

# David W. Hogg

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Center for Cosmology and Particle Physics  
Department of Physics  
New York University  
4 Washington Place #424  
New York, NY 10003 USA

<http://cosmo.nyu.edu/hogg/>  
david.hogg@nyu.edu

## Education

PhD 1998, Department of Physics, California Institute of Technology.  
SB 1992, Massachusetts Institute of Technology.

## Positions

Associate Professor with tenure, Department of Physics, New York University,  
2007–present.  
Assistant Professor, Department of Physics, New York University, 2001–2007.  
Long-term member, Institute for Advanced Study, 1997–2001.

## Short-term positions

Visiting Professor, Max-Planck-Institut für Astronomie, Heidelberg, Germany, summers of  
2006, 2007, 2008, 2009.  
Visiting Professor, Department of Astronomy and Astrophysics, Columbia University,  
2008 February–May.  
Scholar in Residence, *Spitzer* Science Center, California Institute of Technology, 2006 May.  
Visiting Professor, Department of Physics, Massachusetts Institute of Technology,  
2005 January–August.  
Lecturer (part-time), Department of Physics, Princeton University, 1998–2001.

## Service

*Spitzer* Science Center Oversight Committee, 2008–present.  
*NASA Extragalactic Database* Users Committee, 2006–present.  
Panel Chair, *Spitzer Space Telescope* Time Allocation Committee, 2005.  
Leader, *Sloan Digital Sky Survey* Calibration Task Force, 2000–2003.  
National Optical Astronomy Observatories Time Allocation Committee, 2000–2002.  
*Hubble Space Telescope* Time Allocation Committee, 1999.

## Honors

New York University “Golden Dozen” Teaching Award, 2004.  
Princeton University Engineering Council Teaching Award, 2000.  
Caltech Undergraduate Teaching Award, Associated Students of Caltech, 1996.  
J. S. Stemple Memorial Prize, Caltech, for Physics PhD oral candidacy exam, 1995.  
Phi Beta Kappa, 1992. Sigma Xi, 1992.  
Award of merit, International Physics Olympiad, Bad Ischl, Austria, 1988.

## Grants

- NSF Astronomy and Astrophysics Research Grant (AST-0908357; Hogg, PI), *Dynamical models from kinematic data: The Milky Way Disk and Halo*, 147,000 USD, 2009–2011.
- NASA Astrophysics Data Analysis Grant (NNX08AJ48G; Hogg, PI), *Multi-wavelength astrometric catalog built from NASA data*, 277,415 USD, 2008–2011.
- Amazon Web Services Research Grant (Koposov, PI) *Searching for tidal streams in the Milky Way Halo*, 40,000 CPU-hours (approx), 2009–2010.
- NASA Spitzer Space Telescope General Observer Grant (Spitzer programs 50568 and 50569; Schiminovich PI), *S5: Spitzer–SDSS Statistical Spectroscopic Survey*, 350,000 USD (approx), 2008–2010.
- Alexander von Humboldt Foundation Research Fellowship (Hogg, PI), *Cosmology with the proper motions of stars*, 25,000 EUR (approx), 2008–2010.
- Google Research Grant (Blanton, PI), *Beautiful and correct SDSS images for Google Sky*, 86,000 USD, 2008–2009.
- NASA Long-Term Space Astrophysics Grant (NAG5-11669; Hogg, PI), *Tools for Galaxy Astrophysics in the Era of the Space Infrared Telescope Facility*, 498,770 USD, 2002–2007.
- NSF Information Technology Research Grant (AST-0428465; Hogg, PI), *Automated Astrometry for Time-Domain and Distributed Astrophysics*, 504,140 USD, 2004–2007.
- NASA Spitzer Space Telescope General Observer Grant (Spitzer program 20120; Hogg PI), *A search for PAH emission in extremely low luminosity galaxies*, 59,243 USD, 2005–2007.
- NASA Galaxy Evolution Explorer Archival Research Grant (Blanton, PI), *K-corrections for GALEX*, 42,500 USD, 2004–2005.
- NASA Hubble Space Telescope Archival Research Grant (Blanton, PI), *Comparing the ACS Ultra Deep Field to Low Redshift Galaxy Observations*, 70,000 USD, 2003–2004.
- NSF Group Grant (PHY-0101738; Farrar, PI), *Theoretical Particle Physics, Astrophysics and Cosmology*, 686,000 USD (+16,000 USD in REU supplement), 2001–2004.
- Hubble Postdoctoral Fellowship, 1997–2000.
- NSF Graduate Fellowship, 1992–1995.

## PhD supervision

- Masjedi, M., 2007, *Massive galaxy merging and cosmogony*, PhD thesis, New York University.
- Lang, D., 2009, *Astrometry.net: Automatic recognition and calibration of astronomical images*, PhD thesis, University of Toronto (co-supervised by Roweis, S.)
- Wu, R., current PhD student, New York University
- Zolotov, A., current PhD student, New York University (co-supervised by Willman, B.)
- Bovy, J., current PhD student, New York University

## Publication highlights

30. Cohen, J. G., Hogg, D. W., Blandford, R., Cowie, L. L., Hu, E., Songaila, A., Shopbell, P., & Richberg, K., 2000, Caltech Faint Galaxy Redshift Survey. X. A redshift survey in the region of the Hubble Deep Field North, *Astrophys. J.* **538** 29–52 ([DOI:10.1086/309096](https://doi.org/10.1086/309096)). 260 citations. One of a series of papers (with more than 800 combined citations) about the first

highly complete spectroscopic survey with a 10-m-class telescope.

