Benjamin J. Weiner

Curriculum Vitae

Address

Steward Observatory
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Current Position

Sept. 2006 – present : Assistant Astronomer, Steward Observatory, MIPS Team:
Multiband Imaging Photometer for Spitzer, PI: George Rieke

Education

Ph.D. in Physics and Astronomy, Rutgers University, NJ, Jan. 1998.
Dissertation Topic: *The Dynamics of Barred Spiral Galaxies: Masses and Pattern Speeds*
(Supervisors: Dr. T.B. Williams, Dr. J.A. Sellwood).

B.A., Physics and English Literature, Swarthmore College, Swarthmore, PA, June 1989.

Research Interests

- Galaxy formation and evolution through observations of galaxy properties including star formation, luminosity, structure, kinematics, from local to redshift $z > 1$; redshift surveys
- Structure and dynamics of local galaxies: properties of dark matter halos; origin and evolution of bars and bulges in disk galaxies; photometric and kinematic observations, in optical and radio; computational simulations
- Infrared astronomy and optical spectroscopy
- The outer galaxy; gas in galactic halos, the Magellanic Stream, and high-velocity clouds; halo stellar populations
- Instrumentation, especially imaging spectroscopy, including Fabry-Perot and integral field techniques
- Computational fluid dynamics

Research Experience

2004 – 2006	Postdoctoral researcher, University of Maryland, Maryland-Magellan Tunable Filter project, PI: Dr. Sylvain Veilleux
2000 – 2004	Postdoctoral researcher, DEEP Project at UCO/Lick Observatory affiliated with the Deep Extragalactic Evolutionary Probe (DEEP) Project (http://deep.ucolick.org)
1998 – 2000	Barbara McClintock Fellow, Observatories of the Carnegie Institution of Washington.
1992 – 1997	Ph.D. research with Drs. T.B. Williams & J.A. Sellwood: *The Dynamics of Barred Spiral Galaxies: Masses and Pattern Speeds.*
1990 – 1991	research assistant, neurobiology, in lab of Dr. Peter Sterling, University of Pennsylvania School of Medicine

Teaching Experience

Teaching Assistant, Rutgers University, 1993–1994
Instructor for Introductory Physics Recitation (4 sections, ∼ 25 students each)
Instructor for Introductory Physics Lab (3 sections, ∼ 25 students each)
Astronomy Public Observing and Open Houses, Rutgers University, 1993–1997
Education and outreach – rooftop observing for intrductory classes and the public
Physics Laboratory Manager, Simmons College, Boston, MA, 1989–1990

Awards, Fellowships, and Professional Service

1998 – 2000 Barbara McClintock Postdoctoral Fellowship, OCIW.
1994 – 1996 Research Assistantship at Rutgers University.
1993 – 1994 Teaching Assistantship at Rutgers University.
1991 – 1993 U.S. Department of Education Fellowship, Rutgers University.
Member, American Astronomical Society
Phi Beta Kappa
Referee of articles for the *Astrophysical Journal Letters*, *Astrophysical Journal* and *Astronomy & Astrophysics*

Refereed Publications

B.J. Weiner et al. 2007, "AEGIS: Extinction and Star Formation Tracers from Line Emission," 2007, ApJL, 660, L39

S.A. Kassin, B.J. Weiner et al. 2007, "The Stellar Mass Tully-Fisher Relation to z = 1.2 from AEGIS," 2007, ApJL, 660, L35

L. Lin, D.C. Koo, B.J. Weiner et al. 2007, "AEGIS: Enhancement of Dust-enshrouded Star Formation in Close Galaxy Pairs and Merging Galaxies up to $z \sim 1$," 2007, ApJL, 660, L51

K.G. Noeske, B.J. Weiner et al. 2007, "Star Formation in AEGIS Field Galaxies since z=1.1: The Dominance of Gradually Declining Star Formation, and the Main Sequence of Star-forming Galaxies," 2007, ApJL 660, L47

K.G. Noeske, S.M. Faber, B.J. Weiner et al. 2007, "Star Formation in AEGIS Field Galaxies since z=1.1: Staged Galaxy Formation and a Model of Mass-dependent Gas Exhaustion," 2007, ApJL, 660, L43

C.J. Conselice et al. 2007, "AEGIS: The Diversity of Bright Near-IR-selected Distant Red Galaxies," 2007, ApJL, 660, L55

M. Davis et al. 2007, "The All-Wavelength Extended Groth Strip International Survey (AEGIS) Data Sets," 2007, ApJL, 660, L1

