

## Dawn K. Erb

Harvard-Smithsonian Center for Astrophysics  
60 Garden St, MS 20  
Cambridge, MA 02138

derb@cfa.harvard.edu  
Tel: (617) 496-1809  
Fax: (617) 495-7467

---

### Employment

CfA Fellow, Harvard-Smithsonian Center for Astrophysics, 2005–

### Education

Ph.D. Astrophysics, California Institute of Technology, 2005

*Thesis Title:*

“The Properties of Star-Forming Galaxies at  $z \sim 2$ :  
Kinematics, Stellar Populations, and Metallicities”

*Research Advisor:* Professor Charles C. Steidel

B.S. Physics, Summa Cum Laude, University of Washington, 2000

B.S. Astronomy, Summa Cum Laude, University of Washington, 2000

### Research Interests

Galaxy formation and evolution

Kinematics, chemical evolution and stellar populations of galaxies at high redshift

Feedback processes in starburst galaxies

Evolution of the intergalactic medium at high redshift

### Awards and Honors

Holloway Fellowship, Caltech, 2001

Baer Prize in Astronomy, University of Washington, 2000

Higgs-Osborn Prize in Experimental Physics, University of Washington, 2000

### Teaching Experience

Teaching Assistant, Graduate Cosmology, Caltech, 2002

Teaching Assistant, Astronomical Instrumentation, Caltech, 2001–2002

Teaching Assistant, Introduction to Astronomy, University of Washington, 2000

Teaching Assistant, The Solar System, University of Washington, 2000

### Service

NSF proposal review panel, 2007

*Hubble Space Telescope* proposal review panel, 2006

### Professional Affiliations

Member, American Astronomical Society, 2000–

**Refereed Publications**

1. “A Model for Star Formation, Gas Flows and Chemical Evolution in Galaxies at High Redshifts” **D. K. Erb**. 2007, *The Astrophysical Journal*, in press, arXiv:0710.4146
2. “Integral Field Spectroscopy of High-Redshift Star Forming Galaxies with Laser Guided Adaptive Optics: Evidence for Dispersion-Dominated Kinematics” D. R. Law, C. C. Steidel, **D. K. Erb**, J. E. Larkin, M. Pettini, A. E. Shapley, S. A. Wright. 2007, *The Astrophysical Journal*, in press, arXiv:0707.3634
3. “The Sightline to Q2343-BX415: Clues to Galaxy Formation in a Quasar Environment” S. A. Rix, M. Pettini, C. C. Steidel, N. A. Reddy, K. L. Adelberger, **D. K. Erb**, A. E. Shapley. 2007, *The Astrophysical Journal*, in press, arXiv:0708.0007
4. “Multi-Wavelength Constraints on the Cosmic Star Formation History from Spectroscopy: the Rest-Frame UV, H-alpha, and Infrared Luminosity Functions at Redshifts  $1.9 < z < 3.4$ ” N. A. Reddy, C. C. Steidel, M. Pettini, K. L. Adelberger, A. E. Shapley, **D. K. Erb**, M. Dickinson. 2007, *The Astrophysical Journal*, in press, arXiv:0706.4091
5. “Morphologies of Galaxies in and around a Protocluster at  $z = 2.300$ ” A. H. G. Peter, A. E. Shapley, D. R. Law, C. C. Steidel, **D. K. Erb**, N. A. Reddy, M. Pettini. 2007, *The Astrophysical Journal*, 668, 23
6. “Dynamical Properties of  $z \sim 2$  Star Forming Galaxies and a Universal Star Formation Relation” N. Bouche, G. Cresci, R. Davies, F. Eisenhauer, N. M. Forster Schreiber, R. Genzel, S. Gillessen, M. Lehnert, D. Lutz, N. Nesvadba, K. L. Shapiro, A. Sternberg, L. J. Tacconi, A. Verma, A. Cimatti, E. Daddi, A. Renzini, **D. K. Erb**, A. Shapley, C. C. Steidel. 2007, *The Astrophysical Journal*, in press, arXiv:0706.2656
7. “Lost and Found: A New Position and Infrared Counterpart for the X-Ray Binary Scutum X-1” D. L. Kaplan, A. M. Levine, D. Chakrabarty, E. H. Morgan, **D. K. Erb**, B. M. Gaensler, D.-S. Moon, P. B. Cameron. 2007, *The Astrophysical Journal*, 661, 437
8. “Integral Field Spectroscopy of a Candidate Disk Galaxy at  $z \sim 1.5$  using Laser Guide Star Adaptive Optics” S. A. Wright, J. E. Larkin, M. Barczys, **D. K. Erb**, C. Iserlohe, A. Krabbe, D. R. Law, M. W. McElwain, A. Quirrenbach, C. C. Steidel, J. Weiss. 2007, *The Astrophysical Journal*, 658, 78
9. “The Physical Nature of Rest-UV Galaxy Morphology During the Peak Epoch of Galaxy Formation” D. R. Law, C. C. Steidel, **D. K. Erb**, M. Pettini, N. A. Reddy, A. E. Shapley, K. L. Adelberger, D. J. Simenc. 2007, *The Astrophysical Journal*, 656, 1
10. “A Spectroscopic Survey of Redshift  $1.4 < z < 3.0$  Galaxies in the Goods-North Field: Survey Description, Catalogs, and Properties” N. A. Reddy, C. C. Steidel, **D. K. Erb**, A. E. Shapley, M. Pettini. 2006, *The Astrophysical Journal*, 653, 1004
11. “The Direct Detection of Lyman-Continuum Emission from Star-forming Galaxies at  $z \sim 3$ ” A. E. Shapley, C. C. Steidel, M. Pettini, K. L. Adelberger, **D. K. Erb**. 2006, *The Astrophysical Journal*, 651, 688