37. Hogg, D. W., Finkbeiner, D. P., Schlegel, D. J., & Gunn, J. E., 2001, A photometricity and extinction monitor at the Apache Point Observatory, *Astron. J.* **122** 2129–2138 (DOI:10.1086/323103).  
500 citations. This metrology helped the *Sloan Digital Sky Survey* achieve its remarkable precision.
51. Hogg, D. W. *et al*, 2004, The dependence on environment of the color–magnitude relation of galaxies, *Astrophys. J. Lett.* **601** L29–L32 (DOI:10.1086/381749).  
140 citations. One of a series of papers about the properties of galaxies as a function of environment.
52. Quintero, A. D., Hogg, D. W., *et al*, 2004, Selection and photometric properties of K+A galaxies, *Astrophys. J.* **602** 190–199 (DOI:10.1086/380601).  
50 citations. A new method is developed to find and analyze galaxies in transition from their star-forming phase to their quiescent phase.
64. Willman, B. *et al*, 2005, A new Milky Way dwarf galaxy in Ursa Major, *Astrophys. J. Lett.* **626** L85–L88 (DOI:10.1086/431760).  
150 citations. One of two discoveries that triggered a new wave of work on dwarf galaxies and cosmological substructure.
68. Eisenstein, D. J., Zehavi, I., Hogg, D. W., *et al*, 2005, Detection of the baryon acoustic peak in the large-scale correlation function of *Sloan Digital Sky Survey* Luminous Red Galaxies, *Astrophys. J.* **633** 560–574 (DOI:10.1086/466512).  
910 citations. This paper opened a new window for high-precision cosmological experiments.
72. Masjedi, M., Hogg, D. W., *et al*, 2006, Very small-scale clustering and merger rate of luminous red galaxies, *Astrophys. J.* **644** 54–60 (DOI:10.1086/503536).  
70 citations. The first measurement of the galaxy auto-correlation function at ten-kpc scales and a conservative method for constraining the rate of galaxy–galaxy mergers.

**Refereed publications**

1. Hogg, D. W., Quinlan, G. D., & Tremaine, S., 1991, Dynamical limits on dark matter in the Solar System, *Astron. J.* **101** 2274–2286 (DOI:10.1086/115849).
2. Hogg, D. W., Jackson, C., Żytkow, A. N., Irwin, M., Webster, R., & Tremaine, S., 1994, A photographic search for satellites of Neptune, *Icarus* **107** 304–310 (DOI:10.1006/icar.1994.1025).
3. Hogg, D. W. & Blandford, R. D., 1994, The gravitational lens system B1422+231: Dark matter, superluminal expansion and the Hubble Constant, *Mon. Not. R. Astr. Soc.* **268** 889–893 (ADS:1994MNRAS.268..889H).
4. Djorgovski, S. *et al*, 1995, Deep galaxy counts in the *K* band with the Keck Telescope, *Astrophys. J. Lett.* **438** L13–L16 (DOI:10.1086/187703).
5. Smail, I., Hogg, D. W., Yan, L., & Cohen, J. G., 1995, Deep optical galaxy counts with the Keck Telescope, *Astrophys. J. Lett.* **449** L105–L108 (DOI:10.1086/309647).
6. Smail, I., Hogg, D. W., Blandford, R., Cohen, J. G., Edge, A. C., & Djorgovski, S. G., 1995, Discovery of two giant arcs in the rich cluster A2219 with the Keck Telescope, *Mon. Not. R. Astr. Soc.* **277** 1–10 (ADS:1995MNRAS.277....1S).
7. Eisenhardt, P. R., Armus, L., Hogg, D. W., Soifer, B. T., Neugebauer, G., & Werner, M. W., 1996, *Hubble Space Telescope* observations of the luminous IRAS source FSC10214+4724: A gravitationally lensed infrared quasar, *Astrophys. J.* **461** 72–83 (DOI:10.1086/177038).
8. Cohen, J. G., Hogg, D. W., Pahre, M. A., & Blandford, R., 1996, Strong redshift clustering of distant galaxies, *Astrophys. J. Lett.* **462** L9–L12 (DOI:10.1086/310020).
9. Hogg, D. W., Blandford, R., Kundić, T., Fassnacht, C. D., & Malhotra, S., 1996, A candidate gravitational lens in the Hubble Deep Field, *Astrophys. J. Lett.* **467** L73–L75 (DOI:10.1086/310213).
10. Cohen, J. G., Cowie, L. L., Hogg, D. W., Songaila, A., Blandford, R., Hu, E. M., & Shopbell, P., 1996, Redshift clustering in the Hubble Deep Field, *Astrophys. J. Lett.* **471** L5–L9 (DOI:10.1086/310330).
11. Hogg, D. W., Neugebauer, G., Armus, L., Matthews, K., Pahre, M. A., Soifer, B. T., & Weinberger, A. J., 1997, Near infrared imaging of the Hubble Deep Field with the Keck Telescope, *Astron. J.* **113** 474–482 (DOI:10.1086/118269). (Associated erratum: *Astron. J.* **113** 2338 (DOI:10.1086/118445)).
12. Reid, I. N., Gizis, J. E., Cohen, J., Pahre, M. A., Hogg, D. W., Cowie, L., Hu, E., & Songaila, A., 1997, Faint M dwarfs and the structure of the Galactic disk, *Pubs. Astr. Soc. Pac.* **109** 559–565 (ADS:1997PASP..109..559R).
13. Hogg, D. W., Pahre, M. A., McCarthy, J. K., Cohen, J. G., Blandford, R., Smail, I., & Soifer, B. T., 1997, Counts and colours of faint galaxies in the *U* and *R* bands, *Mon. Not. R. Astr. Soc.* **288** 404–410 (ADS:1997MNRAS.288..404H).
14. Hogg, D. W. & Phinney, E. S., 1997, The fading of young stellar populations and the luminosity functions of dwarf, irregular and starburst galaxies, *Astrophys. J. Lett.* **488** L95–L99 (DOI:10.1086/310929).
15. Kundić, T., Hogg, D. W., Blandford, R. D., Cohen, J. G., Lubin, L. M., & Larkin, J. E., 1997, The external shear acting on gravitational lens B 1422+231, *Astron. J.* **114**