B.F. Gerke et al. 2007, "The DEEP2 Galaxy Redshift Survey: AEGIS Observations of a Dual AGN at z = 0.7," 2007, ApJL, 660, L23

C.M. Pierce et al. 2007, "AEGIS: Host Galaxy Morphologies of X-Ray-selected and Infrared-selected Active Galactic Nuclei at $0.2 < z < 1.2$," 2007, ApJL, 660, L19

E.N. Kirby et al. 2007, "The DEEP2 Galaxy Redshift Survey: Redshift Identification of Single-Line Emission Galaxies," 2007, ApJ, 660, 62

M.C. Cooper et al. 2007, "The DEEP2 galaxy redshift survey: evolution of the colour-density relation at $0.4 < z < 1.35$," 2007, MNRAS, 376, 1445

B.F. Gerke et al. 2007, "The DEEP2 galaxy redshift survey: the evolution of the blue fraction in groups and the field," 2007, MNRAS, 376, 1425

B.J. Weiner et al. 2006, "A Survey of Galaxy Kinematics to $z \sim 1$ in the TKRS/GOODS-N Field. I. Rotation and Dispersion Properties," 2006, ApJ, 653, 1027

B.J. Weiner et al. 2006, "A Survey of Galaxy Kinematics to $z \sim 1$ in the TKRS/GOODS-N Field. II. Evolution in the Tully-Fisher Relation," 2006, ApJ, 653, 1049

R.P. Schiavon et al. 2006, "The DEEP2 Galaxy Redshift Survey: Mean Ages and Metallicities of Red Field Galaxies at $z \sim 0.9$ from Stacked Keck DEIMOS Spectra," 2006, ApJL, 651, L93

J.J. Harker, R.P. Schiavon, B.J. Weiner, S.M. Faber, 2006, "Population Synthesis Models for Late Buildup of the Red Sequence," ApJL, 647, L103

C.N.A. Willmer et al. (DEEP2 Team). 2006, "The DEEP2 Redshift Survey: The Galaxy Luminosity Function to $z \sim 1$," ApJ, 647, 853

S.A. Kassin, R.S. de Jong, B.J. Weiner. 2006, "Dark and Baryonic Matter in Bright Spiral Galaxies," ApJ, 643, 804

J.X. Prochaska, B.J. Weiner, H.-W. Chen, J.S. Mulchaey. 2006, "Probing the Intergalactic Medium-Galaxy Connection toward PKS 0405-123. III. The Galaxy Survey and Correlations with O VI Absorbers," ApJ, 643, 680

K. Bundy et al. 2006, "The Mass Assembly History of Field Galaxies: Detection of an Evolving Mass Limit for Star Forming Galaxies," ApJ, 651, 120

M.C. Cooper et al. 2006, "The DEEP2 Galaxy Redshift Survey: The Relationship Between Galaxy Properties and Environment at $z \sim 1$," MNRAS, 370, 198

J.M. Lotz et al. 2006, "The Evolution of Galaxy Mergers and Morphology at $z < 1.2$ in the Extended Groth Strip," ApJ submitted, astro-ph/0602088

S.M. Faber et al. (DEEP2 Team). 2005, "Galaxy Luminosity Functions to $z \sim 1$: DEEP2 vs. COMBO-17 and Implications for Red Galaxy Formation," ApJ in press, astro-ph/0506044

H.-W. Chen, J.X. Prochaska, B.J. Weiner, J.S. Mulchaey, G.M. Williger. 2005, "Probing the Intergalactic Medium-Galaxy Connection toward PKS 0405-123. II. A Cross-Correlation Study of Lyα Absorbers and Galaxies at $z < 0.5$," ApJ, 629, L25

N.P. Vogt et al. (DEEP1 Team). 2005, "The DEEP Groth Strip Survey. I. The Sample," ApJS, 159, 41

B.F. Gerke et al. (DEEP2 Team). 2005, "The DEEP2 Galaxy Redshift Survey: First Results on Galaxy Groups," ApJ, 625, 6

B.J. Weiner et al. (DEEP1 Team). 2005, "The DEEP Groth Strip Galaxy Redshift Survey. III. Redshift Catalog and Properties of Galaxies," ApJ, 620, 595

D.C. Koo et al. (DEEP1 Team). 2005, "The DEEP Groth Strip Galaxy Redshift Survey. VIII. The Evolution of Luminous Field Bulges at Redshift $z \sim 1$," ApJS, 157, 175

