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RESEARCH INTERESTS

Galaxy Formation and Evolution; Observational Cosmology

EDUCATION

Ph.D. , Astrophysics, Johns Hopkins University, Baltimore, MD (2003)
Adviser: Dr. Henry Ferguson: *The History of the Evolution of Dwarf Galaxies*
M.A. , Astrophysics, Johns Hopkins University, Baltimore, MD (1998)
B.A. with honors, Physics & Astronomy, Bryn Mawr College, Bryn Mawr, PA (1996)

PROFESSIONAL APPOINTMENTS

Leo Goldberg Fellow (2005- present)
National Optical Astronomy Observatory, Tucson, AZ

Postdoctoral Fellow (2002-2005) with Prof. Joel Primack, Sandra Faber, Piero Madau
University of California, Santa Cruz, CA

Graduate Student Research Assistant (1996-2002) with Dr. Henry Ferguson
Space Telescope Science Institute, Baltimore, MD

Research Student (1996) with Professor James Hough
Center for Gravitational Physics, University of Glasgow, U.K.

Smithsonian Astrophysical Observatory REU Intern (1995) with Dr. Brian McNamara
Harvard-Smithsonian Center for Astrophysics, Cambridge, MA

Maria Mitchell Observatory REU intern (1994) with Dr. Eileen Friel
Maria Mitchell Observatory, Nantucket, MA

PUBLIC SERVICE

NSF Astronomy & Astrophysics Postdoctoral Fellowship panel member (2009)
National Optical Astronomy Observatory Extra-Galactic TAC member (2008-present)
Kitt Peak Observatory 50th Anniversary Steering Committee (2008-present)
NSF Astronomy & Astrophysics panel member (2006)
Hubble Space Telescope Extra-Galactic panel member (2005)
referee for *Astrophysical Journal*, *Astronomical Journal*, *Monthly Notices of the Royal
Astronomical Society*

SELECTED GRANTS/OBSERVING PROGRAMS

CoI - Cycle 17 Hubble Space Telescope Theory Program 11758 (2008)
Simulated HST Observations of Elliptical Galaxies in Formation

PI - NOAO/WIYN; (2007)
SparsePak observations of Galaxy Merger Kinematics, Star-formation, and Feedback

CoI - Cycle 3 Spitzer Space Telescope Theory Program 30183 (2006)
Infrared Predictions from Simulations of Merging Galaxies

CoI - Cycle 15 Hubble Space Telescope Theory Program 10958 (2006)
Quantifying Observed Timescales in Galaxy Mergers using Simulations

PI - Cycle 14 Hubble Space Telescope Archival Program 10675 (2005)
A Multi-Wavelength Study of Galaxy Mergers out to $z \sim 2$

TEACHING/OUTREACH EXPERIENCE

Kitt Peak Research Experience for Undergraduates (REU) project adviser (2008,2009)

Steward Observatory public lecture *Collisions in the Cosmos* (2006)

Co-instructor, *The Distant Universe*, Hartnell Community College, Salinas, CA
(2004,2005)

Project adviser for *Stars, Sight, and Science* (2004),

California State Summer School for Mathematics & Science, Santa Cruz, CA

Center for Adaptive Optics Professional Development Workshop (2004)

Teaching assistant for *Introductory Physics*, Johns Hopkins University, (1998-1999)

Teaching assistant for *Introductory Physics*, Bryn Mawr College, (1993-1996)

STUDENTS SUPERVISED

Erica Jones, Kitt Peak REU summer student (2009)

Matthew Zagursky, Kitt Peak REU summer student (2008)

Christina Pierce, UCSC Physics graduate student thesis (2004-2008), with J. Primack