- 2276–2283 (DOI:10.1086/118647).
16. Hogg, D. W., 1998, *On the evolution of field galaxies*, PhD thesis, California Institute of Technology.
  17. Hogg, D. W. *et al*, 1998, A blind test of photometric redshift prediction, *Astron. J.* **115** 1418–1422 (DOI:10.1086/300277).
  18. Hogg, D. W., & Turner, E. L., 1998, A maximum likelihood method for improving faint source flux and color estimates, *Pubs. Astr. Soc. Pac.* **110** 727–731 (ADS:1998PASP..110..727H).
  19. Hogg, D. W., Cohen, J. G., Blandford, R., & Pahre, M. A., 1998, The O II luminosity density of the Universe, *Astrophys. J.* **504** 622–628 (DOI:10.1086/306122).
  20. Sykes, C. M. *et al*, 1998, The complex gravitational lens system B1933+503, *Mon. Not. R. Astr. Soc.* **301** 310–314 (DOI:10.1046/j.1365-8711.1998.02081.x).
  21. Nguyen, H. T., Eisenhardt, P. R., Werner, M. W., Goodrich, R., Hogg, D. W., Armus, L., Soifer, B. T., & Neugebauer, G., 1998, Imaging polarimetry of the gravitational lens FSC10214+4724, *Astron. J.* **117** 671–676 (DOI:10.1086/300742).
  22. Cohen, J. G., Blandford, R., Hogg, D. W., Pahre, M. A., & Shopbell, P. L., 1999, Caltech Faint Field Galaxy Redshift Survey. VIII. Analysis of the field J0053+1234, *Astrophys. J.* **512** 30–47 (DOI:10.1086/306778).
  23. Cohen, J. G., Hogg, D. W., Pahre, M. A., Blandford, R., Shopbell, P., & Richberg, K., 1999, Caltech Faint Field Galaxy Redshift Survey. VII. Data analysis techniques and redshifts in the field J0053+1234, *Astrophys. J. Suppl. Ser.* **120** 171–178 (DOI:10.1086/313184).
  24. Barkana, R., Blandford, R., & Hogg, D. W., 1999, A possible gravitational lens in the Hubble Deep Field South, *Astrophys. J. Lett.* **513** L91–L94 (DOI:10.1086/311924).
  25. Fruchter, A. S. *et al*, 1999, *Hubble Space Telescope* and Palomar imaging of GRB 990123: Implications for the nature of gamma-ray bursts and their hosts, *Astrophys. J. Lett.* **519** L13–L16 (DOI:10.1086/312094).
  26. Hogg, D. W. & Fruchter, A. S., 1999, The faint-galaxy hosts of gamma-ray bursts, *Astrophys. J.* **520** 54–58 (DOI:10.1086/307457).
  27. Carlberg, R. G. *et al*, 2000, Caltech Faint Galaxy Redshift Survey. XI. The merger rate to redshift 1 from kinematic pairs, *Astrophys. J. Lett.* **532** L1–L4 (DOI:10.1086/312560).
  28. Hogg, D. W., Pahre, M. A., Adelberger, K. L., Blandford, R., Cohen, J. G., Gautier, T. N., Jarrett, T., Neugebauer, G., & Steidel, C. C., 2000, Caltech Faint Field Galaxy Redshift Survey. IX. Source detection and photometry in the Hubble Deep Field region, *Astrophys. J. Suppl. Ser.* **127** 1–9 (DOI:10.1086/313318).
  29. Hogg, D. W., Neugebauer, G., Cohen, J. G., Dickinson, M. E., Djorgovski, S. G., Matthews, K., & Soifer, B. T., 2000, Three-micron imaging of the Hubble Deep Field, *Astron. J.* **119** 1519–1525 (DOI:10.1086/301309).
  30. Cohen, J. G., Hogg, D. W., Blandford, R., Cowie, L. L., Hu, E., Songaila, A., Shopbell, P., & Richberg, K., 2000, Caltech Faint Galaxy Redshift Survey. X. A redshift survey in the region of the Hubble Deep Field North, *Astrophys. J.* **538** 29–52 (DOI:10.1086/309096).
  31. van den Bergh, S., Cohen, J. G., Hogg, D. W., & Blandford, R., 2000, Caltech Faint Galaxy Redshift Survey. XIV. Galaxy morphology in the HDF (North) and its flanking