12. “The Stellar, Gas and Dynamical Masses of Star-Forming Galaxies at  $z \sim 2$ ” **D. K. Erb**, C. C. Steidel, A. E. Shapley, M. Pettini, N. A. Reddy, K. L. Adelberger. 2006, *The Astrophysical Journal*, 647, 128
13. “H $\alpha$  Observations of a Large Sample of Galaxies at  $z \sim 2$ : Implications for Star Formation in High Redshift Galaxies” **D. K. Erb**, C. C. Steidel, A. E. Shapley, M. Pettini, N. A. Reddy, K. L. Adelberger. 2006, *The Astrophysical Journal*, 644, 813
14. “The Mass-Metallicity Relation at  $z \gtrsim 2$ ” **D. K. Erb**, A. E. Shapley, M. Pettini, C. C. Steidel, N. A. Reddy, K. L. Adelberger. 2006, *The Astrophysical Journal*, 644, 813
15. “SINFONI Integral Field Spectroscopy of  $z \sim 2$  UV-selected Galaxies: Rotation Curves and Dynamical Evolution” N. M. Förster Schreiber, R. Genzel, M.D. Lehnert, N. Bouché, A. Verma, **D. K. Erb**, A. E. Shapley et al. 2006, *The Astrophysical Journal*, 645, 1062
16. “Star Formation and Extinction in Redshift  $z \sim 2$  Galaxies: Inferences from *Spitzer* MIPS Observations” N. A. Reddy, C. C. Steidel, D. Fadda, L. Yan, M. Pettini, A. E. Shapley, **D. K. Erb**, K. L. Adelberger. 2006, *The Astrophysical Journal*, 644, 792
17. “Predictions and Strategies for Integral-Field Spectroscopy of High-Redshift Galaxies” D. R. Law, C. C. Steidel, **D. K. Erb**. 2006, *The Astronomical Journal*, 131, 70
18. “A Census of Optical and Near-Infrared Selected Star-forming and Passively Evolving Galaxies at Redshift  $z \sim 2$ ” N. A. Reddy, **D. K. Erb**, C. C. Steidel, A. E. Shapley, K. L. Adelberger, M. Pettini. 2005, *The Astrophysical Journal*, 633, 748
19. “The Connection between Galaxies and Intergalactic Absorption Lines at Redshift  $2 \lesssim z \lesssim 3$ ” K. L. Adelberger, A. E. Shapley, C. C. Steidel, M. Pettini, **D. K. Erb**, N. A. Reddy. 2005, *The Astrophysical Journal*, 629, 636
20. “Ultraviolet to Mid-Infrared Observations of Star-Forming Galaxies at  $z \sim 2$ : Stellar Masses and Stellar Populations” A. E. Shapley, C. C. Steidel, **D. K. Erb**, N. A. Reddy, M. Pettini, K. L. Adelberger, P. Barmby, J. Huang. 2005, *The Astrophysical Journal*, 626, 698
21. “Spectroscopic Identification of a Protocluster at  $z = 2.300$ : Environmental Dependence of Galaxy Properties at High Redshift” C. C. Steidel, K. L. Adelberger, A. E. Shapley, **D. K. Erb**, N. A. Reddy, M. Pettini. 2005, *The Astrophysical Journal*, 626, 44
22. “Strong Spatial Clustering of UV-Selected Galaxies with Magnitude  $K_s < 20.5$  and Redshift  $z \sim 2$ ” K. L. Adelberger, **D. K. Erb**, C. C. Steidel, A. E. Shapley, M. Pettini, N. A. Reddy. 2005, *The Astrophysical Journal*, 620, 75
23. “The Spatial Clustering of Star-Forming Galaxies at Redshifts  $1.4 \lesssim z \lesssim 3.5$ ” K. L. Adelberger, C. C. Steidel, M. Pettini, A. E. Shapley, N. A. Reddy, **D. K. Erb**. 2005, *The Astrophysical Journal*, 619, 697
24. “Deep Mid-Infrared Observations of Lyman Break Galaxies” P. Barmby, J.-S. Huang, G. G. Fazio, J. A. Surace, R. G. Arendt, J. L. Hora, M. A. Pahre, K. L. Adelberger, P. Eisenhardt, **D. K. Erb**, M. Pettini, W. T. Reach, N. A. Reddy, A. E. Shapley, C. C. Steidel, D. Stern, Z. Wang, S. P. Willner. 2004, *The Astrophysical Journal Supplement* 154, 97

