. *Physical Properties of 15 Quasars at  $z \geq 6.5$* . C. Mazzucchelli et al. [23 coauthors including **E. F. Schlafly**]. 2017, ApJ, 849, 91.
  32. *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.
  33. *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.
  34. *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.
  35. *The Pan-STARRS1 Distant  $z > 5.6$  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.
  36. *Mapping the Monoceros Ring in 3D with Pan-STARRS1*. E. Morganson et al. [19 coauthors including **E. F. Schlafly**], 2016, ApJ, 825, 140.
  37. *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.
  38. *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.
  39. *On Galactic Density Modeling in the Presence of Dust Extinction*. J. Bovy et al. [5 coauthors including **E. F. Schlafly**], 2016, ApJ, 818, 130.
  40. *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.
  41. *Sagittarius II, Draco II and Laevens 3: Three New Milky Way Satellites Discovered in the Pan-STARRS 1  $3\pi$  Survey*. B. P. M. Laevens et al. [21 coauthors including **E. F.**

- Schlafly**], 2015, ApJ, 813, 44.
42. *The Nature and Orbit of the Ophiuchus Stream*. B. Sesar et al. [22 coauthors including **E. F. Schlafly**], 2015, ApJ, 809, 59.
  43. *The Time Domain Spectroscopic Survey: Variable Selection and Anticipated Results*. E. Morganson et al. [39 coauthors including **E. F. Schlafly**], 2015, ApJ, 806, 244.
  44. *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.
  45. *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.
  46. *A New Faint Milky Way Satellite Discovered in the Pan-STARRS1  $3\pi$  Survey*. B. P. M. Laevens et al. [23 coauthors including **E. F. Schlafly**], 2015, ApJ, 802, 18.
  47. *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.
  48. *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.
  49. *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.
  50. *A New Distant Milky Way Globular Cluster in the Pan-STARRS1  $3\pi$  Survey*. B. P. M. Laevens et al. [22 coauthors including **E. F. Schlafly**], 2014, ApJ, 786, L3.
  51. *Measuring Quasar Variability with Pan-STARRS1 and SDSS*. E. Morganson et al. [13 coauthors including **E. F. Schlafly**], 2014, ApJ, 784, 92.
  52. *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.
  53. *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.
  54. *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.
  55. *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.

56. *CGRaBS: An All-Sky Survey of Blazar Candidates*. S. E. Healey et al. [10 coauthors including **E. F. Schlafly**], 2008, ApJS, 175, 97.