- fields to  $z = 1.2$ , *Astron. J.* **120** 2190–2205 (DOI:10.1086/316828).
32. Hogg, D. W., Cohen, J. G., & Blandford, R., 2000, The Caltech Faint Galaxy Redshift Survey. XII. Clustering of galaxies, *Astrophys. J.* **545** 32–42 (DOI:10.1086/317779).
  33. Hogg, D. W., 2001, Confusion errors in astrometry and counterpart association, *Astron. J.* **121** 1207–1213 (DOI:10.1086/318736).
  34. Blanton, M. R. *et al*, 2001, The luminosity function of galaxies in SDSS commissioning data, *Astron. J.* **121** 2358–2380 (DOI:10.1086/320405).
  35. Smette, A. *et al*, 2001, *Hubble Space Telescope*/STIS observations of GRB 000301C: CCD imaging and NUV MAMA spectroscopy, *Astrophys. J.* **556** 70–76 (DOI:10.1086/321585).
  36. Yasuda, N. *et al*, 2001, Galaxy number counts from the Sloan Digital Sky Survey commissioning data, *Astron. J.* **122** 1104–1124 (DOI:10.1086/322093).
  37. Hogg, D. W., Finkbeiner, D. P., Schlegel, D. J., & Gunn, J. E., 2001, A photometricity and extinction monitor at the Apache Point Observatory, *Astron. J.* **122** 2129–2138 (DOI:10.1086/323103).
  38. Eisenstein, D. J. *et al*, 2001, Spectroscopic target selection for the Sloan Digital Sky Survey: The Luminous Red Galaxy Sample, *Astron. J.* **122** 2267–2280 (DOI:10.1086/323717).
  39. Stoughton, C. *et al*, 2002, Sloan Digital Sky Survey: Early Data Release, *Astron. J.* **123** 485–548 (DOI:10.1086/324741).
  40. Schneider, D. P. *et al*, 2002, The Sloan Digital Sky Survey Quasar Catalog. I. Early Data Release, *Astron. J.* **123** 567–577 (DOI:10.1086/338434).
  41. Hogg, D. W. *et al*, 2002, The luminosity density of red galaxies, *Astron. J.* **124** 646–651 (DOI:10.1086/341392).
  42. Eisenstein, D. J., Hogg, D. W., *et al*, 2003, Average spectra of massive galaxies in the SDSS, *Astrophys. J.* **585** 694–713 (DOI:10.1086/346233).
  43. Hogg, D. W. *et al*, 2003, The overdensities of galaxy environments as a function of luminosity and color, *Astrophys. J. Lett.* **585** L5–L9 (DOI:10.1086/374238).
  44. Bernardi, M. *et al*, 2003, Early-type galaxies in the SDSS. I. The sample, *Astron. J.* **125** 1817–1848 (DOI:10.1086/367776).
  45. Bernardi, M. *et al*, 2003, Early-type galaxies in the SDSS. II. Correlations between observables, *Astron. J.* **125** 1849–1865 (DOI:10.1086/374256).
  46. Bernardi, M. *et al*, 2003, Early-type galaxies in the SDSS. III. The fundamental plane, *Astron. J.* **125** 1866–1881 (DOI:10.1086/367794).
  47. Blanton, M. R., Brinkmann, J., Csabai, I., Doi, M., Eisenstein, D., Fukugita, M., Gunn, J. E., Hogg, D. W., & Schlegel, D. J., 2003, Estimating fixed-frame galaxy magnitudes in the SDSS, *Astron. J.* **125** 2348–2360 (DOI:10.1086/342935).
  48. Blanton, M. R. *et al*, 2003, The galaxy luminosity function and luminosity density at redshift  $z = 0.1$ , *Astrophys. J.* **592** 819–838 (DOI:10.1086/375776).
  49. Blanton, M. R., Hogg, D. W., *et al*, 2003, The broadband optical properties of galaxies with redshifts  $0.02 < z < 0.2$ , *Astrophys. J.* **594** 186–207 (DOI:10.1086/375528).
  50. Abazajian, K. *et al*, 2003, The First Data Release of the Sloan Digital Sky Survey, *Astron. J.* **126** 2081–2086 (DOI:10.1086/378165).
  51. Hogg, D. W. *et al*, 2004, The dependence on environment of the color–magnitude relation of galaxies, *Astrophys. J. Lett.* **601** L29–L32 (DOI:10.1086/381749).