Seth Cottrell, UCSC Physics undergraduate thesis (2005), with J. Primack

Tela Favalaro, UCSC Physics undergraduate thesis (2004), with J. Primack

Laura White, STScI REU summer student (2000), with H. Ferguson

Rosemary Telford, STScI REU summer student (1999), with H. Ferguson

AWARDS AND FELLOWSHIPS

National Optical Astronomy Observatory Leo Goldberg Fellowship

Space Telescope Science Institute Graduate Student Fellowship

Bryn Mawr College Alumnae Association Award

T. J. Watson I.B.M. Scholarship

RECENT TALKS AND COLLOQUIA

invited talk, AAS Special Session (1/10)
Galaxy Morphology at High Redshift: Origins of the Hubble Sequence
Stanford Cosmology Seminar (11/09)
contributed talk at *Assembly, Gas Content and Star Formation History of Galaxies*,
Charlottesville, VA (9/09)
Texas A&M University Astrophysics Seminar (2/09)
Space Telescope Science Institute Colloquium (1/09)
California Institute for Technology Astronomy Colloquium (12/08)
Carnegie Observatories Seminar (12/08)
UC San Diego, Center for Astrophysics & Space Sciences Seminar (11/08)
NOAO/Steward Observatory Colloquium (11/08)
Harvard-Smithsonian Center for Astrophysics, Optical/Infrared Seminar (9/08)
AURA Observatory Council science talk, NOAO (9/08)
Santa Cruz Galaxy Evolution Workshop, UC Santa Cruz (8/08)
Space Telescope Science Institute, Galaxies Seminar (6/08)
WIYN Board science talk, NOAO (3/08)
Herzberg Institute for Astronomy, Victoria, BC, Colloquium (1/08)
invited review at *'At the Edge of the Universe'*, Sintra, Portugal (10/06)
contributed talk at *'Galaxy Mergers - From the Local Universe to the Red Sequence'*,
Baltimore, MD (10/06)
contributed talk at *'Dwarf Galaxies as Astrophysical and Cosmological Probes'*,
Ringberg, Germany (3/06)
contributed talk at *'Nearly Normal Galaxies'*, Santa Cruz, CA, (8/05)

ACTIVE COLLABORATIONS

Large Synoptic Survey Telescope (LSST) Galaxies Science Collaboration
DEep Extragalactic Probe (DEEP) team
Great Observatories Origins Deep Survey (GOODS) team
UC Santa Cruz Theoretical Astrophysics group
Harvard CfA Theoretical Astrophysics group

REFERENCES

Prof. Joel Primack, Dept. of Physics, University of California, Santa Cruz, email: joel@scipp.ucsc.edu , tel: 831 459 2580	Dr. Henry Ferguson, Space Telescope Science Institute, email: ferguson@stsci.edu , tel: 410 338 5098
Dr. Buell Jannuzi, NOAO, Kitt Peak Observatory, email: bjannuzi@noao.edu , tel: 520 318 8353	Prof. Sandra Faber, Lick Observatory, University of California, Santa Cruz, email: faber@ucolick.org , tel: 831 459 2944

REFEREED PUBLICATIONS

first author publications:

“The Effect of Gas Fraction on the Morphologies and Time-Scales of Disc Galaxy Mergers”, **Lotz, J.M.**, Jonsson, P., Cox, T.J., Primack, J., 2009, MNRAS, submitted

“The Effect of Mass Ratio on the Morphologies and Time-Scales of Disc Galaxy Mergers”, **Lotz, J.M.**, Jonsson, P., Cox, T.J., Primack, J., 2009, MNRAS, submitted

“Galaxy Merger Morphologies and Time-Scales from Simulations of Equal-Mass Gas-Rich Disc Mergers”, **Lotz, J.M.**, Jonsson, P., Cox, T.J., Primack, J.R., 2008, MNRAS, 391, 1137

“The Evolution of Galaxy Mergers and Morphology at $z < 1.2$ in the Extended Groth Strip”, **Lotz, J.M.**, Davis, M., Faber, S. M., et al., 2008, ApJ, 672, 177

“The Rest-Frame Far-Ultraviolet Morphologies of Star-Forming Galaxies at $z \sim 1.5$ and 4”, **Lotz, J.M.**, Madau, P., Giavalisco, M., Primack, J., Ferguson, H.C. 2006, ApJ, 636, 592