J.X. Prochaska, H.-W. Chen, J.C. Howk, B.J. Weiner, J.S. Mulchaey. 2004, "Probing the IGM/Galaxy Connection Toward PKS0405-123. I: UV Spectroscopy and Metal-Line Systems," ApJ, 617, 718

A.L. Coil et al. (DEEP2 Team). 2003, "The DEEP2 Galaxy Redshift Survey: Clustering of Galaxies in Early Data," ApJ 609, 525

H.A. Kobulnicky, C.N.A. Willmer, A.C. Phillips, D.C. Koo, S.M. Faber, B.J. Weiner, V.L. Sarajedini, L. Simard & N.P. Vogt. 2003, "The DEEP Groth Strip Survey VII: The Metallicity of Field Galaxies at $0.26 < z < 0.82$ and the Evolution of the Luminosity-Metallicity Relation," ApJ, 599, 1006

D.S. Madgwick et al. (DEEP2 Team). 2003, "The DEEP2 Galaxy Redshift Survey: Spectral classification of galaxies at $z \sim 1$," ApJ, 599, 997

K. Gebhardt et al. (DEEP1 Team). 2003, "The DEEP Groth Strip Survey IX: Evolution of the Fundamental Plane of Field Galaxies," ApJ, 597, 239

L. Simard, C.N.A. Willmer, N.P. Vogt, V.L. Sarajedini, A.C. Phillips, B.J. Weiner, D.C. Koo, M. Im, G.D. Illingworth, & S.M. Faber. 2002, "The DEEP Groth Strip Survey. II. HST Structural Parameters of Galaxies in the Groth Strip," ApJS, 142, 1

B.J. Weiner, T.B. Williams, J.H. van Gorkom, & J.A. Sellwood. 2001, "The Disk and Dark Halo Mass of the Barred Galaxy NGC 4123. I. Observations," ApJ, 546, 916

B.J. Weiner, J.A. Sellwood, & T.B. Williams. 2001, "The Disk and Dark Halo Mass of the Barred Galaxy NGC 4123. II. Fluid-Dynamical Models," ApJ, 546, 931

B.J. Weiner & J.A. Sellwood. 1999, "The Properties of the Galactic Bar Implied by Gas Kinematics in the Inner Milky Way," ApJ, 524, 112

B.J. Weiner & T.B. Williams. 1996, "Hα Emission from the Magellanic Stream: Evidence for an Extended Gaseous Galactic Halo," AJ, 111, 1156

Selected Non-Refereed Publications

B.J. Weiner. 2003, "The dark matter density problem in massive disk galaxies," in *Dark Matter in Galaxies*, ed. S. Ryder et al., IAU Symposium 220, astro-ph/0310666

B.J. Weiner & the DEEP Collaboration. 2003, "Evolution in the linewidth-magnitude relation to $z > 1$ from the DEEP Groth Strip survey," in *The Mass of Galaxies at Low and High Redshift*, ed. R. Bender & A. Renzini, (Berlin: Springer-Verlag), 224

B.J. Weiner. 2003, "H-alpha emission from HVCs and ionization sources in the Galactic halo," in *The IGM-Galaxy Connection*, ed. J.L. Rosenberg & M.E. Putman, (Dordrecht: Kluwer), 163

M. Davis et al. (DEEP2 Team). 2003, "Science Objectives and Early Results of the DEEP2 Redshift Survey," Proc. SPIE, 4834, 161

B.J. Weiner, S.N. Vogel, & T.B. Williams. 2001, "Optical emission from high velocity clouds and the ionization sources in the Galactic halo," in *Extragalactic Gas at Low Redshift*, ed. J. Mulchaey & J. Stocke, ASP Conference Series, v. 254 (San Francisco: A.S.P.), 256

B.J. Weiner, S.N. Vogel, & T.B. Williams. 2001, "Distance Constraints for High-Velocity Clouds from Optical Emission Lines," in *Gas and Galaxy Evolution*, ed. J. Hibbard, M. Rupen, & J. van Gorkom, ASP Conference Series, v. 240 (San Francisco: A.S.P.), 515

Recent Projects

B.J. Weiner, S.N. Vogel, & T.B. Williams. "Optical Line Emission from High Velocity Clouds: Distance Limits and the Nature of HVCs," in preparation.