52. Quintero, A. D., Hogg, D. W., *et al*, 2004, Selection and photometric properties of K+A galaxies, *Astrophys. J.* **602** 190–199 ([DOI:10.1086/380601](https://doi.org/10.1086/380601)).
53. Lupton, R., Blanton, M. R., Fekete, G., Hogg, D. W., O’Mullane, W., Szalay, A., & Wherry, N., 2004, Preparing red-green-blue images from CCD data, *Pubs. Astr. Soc. Pac.* **116** 133–137 ([DOI:10.1086/382245](https://doi.org/10.1086/382245)).
54. Tegmark, M. *et al*, 2004, The three-dimensional power spectrum of galaxies from the *Sloan Digital Sky Survey*, *Astrophys. J.* **606** 702–740 ([DOI:10.1086/382125](https://doi.org/10.1086/382125)).
55. Tegmark, M. *et al*, 2004, Cosmological parameters from *SDSS* and *WMAP*, *Phys. Rev. D* **69** 103501 ([DOI:10.1103/PhysRevD.69.103501](https://doi.org/10.1103/PhysRevD.69.103501)).
56. Abazajian, K. *et al*, 2004, The Second Data Release of the *Sloan Digital Sky Survey*, *Astron. J.* **128** 502–512 ([DOI:10.1086/421365](https://doi.org/10.1086/421365)).
57. Finkbeiner, D. P. *et al*, 2004, *Sloan Digital Sky Survey* imaging of low Galactic latitude fields: Technical summary and data release, *Astron. J.* **128** 2577–2592 ([DOI:10.1086/425050](https://doi.org/10.1086/425050)).
58. Abazajian, K. *et al*, 2005, The Third Data Release of the *Sloan Digital Sky Survey*, *Astron. J.* **129** 1755–1759 ([DOI:10.1086/427544](https://doi.org/10.1086/427544)).
59. Zehavi, I., *et al*, 2005, The intermediate-scale clustering of luminous red galaxies, *Astrophys. J.* **621** 22–31 ([DOI:10.1086/427495](https://doi.org/10.1086/427495)).
60. Hogg, D. W., Eisenstein, D. J., Blanton, M. R., Bahcall, N. A., Brinkmann, J., Gunn, J. E., & Schneider, D. P., 2005, Cosmic homogeneity demonstrated with luminous red galaxies, *Astrophys. J.* **624** 54–58 ([DOI:10.1086/429084](https://doi.org/10.1086/429084)).
61. Hogg, D. W., Tremonti, C. A., Blanton, M. R., Finkbeiner, D. P., Padmanabhan, N., Quintero, A. D., Schlegel, D. J., & Wherry, N., 2005, Mid-infrared and visible photometry of galaxies: Anomalously low polycyclic aromatic hydrocarbon emission from low-luminosity galaxies, *Astrophys. J.* **624** 162–167 ([DOI:10.1086/429686](https://doi.org/10.1086/429686)).
62. Blanton, M. R. *et al*, 2005, New York University Value-Added Galaxy Catalog: A galaxy catalog based on new public surveys, *Astron. J.* **129** 2562–2578 ([DOI:10.1086/429803](https://doi.org/10.1086/429803)).
63. Willman, B., Blanton, M. R., West, A. A., Dalcanton, J. J, Hogg, D. W., Schneider, D. P., Wherry, N., Yanny, B., & Brinkmann, J., 2005, A new Milky Way companion: Unusual globular cluster or extreme dwarf satellite?, *Astron. J.* **129** 2692–2700 ([DOI:10.1086/430214](https://doi.org/10.1086/430214)).
64. Willman, B. *et al*, 2005, A new Milky Way dwarf galaxy in Ursa Major, *Astrophys. J. Lett.* **626** L85–L88 ([DOI:10.1086/431760](https://doi.org/10.1086/431760)).
65. Blanton, M. R., Eisenstein, D. J., Hogg, D. W., Schlegel, D. J., & Brinkmann, J., 2005, The relationship between environment and the broad-band optical properties of galaxies in the *Sloan Digital Sky Survey*, *Astrophys. J.* **629** 143–157 ([DOI:10.1086/422897](https://doi.org/10.1086/422897)).
66. Hogg, D. W., Blanton, M. R., Roweis, S. T., & Johnston, K. V., 2005, Modeling complete distributions with incomplete observations: The velocity ellipsoid from *Hipparcos* data, *Astrophys. J.* **629** 268–275 ([DOI:10.1086/431572](https://doi.org/10.1086/431572)).
67. Berlind, A. A., Blanton, M. R., Hogg, D. W., Weinberg, D. H., Davé, R., Eisenstein, D. J., & Katz, N., 2005, Interpreting the relationship between galaxy luminosity, color and environment, *Astrophys. J.* **629** 625–632 ([DOI:10.1086/431658](https://doi.org/10.1086/431658)).
68. Eisenstein, D. J., Zehavi, I., Hogg, D. W., *et al*, 2005, Detection of the baryon acoustic