“A New Nonparametric Approach to Galaxy Morphological Classification”, **Lotz, J.M.**, Primack, J., Madau, P., 2004, AJ, 128, 163

“The Colors of Dwarf Elliptical Galaxy Globular Cluster Systems, Nuclei, and Stellar Halos”, **Lotz, J.M.**, Miller, B.W., Ferguson, H.C. 2004, ApJ, 613, 262

“The Star-forming Dwarf Galaxy Populations of Two $z \sim 0.4$ Clusters: MS 1512.4+3647 and A851”, **Lotz, J.M.**, Martin, C.L., Ferguson, H.C. 2003, ApJ, 596, 143

“Dynamical Friction in dE Globular Cluster Systems”, **Lotz, J.M.**, Telford, R., Ferguson, H.C., Miller, B.W., Stiavelli, M., Mack, J., 2001, ApJ, 552, 572

“Mid-Ultraviolet Determination of Elliptical Galaxy Abundances and Ages”, **Lotz, J.M.**, Ferguson, H.C., Bohlin, R.C., 2000, ApJ, 532, 830

selected student-led publications:

“The Effects of AGN on Host Galaxy Colour and Morphology Measurements”, Pierce, C., **Lotz, J.M.**, et al., 2009, MNRAS, submitted

“The Role of Galaxy Mergers in Cosmic Star Formation History”, Shi, Y., Rieke, G., **Lotz, J.M.**, Perez-Gonzalez, P., 2009, ApJ, 697, 1764

“HST Morphologies of $z \sim 2$ Dust Obscured Galaxies I: Power-Law Sources”, Bussmann, R. S., Dey, A., **Lotz, J.**, et al., 2009, ApJ, 693, 750

“AEGIS: Host Galaxy Morphologies of X-ray and Infrared-selected AGN at $0.2 < z < 1.2$ ”, Pierce, C., **Lotz, J. M.**, et al, 2007, ApJ, 660L, 19

“The DEEP2 Galaxy Redshift Survey: AEGIS Observations of a Dual AGN at $z=0.7$ ”, Gerke, B., Newman, J. A., **Lotz, J.**, et al., 2007, ApJ, 660L, 23

other publications:

“Host galaxy morphologies of X-ray selected AGN: assessing the significance of different black hole fuelling mechanisms to the accretion density of the Universe at $z \sim 1$ ”, Georgakakis, A., Coil, A., Laird, E. S., Griffith, R. L., Nandra, K., **Lotz, J. M.**, Pierce, C., Cooper, M. C., Newman, J. A., Koekemoer, A. M., 2009, MNRAS, 397, 623

“Ubiquitous outflows in DEEP2 spectra of star-forming galaxies at $z=1.4$ ”, Weiner, B., Coil, A. L., Prochaska, J. X., Newman, J. A., Cooper, M. C., Bundy, K., Conselice, C. J., Dutton, A. A., Faber, S. M., Koo, D. C., **Lotz, J. M.**, Rieke, G. H., Rubin, K. H. R., 2009, ApJ, 692, 187

“Comparing Local Starbursts to High-Redshift Galaxies: a Search for Lyman-Break Analogs”, Petty, S.M., de Mello, D.F., Gallagher, J.S., Gardner, J.P., **Lotz, J.M.**, Mountain, C.M., Smith, L.J., 2009, AJ, 138, 362

“AEGIS: The Nature of the Host Galaxies of Low-ionization Outflows at $z < 0.6$ ”, Sato, T., Martin, C. L., Noeske, K. G., Koo, D. C., **Lotz, J. M.**, 2009, ApJ, 696, 214

“The Redshift Evolution of Wet, Dry, and Mixed Galaxy Mergers from Close Galaxy Pairs in the DEEP2 Galaxy Redshift Survey”, Lin, L., Patton, D. R., Koo, D. C., Casteels, K., Conselice, C. J., Faber, S. M., **Lotz, J.**, et al. 2008, ApJ, 681, 232