Invited Talks

Carnegie Observatories, 1998
Caltech, 1999
UC San Diego, 1999
Carnegie Observatories, 1999
UC Santa Cruz, 1999
IPAC/Caltech, 2001
UC Davis, 2003
Dominion Astrophysical Observatory, BC, Canada, 2004
UC Santa Cruz, 2004
University of Virginia, 2004
Rutgers University, 2005
University of Maryland, 2005

Conference Presentations

"Barred Galaxies," IAU Colloquium 157, Tuscaloosa, AL, May 1995
American Astronomical Society meeting, Toronto, Jan. 1997
"Cosmological Implications of the Local Group," Aspen Winter Conference, Jan. 1999
"Disk Galaxies," Max-Planck Institut für Astronomie, Heidelberg, Oct. 1999
American Astronomical Society meeting, Atlanta, Jan. 2000
"Gas and Galaxy Evolution," VLA 20th Anniversary Conference, Socorro, NM, May 2000
"Extragalactic Gas at Low Redshift," OCIW, Pasadena, CA, Apr. 2001
American Astronomical Society meeting, Pasadena, June 2001
Keck Science Meeting, Caltech, Pasadena, Oct. 2001
"The Mass of Galaxies at Low and High Redshift," ESO Workshop, Venice, Oct. 2001
"The IGM-Galaxy Connection," Boulder, CO, Aug. 2002
"The Baryonic Universe," Aspen Winter Conference, Jan. 2003
"Dark Matter Core Densities in Disk Galaxies," IAU Symp. 220, Dark Matter in Galaxies, Sydney, Australia, July 2003
"The Large-scale Distribution of Mass and Light in the Universe," Aspen Winter Conference, Jan. 2004
"Dynamics of Galaxies: Baryons and Dark Matter," UNLV, Mar. 2005

"The role of wide and deep multi-wavelength surveys," Ringberg, Germany, Mar. 2005

Observing and Projects

Principal Investigator of successful proposals at:

Cerro Tololo Interamerican Observatory 4-meter, 1.5-m, 0.9-m telescopes
Gemini North 8-m
Las Campanas Observatory 2.5-m, 1-m
Palomar Observatory 1.5-m
NRAO Very Large Array
XMM-Newton, ESA's X-ray satellite observatory

Co-I on successful proposals at Keck 10-m, Las Campanas, Subaru, the VLA, and NASA's FUSE satellite (Far Ultraviolet Spectroscopic Explorer).

Co-I on HST/ACS Large project, Extended Groth Strip imaging survey, PI: Marc Davis

Co-I on HST/NICMOS project, Kinematics and morphology of the most massive field disk galaxies at $z > 1$, PI: Kai Noeske

Observing experience at Keck 10-m; Magellan 6.5-m; MMT 6.5-m; Las Campanas 1-m, 2.5-m; CTIO 0.9-m, 1.5-m, 4-m; Palomar 1.5-m; NRAO VLA telescopes

Collaborators: H.-W. Chen (Chicago), M. Davis (Berkeley), S.M. Faber (UCO/Lick), P. Guhathakurta (UCO/Lick), S.A. Kassin (UCO/Lick), D.C. Koo (UCO/Lick), J.S. Mulchaey (OCIW), K. Noeske (UCO/Lick), C. Papovich (Arizona), A.C. Phillips (UCO/Lick), J.X. Prochaska (UCO/Lick), J.A. Sellwood (Rutgers), J.H. van Gorkom (Columbia), S. Veilleux (Maryland), S.N. Vogel (Maryland), T.B. Williams (Rutgers), C.N.A. Willmer (Arizona)

Collaborator on successful NSF Advanced Technologies in Instrumentation proposal for a Fabry-Perot/tunable filter system for the Magellan 6.5-meter telescope, PI Sylvain Veilleux (Maryland)

External Funding

PI, XMM project "X-ray halos of giant low surface brightness galaxies." NASA NAG5-10053

Co-I, FUSE project "Physical Properties of a $z < 1$ Lyman Limit System," PI J.X. Prochaska. NASA NAG5-10683

References

Dr. Sylvain Veilleux, Department of Astronomy, University of Maryland, College Park, MD 20742
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Dr. Stuart N. Vogel, Department of Astronomy, University of Maryland, College Park, MD 20742
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Dr. George H. Rieke, Department of Astronomy, University of Arizona, 933 N. Cherry St., Tucson, AZ 85721
Phone: 520–621–2832 email: `grieke@as.arizona.edu`

Dr. Sandra M. Faber, UCO/Lick Observatory, UC Santa Cruz, 1156 High St., Santa Cruz, CA 95064
Phone: 831–459–2944 email: `faber@ucolick.org`

Dr. Jerry A. Sellwood, Department of Physics & Astronomy, Rutgers University, P.O. Box 849, Piscataway, NJ 08855–0849
Phone: 732–445–5287 email: `sellwood@physics.rutgers.edu`