- peak in the large-scale correlation function of *Sloan Digital Sky Survey* Luminous Red Galaxies, *Astrophys. J.* **633** 560–574 (DOI:10.1086/466512).
69. Adelman-McCarthy, J. K. *et al*, 2006, The Fourth Data Release of the *Sloan Digital Sky Survey*, *Astrophys. J. Suppl. Ser.* **162** 38–48 (DOI:10.1086/497917).
70. Farrar, G. F., Berlind, A. A., & Hogg, D. W., 2006, Foreground and source of a cluster of ultra-high-energy cosmic rays, *Astrophys. J.* **642** L89–L93 (DOI:10.1086/504711).
71. Cool, R. J., Eisenstein, D. J., Hogg, D. W., Blanton, M. R., Schlegel, D. J., Brinkmann, J., Schneider, D. P., & Vanden Berk, D. E., 2006, *SDSS* pre-burst observations of recent gamma-ray burst fields, *Pubs. Astr. Soc. Pac.* **118** 733–739 (DOI:10.1086/503334).
72. Masjedi, M., Hogg, D. W., *et al*, 2006, Very small-scale clustering and merger rate of luminous red galaxies, *Astrophys. J.* **644** 54–60 (DOI:10.1086/503536).
73. Blanton, M. R., Eisenstein, D. J., Hogg, D. W., & Zehavi, I. I., 2006, The scale-dependence of relative galaxy bias: Encouragement for the “halo model” description, *Astrophys. J.* **645** 977–985 (DOI:10.1086/500918).
74. Tucker, D. L. *et al*, 2006, The *Sloan Digital Sky Survey* Monitor Telescope pipeline, *Astron. Nachr.* **327** 821–843 (DOI:10.1002/asna.200610655).
75. Hogg, D. W., Masjedi, M., Berlind, A. A., Blanton, M. R., Quintero, A. D., & Brinkmann, J., 2006, What triggers galaxy transformations? The environments of post-starburst galaxies, *Astrophys. J.* **650** 763–769 (DOI:10.1086/507172).
76. Berlind, A. A. *et al*, 2006, Percolation galaxy groups and clusters in the *SDSS* Redshift Survey: Identification, catalogs, and the multiplicity function, *Astrophys. J. Suppl. Ser.* **167** 1–25 (DOI:10.1086/508170).
77. Tegmark, M., *et al*, 2006, Cosmological constraints from the *SDSS* Luminous Red Galaxies, *Phys. Rev. D* **74** 123507 (DOI:10.1103/PhysRevD.74.123507).
78. Schneider, D. P., *et al*, 2007, The *Sloan Digital Sky Survey* Quasar Catalog IV: Fifth Data Release, *Astron. J.* **134** 102–117 (DOI:10.1086/518474).
79. Padmanabhan, N., *et al*, 2007, The clustering of luminous red galaxies in the *Sloan Digital Sky Survey* imaging data, *Mon. Not. R. Astr. Soc.* **378** 852–872 (DOI:10.1111/j.1365-2966.2007.11593.x).
80. Adelman-McCarthy, J. K. *et al*, 2007, The Fifth Data Release of the *Sloan Digital Sky Survey*, *Astrophys. J. Suppl. Ser.* **172** 634–644 (DOI:10.1086/518864).
81. Barron, J. T., Stumm, C., Hogg, D. W., Lang, D., & Roweis, S., 2008, Cleaning the USNO-B Catalog through automatic detection of optical artifacts, *Astron. J.* **135** 414–422 (DOI:10.1088/0004-6256/135/1/414).
82. Padmanabhan, N., *et al*, 2008, An improved photometric calibration of the *Sloan Digital Sky Survey* imaging data, *Astrophys. J.* **674** 1217–1233 (DOI:10.1086/524677).
83. Adelman-McCarthy, J. K. *et al*, 2008, The Sixth Data Release of the *Sloan Digital Sky Survey*, *Astrophys. J. Suppl. Ser.* **175** 297–313 (DOI:10.1086/524984).
84. Masjedi, M., Hogg, D. W., & Blanton, M. R., 2008, The growth of luminous red galaxies by merging, *Astrophys. J.* **679** 260–268 (DOI:10.1086/586696).
85. Bell, E. F., *et al*, 2008, The accretion origin of the Milky Way’s stellar halo, *Astrophys. J.* **680** 295–311 (DOI:10.1086/588032).
86. Barron, J. T., Hogg, D. W., Lang, D., & Roweis, S., 2008, Blind Date: Using proper

- motions to determine the ages of historical images, *Astron. J.* **136** 1490–1501 (DOI:10.1088/0004-6256/136/4/1490).
87. Bovy, J., Hogg, D. W., & Moustakas, J., 2008, The transparency of galaxy clusters, *Astrophys. J.* **688** 198–207 (DOI:10.1086/592187).
88. Maller, A. H., Berlind, A. A., Blanton, M. R., & Hogg, D. W., 2009, The intrinsic properties of SDSS galaxies, *Astrophys. J.* **691** 394–406 (DOI:10.1088/0004-637X/691/1/394).
89. Marshall, P. J., Hogg, D. W., Moustakas, L. A., Fassnacht, C. D., Bradač, M., Schrabback, T., & Blandford, R. D., 2009, Automated detection of galaxy-scale gravitational lenses in high-resolution imaging data, *Astrophys. J.* **694** 924–942 (DOI:10.1088/0004-637X/694/2/924).
90. Lang, D., Hogg, D. W., Jester, S., & Rix, H.-W., 2009, Measuring the undetectable: Proper motions and parallaxes of very faint sources, *Astron. J.* **137** 4400–4411 (DOI:10.1088/0004-6256/137/5/4400).
91. More, S., Bovy, J., & Hogg, D. W., 2009, Cosmic transparency: A test with the baryon acoustic feature and type Ia supernovae, *Astrophys. J.* **696** 1727–1732 (DOI:10.1088/0004-637X/696/2/1727).
92. Abazajian, K. N. *et al*, 2009, The Seventh Data Release of the Sloan Digital Sky Survey, *Astrophys. J. Suppl. Ser.* **182** 543–558 (DOI:10.1088/0067-0049/182/2/543).
93. Bunn, E. F. & Hogg, D. W., 2009, The kinematic origin of the cosmological redshift, *Am. J. Phys.* **77**(8) 688–694 (DOI:10.1119/1.3129103).
94. Bovy, J., Hogg, D. W., & Roweis, S., 2009, The velocity distribution of nearby stars from *Hipparcos* data I. The significance of the moving groups, *Astrophys. J.* **700** 1794–1819 (DOI:10.1088/0004-637X/700/2/1794).
95. Zolotov, A., Willman, B., Brooks, A. M., Governato, F., Brook, C. B., Hogg, D. W., Quinn, T., & Stinson, G., 2009, The dual origin of stellar halos, *Astrophys. J.* **702** 1058–1067 (DOI:10.1088/0004-637X/702/2/1058).
96. Bovy, J., Hogg, D. W., & Rix, H.-W., 2009, Galactic masers and the Milky Way circular velocity, *Astrophys. J.* **704** 1704–1709 (DOI:10.1088/0004-637X/704/2/1704).