“The Hubble Space Telescope Advanced Camera for Surveys Coma Cluster Survey. I. Survey Objectives and Design”, Carter, D., Goudfrooij, P., Mobasher, B., Ferguson, H., Puzia, T. H., Aguerri, A. L., Balcells, M., Batcheldor, D., Bridges, T., Davies, J. I., Erwin, P., Graham, A. W., Guzmán, R., Hammer, D., Hornschemeier, A., Hoyos, C., Hudson, M. J., Huxor, A., Jogee, S., Komiyama, Y., **Lotz, J.**, Lucey, J. R., Marzke, R., Merritt, D., Miller, B. W., Miller, N. A., Mouhcine, M., Okamura, S., Peletier, R. F., Phillipps, S., Poggianti, B. M., Sharples, R. M., Smith, R. J., Trentham, N., Tully, R., Valentijn, E., Verdoes Kleijn, G., 2008, ApJS, 176, 424

“The role of AGN in the colour transformation of galaxies at redshifts $z \sim 1$ ”, Georgakakis, A., Nandra, K., Yan, R., Willner, S. P., **Lotz, J. M.**, et al 2008, MNRAS, 385, 2049

“Hubble Space Telescope Morphologies of Local Lyman Break Galaxy Analogs. I. Evidence for Starbursts Triggered by Merging”, Overzier, R.A., Heckman, T. M., Kauffmann, G., Seibert, M., Rich, R., Basu-Zych, A., Lotz, J., et al. 2008, ApJ, 677, 37

“The faint and extremely red K-band-selected galaxy population in the DEEP2/Palomar fields”, Conselice, C. J., Bundy, K., U, Vivian, Eisenhardt, P., **Lotz, J.**, Newman, J., 2008, MNRAS, 383, 1366

“The Globular Cluster Luminosity Function and Specific Frequency in Dwarf Elliptical Galaxies”, Miller, B. W., **Lotz, J.M.**, 2007, ApJ, 670, 107

“The properties and evolution of a K-band selected sample of massive galaxies at $z \sim 0.4-2$ in the Palomar/DEEP2 survey”, Conselice, C. J., Bundy, K., Trujillo, I., Coil, A., Eisenhardt, P., Ellis, R. S., Georgakakis, A., Huang, J., **Lotz, J.**, et al. 2007, MNRAS, 381, 962

“Far-infrared characterization of an ultra-luminous starburst associated with a massively-accreting black hole at $z=1.15$ ”, Le Floch, E., Willmer, C. N. A., Noeske, K., Konidaris, N. P., Laird, E. S., Koo, D. C., Nandra, K., Bundy, K., Salim, S., Maiolino, R., Conselice, C. J., **Lotz, J. M.**, et al., 2007, ApJ, 660L, 65

“AEGIS: A Panchromatic Study of IRAC-selected Extremely Red Objects with Confirmed Spectroscopic Redshifts”, Wilson, G., Huang, J.-S., Fazio, G. G., Yan, R., Koekemoer, A. M., Salim, S., Faber, S. M., Lotz, J., et al., 2007, ApJ, 660L, 59

“The Diversity of Bright Near-IR Selected Distant Red Galaxies”, Conselice, C. J., Newman, J. A., Georgakakis, A., Almaini, O., Coil, A. L., Cooper, M. C., Eisenhardt, P., Foucaud, S., Koekemoer, A., Lotz, J., et al., 2007, ApJ, 660L, 55

“AEGIS: Enhancement of Dust Enshrouded Star-Formation in Close Galaxy Pairs and Merging Galaxies up to $z \sim 1$ ”, Lin, L., Koo, D. C., Weiner, B. J., Chiueh, T., Coil, A., Lotz, J., et al., 2007, ApJ, 660L, 51

“AEGIS: Star-formation in field galaxies since $z=1.1$ II. A model of mass-dependent gas exhaustion and staged galaxy formation”, Noeske, K., Faber, S. M., Weiner, B. J., Koo, D. C., Primack, J. R., Dekel, A., Papovich, C., Conselice, C. J., Le Floch, E., Rieke, G., Coil, A. L., Lotz, J. M., Somerville, R. S., Bundy, K., 2007, ApJ, 660L, 47