25. “The Kinematics of Morphologically Selected  $z \sim 2$  Galaxies in the GOODS-North Field” **D. K. Erb**, C. C. Steidel, A. E. Shapley, M. Pettini, K. L. Adelberger. 2004, *The Astrophysical Journal*, 612, 122
26. “Evidence for Solar Metallicities in Massive Star-forming Galaxies at  $z \gtrsim 2$ ” A. E. Shapley, **D. K. Erb**, M. Pettini, C. C. Steidel, K. L. Adelberger. 2004, *The Astrophysical Journal*, 612, 108
27. “Optical Selection of Star-forming Galaxies at Redshifts  $1 < z < 3$ ” K. L. Adelberger, C. C. Steidel, A. E. Shapley, M. P. Hunt, **D. K. Erb**, N. A. Reddy, M. Pettini. 2004, *The Astrophysical Journal*, 607, 226
28. “A Survey of Star-forming Galaxies in the  $1.4 \lesssim z \lesssim 2.5$  Redshift Desert: Overview” C. C. Steidel, A. E. Shapley, M. Pettini, K. L. Adelberger, **D. K. Erb**, N. A. Reddy, M. P. Hunt. 2004, *The Astrophysical Journal*, 604, 534.
29. “H $\alpha$  Spectroscopy of Galaxies at  $z > 2$ : Kinematics and Star Formation” **D. K. Erb**, A. E. Shapley, C. C. Steidel, M. Pettini, K. L. Adelberger, M. P. Hunt, A. F. M. Moorwood, J.-G. Cuby. 2003, *The Astrophysical Journal*, 591, 101
30. “X-Ray/Optical Studies of Two Outbursts of the Intermediate Polar YY (DO) Draconis” P. Szkody, K. Nishikida, **D. K. Erb**, K. Mukai, C. Hellier, M. Uemura, T. Kato, E. Pavlenko, N. Katysheva, S. Shugarov, L. Cook. 2002, *The Astronomical Journal*, 123, 413
31. “The Intriguing New Cataclysmic Variable KUV 03580+0614” P. Szkody, B. Gänsicke, R. E. Fried, U. Heber, **D. K. Erb**. 2001, *Publications of the Astronomical Society of the Pacific*, 113, 1215.