### Publications in preparation

- Koposov, S. E., Rix, H.-W., & Hogg, D. W., Constraining the Milky Way potential with a 6-D phase-space map of the GD-1 stellar stream, *Astrophys. J.* submitted (arXiv:0907.1085).
- Wu, R., Hogg, D. W., & Moustakas, J., The aromatic features in very faint dwarf galaxies, *Astrophys. J.* submitted (arXiv:0907.1783).
- Bovy, J., Hogg, D. W., & Roweis, S., Extreme deconvolution: Inferring complete distribution functions from noisy, heterogeneous and incomplete observations, *Ann. Appl. Stat* submitted (arXiv:0905.2979).
- Lang, D., Hogg, D. W., Mierle, K., Blanton, M., & Roweis, S., *Astrometry.net*: Blind astrometric calibration of arbitrary astronomical images, *Astron. J.* submitted (arXiv:0910.2233).
- Price-Whelan, A. M. & Hogg, D. W., What bandwidth do I need for my image?,

*Pubs. Astr. Soc. Pac.* submitted ([arXiv:0910.2375](https://arxiv.org/abs/0910.2375)).

Bovy, J., Murray I., & Hogg, D. W., The gravitational force law in the Solar System, to be submitted ([arXiv:0903.5308](https://arxiv.org/abs/0903.5308)).

### Unrefereed publications

- Hogg, D. W., Martin, F., & Resnick, M., 1991, Braitenberg Creatures, *E&L Memo 13*, Epistemology and Learning Group, MIT Media Laboratory, Cambridge, Massachusetts.
- Smail, I., Couch, W. J., Ellis, R. S., & Hogg, D. W., 1995, Gravitational lensing by the rich cluster AC114, *Clusters of Galaxies*, eds. Durret, F., Mazure, A., & Tran Thanh Van, J., Editions Frontières, 425.
- Djorgovski, S. *et al*, 1995, Deep galaxy counts in the *K* band with the Keck Telescope, *Examining the Big Bang and Diffuse Background Radiation*, ed. Kafatos, M., Kluwer, Dordrecht.
- Blandford, R. D. & Hogg, D. W., 1996, Gravitational telescopes, *Astrophysical Applications of Gravitational Lensing*, eds. Kochanek, C. S., & Hewitt, J. N., Cambridge University Press, Cambridge.
- Hogg, D. W., Cohen, J. G., Blandford, R., Shopbell, P., Cowie, L. L., Hu, E. M., & Songaila, A., 1997, The redshift distribution in the Hubble Deep Field, *The Hubble Space Telescope and the High Redshift Universe*, eds. Tanvir, N. R., Aragón-Salamanca, A., & Wall, J. V., Cambridge University Press, Cambridge, 147–148.
- Hogg, D. W., Blandford, R., Fassnacht, C. D., Kundić, T., Brainerd, T. G., & Malhotra, S., 1997, Strong and weak gravitational lensing in the Hubble Deep Field, *The Hubble Space Telescope and the High Redshift Universe*, eds. Tanvir, N. R., Aragón-Salamanca, A., & Wall, J. V., Cambridge University Press, Cambridge, 267–268.
- Arav, N. & Hogg, D. W., 1997, What is the redshift of gamma-ray burst 970508?, [arXiv:astro-ph/9706068](https://arxiv.org/abs/astro-ph/9706068).
- Hogg, D. W. & Turner, E. L., 1998, GRB971214, association with a Galactic star? *GRB Coordinates Network Circular* 150.
- Cohen, J. G., Hogg, D. W., Blandford, R., Pahre, M. A., & Shopbell, P. L., 1998, The extremely red objects found thus far in the Caltech Faint Galaxy Redshift Survey, *Infrared Surveys: A Prelude to SIRTF*, eds. Bica, M. D., Cutri, R. M., & Madore, B. F., ASP Conference Series **177**, 51–56.
- Thorsett, S. E. & Hogg, D. W., 1999, Possible identification of SN1999E with GRB980910, *GRB Coordinates Network Circular* 197.
- Hogg, D. W., 1999, Distance measures in cosmology, [arXiv:astro-ph/9905116](https://arxiv.org/abs/astro-ph/9905116).
- Hogg, D. W., 1999, Faint field surveys: The view from Pasadena, *The Hy Redshift Universe: Galaxy Formation and Evolution at High Redshift*, eds. Bunker, A. J., & van Breugel, W. J. M., Astronomical Society of the Pacific, San Francisco, 224–233.
- Hogg, D. W., Constraints on photometric calibration from observations of high-redshift type Ia supernovae, [arXiv:astro-ph/0001419](https://arxiv.org/abs/astro-ph/0001419).
- Smette, A. *et al*, 2000, Ultraviolet Spectra of GRBs: Potential with STIS, *The Greatest Explosions Since the Big Bang: Supernovae and Gamma-Ray Bursts*, eds. Livio, M., Panagia, N., & Sahu, K., STScI, Baltimore.