“AEGIS: Star-formation in field galaxies since $z=1.1$ I. Dominance of gradually declining over episodic star formation”, Noeske, K., Weiner, B. J., Faber, S. M., Papovich, C., Koo, D. C., Somerville, R. S., Bundy, K., Conselice, C. J., Newman, J. A., Schiminovich, D., Le Floch, E., Coil, A. L., Rieke, G. H., Lotz, J. M., et al., 2007, ApJ, 660L, 43

“The Stellar Mass Tully-Fisher Relation to $z=1.2$ ”, Kassin, S., Weiner, B. J., Faber, S., Koo, D. C., **Lotz, J. M.**, et al. ApJ, 660L, 35

“*A Strong-Lens Survey in AEGIS*”, Moustakas, L. A., Marshall, P., Newman, J. A., Coil, A. L., Cooper, M. C., Davis, M., Fassnacht, C. D., Guhathakurta, P., Hopkins, A., Koekemoer, A., Konidaris, N. P., **Lotz, J. M.**, Willmer, C. N. A., 2007, ApJ, 660L, 31

“*AEGIS: Galaxy Spectral Energy Distributions from the X-Ray to Radio*”, Konidaris, N.P., Guhathakurta, P., Bundy, K., Coil, A. L., Conselice, C. J., Cooper, M. C., Eisenhardt, P. R. M., Huang, J.-S., Ivison, R. J., Kassin, S. A., Kirby, E. N., **Lotz, J. M.**, et al. 2007, ApJ, 660L, 7

“*The All-wavelength Extended Groth Strip International Survey (AEGIS)*”, Davis, M., Guhathakurta, P., Konidaris, N. P., Newman, J. A., Ashby, M. L. N., Biggs, A. D., Barmby, P., Bundy, K., Chapman, S. C., Coil, A. L., Conselice, C. J., Cooper, M. C., Croton, D. J., Eisenhardt, P. R. M., Ellis, R. S., Faber, S. M., Fang, T., Fazio, G. G., Georgakakis, A., Gerke, B. F., Goss, W. M., Gwyn, S., Harker, J., Hopkins, A. M., Huang, J.-S., Ivison, R. J., Kassin, S. A., Kirby, E. N., Koekemoer, A. M., Koo, D. C., Laird, E. S., Le Floch, E., Lin, L., **Lotz, J. M.**, Marshall, P. J., Martin, D. C., Metevier, A. J., Moustakas, L. A., Nandra, K., Noeske, K. G., Papovich, C., Phillips, A. C., Rich, R. M., Rieke, G. H., Rigopoulou, D., Salim, S., Schiminovich, D., Simard, L., Smail, I., Small, T. A., Weiner, B. J., Willmer, C. N. A., Willner, S. P., Wilson, G., Wright, E. L., Yan, R., 2007, ApJ, 660L, 1

“*The Morphological Diversities among Star-Forming Galaxies at High Redshifts in the Great Observatories Origins Deep Survey*”, Ravindranath, S., Giavalisco, M., Ferguson, H. C., Conselice, C., Katz, N., Weinberg, M., **Lotz, J.**, Dickinson, M., Fall, S. M., Mobasher, B., Papovich, C., 2006, ApJ, 652, 963

“*Merging Galaxies in GOODS-S: First Extragalactic Results from Keck Laser Adaptive Optics*”, Melbourne, J., Wright, S. A., Barczys, M., Bouchez, A. H., Chin, J., van Dam, M. A., Hartman, S., Johansson, E., Koo, D. C., Lafon, R., Larkin, J., Le Mignant, D., **Lotz, J.**, Max, C. E., Pennington, D. M., Stomski, P. J., Summers, D., Wizinowich, P. L., 2005, ApJ, 625, L27

“*Star Clusters in Virgo and Fornax Dwarf Irregular Galaxies*”, Seth, A., Olsen, K., Miller, B., **Lotz, J.M.**, Telford, R., 2004, AJ, 127, 798