- Hogg, D. W. & Zaldarriaga, M., 2000, The big bang's radical brother (book review), *Science* **290** 2079–2080.
- Hogg, D. W., 2001, *The Sloan Digital Sky Survey, IAU Symposium 204: The Extragalactic Infrared Background and its Cosmological Implications*, eds. Harwit, M., & Hauser, M. G., Astronomical Society of the Pacific, San Francisco, 209.
- Hogg, D. W., 2001, A meta-analysis of cosmic star-formation history, [arXiv:astro-ph/0105280](https://arxiv.org/abs/astro-ph/0105280).
- Hogg, D. W., Baldry, I. K., Blanton, M. R., & Eisenstein, D. J., 2002, The  $K$  correction, [arXiv:astro-ph/0210394](https://arxiv.org/abs/astro-ph/0210394).
- Wherry, N., Blanton, M. R., & Hogg, D. W., 2004, A more informative picture of the *HST* Ultra Deep Field, [arXiv:astro-ph/0406274](https://arxiv.org/abs/astro-ph/0406274).
- Mahajan, S. & Hogg, D. W., 2004, Introductory physics: The new scholasticism (book review), [arXiv:physics/0412107](https://arxiv.org/abs/physics/0412107).
- Eisenstein, D. J., Hogg, D. W., & Padmanabhan, N., 2005, GRB050509b: *SDSS* pre-burst observations, *GRB Coordinates Network Circular* 3418.
- Hogg, D. W., 2005, Galaxy evolution with future wide-field space missions, *New Astronomy Reviews* **49** 379–386.
- Hogg, D. W., 2005, What best constrains galaxy evolution in the local Universe?, [arXiv:astro-ph/0512029](https://arxiv.org/abs/astro-ph/0512029).
- Quintero, A. D., Berlind, A. A., Blanton, M. R., & Hogg, D. W., 2006, The asymmetric relations among galaxy color, structure, and environment, [arXiv:astro-ph/0611361](https://arxiv.org/abs/astro-ph/0611361).
- Hogg, D. W., 2006, Air resistance, [arXiv:physics/0609156](https://arxiv.org/abs/physics/0609156).
- Hogg, D. W., 2007, Real-world ballistics: A dropped bucket, [arXiv:0709.0107](https://arxiv.org/abs/0709.0107).
- Hogg, D. W., 2008, Data analysis recipes: Choosing the binning for a histogram, [arXiv:0807.4820](https://arxiv.org/abs/0807.4820).
- Hogg, D. W., Blanton, M. R., Lang, D., Mierle, K., & Roweis, S., 2008, Automated Astrometry, *Astronomical Data Analysis Software and Systems XVII*, Argyle, R. W., Bunclark, P. S., & Lewis, J. R., eds., ASP Conference Series **394**, 27–34 (ISBN:978-1-58381-658-5).
- Hogg, D. W. & Lang, D., 2008, Astronomical imaging: The theory of everything, *Classification and Discovery in Large Astronomical Surveys*, Bailer-Jones, C. A. L., ed., AIP Conference Proceedings **1082** 331–338 (ISBN:978-0-7354-0613-1) ([DOI:10.1063/1.3059072](https://doi.org/10.1063/1.3059072)).
- Weiner, B. J., *et al*, 2009, Astronomical Software Wants To Be Free: A Manifesto, [arXiv:0903.3971](https://arxiv.org/abs/0903.3971).
- Hogg, D. W., 2009, Is cosmology just a plausibility argument?, [arXiv:0910.3374](https://arxiv.org/abs/0910.3374).

### Miscellaneous publications

- Danner, R. & Hogg, D. W., 1996, *The Palomar Observatory*, a 20-minute video presentation for the Palomar Observatory Visitor Center.
- Hogg, D. W., 1997, *Special Relativity*, lecture notes employed in Caltech's first-year physics course, 1995–2000, and Princeton's, 1999–2001 and 2003–2004, and others (<http://cosmo.nyu.edu/hogg/sr/>).
- Lang, D., *et al*, 2008, *Astrometry.net* codebase, GPLv2, used by hundreds of professional

and amateur astronomers worldwide (<http://astrometry.net/>).  
Bovy, J., Hogg, D. W., & Roweis, S., 2009, *extreme-deconvolution* codebase, GPLv2,  
(<http://code.google.com/p/extreme-deconvolution/>).

**Invited talks**

*List available upon request.*