“*The Redshift Distribution of Near-Infrared-Selected Galaxies in the Great Observatories Origins Deep Survey as a Test of Galaxy Formation Scenarios*”, Somerville, R.S., Moustakas, L. A., Mobasher, B., Gardner, J. P., Cimatti, A., Conselice, C., Daddi, E., Dahlen, T., Dickinson, M., Eisenhardt, P., **Lotz, J.**, Papovich, C., Renzini, A., Stern, D., 2004, ApJ, 600L, 135

“*The $z \sim 4$ Lyman Break Galaxies: Colors and Theoretical Predictions*”, Idzi, R., Somerville, R., Papovich, C., Ferguson, H. C., Giavalisco, M., Kretchmer, C., **Lotz, J.**, 2004, ApJ, 600L, 115

“*Evolution in the Colors of Lyman Break Galaxies from $z \sim 4$ to $z \sim 3$* ”, Papovich, C., Dickinson, M., Ferguson, H. C., Giavalisco, M., **Lotz, J.**, Madau, P., et al., 2004, ApJ, 600L, 111

“*Metallicities of Old Open Clusters*”, Friel, E.D., Janes, K. A., Tavares, M., Scott, J., Katsanis, R., **Lotz, J.**, Hong, L., Miller, N., 2002, AJ, 124, 2693

“*The Nuclear Cusp Slopes of Dwarf Elliptical Galaxies*”, Stiavelli, M., Miller, B. W., Ferguson, H. C., Mack, J., Whitmore, B. C., **Lotz, J. M.**, 2001, AJ, 121, 1385

“*An Emission-Line Search for Star-forming Dwarf Galaxies toward Abell 851*”, Martin, C.L., **Lotz, J.M.**, Ferguson, H.C., 2000, ApJ, 543, 97

“*The Specific Globular Cluster Frequencies of Dwarf Elliptical Galaxies from HST*”, Miller, B.W., **Lotz, J.M.**, Ferguson, H.C., Stiavelli, M., Whitmore, B.C. 1998, ApJ, 508, 133

SELECTED CONFERENCE PRESENTATIONS

“*Galaxy Evolution with LSST*”, **Lotz, J.M.** & the LSST Galaxy Collaboration, BAAS, 2010

“*NIR Light Profiles of Elliptical Galaxies at $z \sim 1$* ”, Jones, E., & **Lotz, J.M.**, BAAS, 2010

“*Galaxy Mergers and Mass Assembly in LSST*”, Bridge, C., **Lotz, J. M.**, Armus, L., Ferguson, H. C., & LSST Galaxies Collaboration, 2009, BAAS, Vol. 41, p. 669

“*Investigating Galaxy Mergers Signatures with IGNITE*”, Zargusky, M. & **Lotz, J.M.**, 2009, BAAS, Vol. 41, p. 324

“*The Evolution of the Galaxy Merger Rate at $z < 1$* ”, **Lotz, J. M.**, 2007, At the Edge of the Universe: Latest Results from the Deepest Astronomical Surveys, ASP Conference Series, Vol. 380, p.467 (**invited review**)

“*A Bayesian Approach to Constraining Dwarf Galaxy Evolution*”, **Lotz, J.M.**, 2003, The Baryonic Universe, Aspen Winter Meeting, Aspen, CO

“*Colors of Dwarf Elliptical Globular Cluster Systems*”, Lotz, J., Miller, B., Ferguson, H.C., Stiavelli, M., Extragalactic Globular Cluster Systems:: Proceedings of the ESO Workshop, Garching, Germany, 27-30 August 2002, Edited by M. Kissler-Patig. Springer-Verlag, 2003, p. 211

“*Dynamical Friction in dE Globular Cluster Systems*”, **Lotz, J. M.**, Miller, B. W., Ferguson, H. C., Stiavelli, M., Telford, R., Extragalactic Star Clusters, IAU Symposium 207, Edited by D. Geisler, E.K. Grebel, and D. Minniti. San Francisco: Astronomical Society of the Pacific, 2002., p.593