

CURRICULUM VITAE

Stacy S. McGaugh

Department of Astronomy
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Education

| | | | |
|---------------------------------------|------------|-----------|-------------|
| University of Michigan | Ph.D. 1992 | Astronomy | 1987 – 1992 |
| Princeton University | | Physics | 1985 – 1986 |
| Massachusetts Institute of Technology | S.B. 1985 | Physics | 1981 – 1985 |

Awards

Adjunct Professor, Case Western Reserve University, 2009 —
Distinguished Fellow, Flint Northern Alumni Association, 2001
Society of $\Sigma\Xi$ Thesis Award, 1991

Employment

| | | |
|---------------------|---|-------------|
| Professor | Department of Astronomy University of Maryland | 2009 – |
| Associate Professor | Department of Astronomy University of Maryland | 2003 – 2009 |
| Assistant Professor | Department of Astronomy University of Maryland | 1998 – 2003 |
| Research Fellow | Department of Physics and Astronomy Rutgers University | 1997 – 1998 |
| Carnegie Fellow | Department of Terrestrial Magnetism Carnegie Institution of Washington | 1995 – 1997 |
| Research Associate | Institute of Astronomy University of Cambridge | 1992 – 1995 |

Research Interests

Low Surface Brightness Galaxies; Galaxy Formation and Evolution
Cosmology, Dark Matter, and Modified Gravity

Professional Societies — IAU, AAS, DDA (DDA Committee 2007 – 2009), $\Sigma\Xi$

Publications in Refereed Journals

“A First Attempt to Calibrate the Baryonic Tully-Fisher Relation with Gas-Dominated Galaxies”

Stark, D.V., McGaugh, S.S., & Swaters, R.A., *AJ*, **138**, 392–141

“Chandra Observations of Nuclear X-ray Emission from Low Surface Brightness Galaxies”

Das., M., Reynolds, C.S., Vogel, S.N., McGaugh, S.S., & Kantharia, N.G., *ApJ*, **693**, 1300–1305

“Constraining the NFW Potential with Observations and Modeling of LSB Galaxy Velocity Fields”

Kuzio de Naray, R., McGaugh, S.S., & Mihos, J.C., *ApJ*, **692**, 1321–1332

“VIMOS-VLT Integral field kinematics of the Giant LSB galaxy ESO 0323-G064”

Cocato, L., Swaters, R.A., Rubin, V.C., D’Odorico, S., & McGaugh, S.S., *A&A*, **490**, 589–600

“Milky Way Mass Models and MOND”

McGaugh, S.S. 2008, *ApJ*, **683**, 137–148

“Mass Models of Low Surface Brightness Galaxies with High Resolution Optical Velocity Fields”

Kuzio de Naray, R., McGaugh, S.S., & de Blok, W.J.G. 2008, *ApJ*, **676**, 920–943

“The Collision Velocity of the Bullet Cluster in Conventional and Modified Dynamics”

Angus, G.W., & McGaugh, S.S. 2008, *MNRAS*, **383**, 417–423

“The AGN and Gas Disk in the Low Surface Brightness Galaxy PGC045080”

Das, M., Kantharia, N., Ramya, S., Prabhu, T.P., McGaugh, S.S., & Vogel, S.N. 2007, *MNRAS*, **379**, 11–20

“The Rotation Velocity Attributable to Dark Matter at Intermediate Radii in Disk Galaxies”

McGaugh, S.S., de Blok, W.J.G., Schombert, J.S., Kuzio de Naray, R., & Kim, J.H. 2007, *ApJ*, **659**, 149–161

“CO Detection and Millimeter Continuum Emission from Low Surface Brightness Galaxies”

Das, M., O’Neil, K., Vogel, S.N., & McGaugh, S.S. 2006, *ApJ*, **651**, 853–860

- “High Resolution Optical Velocity Fields of 11 Low Surface Brightness Galaxies”
Kuzio de Naray, R., McGaugh, S.S., de Blok, W.J.G., & Bosma, A. 2006, *ApJS*, **165**, 461–479
- “The Compression of Dark Matter Halos by Baryonic Infall”
Sellwood, J.A., & McGaugh, S.S. 2005, *ApJ*, **634**, 70–76
- “The Balance of Dark and Luminous Mass in Rotating Galaxies”
McGaugh, S.S. 2005, *Phys. Rev. Lett.*, **95**, 171302
- “The Baryonic Tully-Fisher Relation of Galaxies with Extended Rotation Curves and the Stellar Mass of Rotating Galaxies”
McGaugh, S.S. 2005, *ApJ*, **632**, 859–871
- “The Baryonic Tully Fisher Relation”
Gurovich, S., McGaugh, S.S., Freeman, K.C., Jerjen, H. Staveley-Smith, L., de Blok, W.J.G. 2004, *PASA*, **21**, 412–414
- “Oxygen Abundances and Chemical Evolution in Low Surface Brightness Galaxies”
Kuzio de Naray, R., McGaugh, S.S., & de Blok, W.J.G. 2004, *MNRAS*, **355**, 887–898
- “Confrontation of MOND Predictions with WMAP First Year Data”
McGaugh, S.S. 2004, *ApJ*, **611**, 26–39
- “The Acceleration Scale in Disk Galaxy Dynamics: Disk Mass and the Dark Matter Distribution”
McGaugh, S.S. 2004, *ApJ*, **609**, 652–666
- “Simulating Observations of Dark Matter Dominated Galaxies: Towards the Optimal Halo Profile”
de Blok, W.J.G., Bosma, A., & McGaugh, S.S. 2003, *MNRAS*, **340**, 657–678
- “A Limit on the Cosmological Mass Density and Power Spectrum from the Rotation Curves of Low Surface Brightness Galaxies”
McGaugh, S.S., Barker, M.K., & de Blok, W.J.G. 2003, *ApJ*, **584**, 566–576
- “Modified Newtonian Dynamics as an Alternative to Dark Matter”
Sanders, R.H., & McGaugh, S.S. 2002, *ARA&A*, **40**, 263–317
- “High-Resolution Rotation Curves of Low Surface Brightness Galaxies: Mass Models”
de Blok, W.J.G., McGaugh, S.S., & Rubin, V.C. 2001, *AJ*, **122**, 2396–2428

- “High-Resolution Rotation Curves of Low Surface Brightness Galaxies: Data”
McGaugh, S.S., Rubin, V.C., & de Blok, W.J.G. 2001, *AJ*, **122**, 2381–2395
- “Mass Density Profiles of LSB Galaxies”
de Blok, W.J.G., McGaugh, S.S., Bosma, A., & Rubin, V.C. 2001, *ApJ*, **552**, L23–L26
- “Gas Mass Fractions and the Evolution of LSB Dwarf Galaxies”
Schombert, J.M., McGaugh, S.S., & Eder, J.A. 2001, *AJ*, **121**, 2420–2430
- “BOOMERanG Data Suggest a Purely Baryonic Universe”
McGaugh, S.S. 2000, *ApJ*, **541**, L33–36
- “The Baryonic Tully-Fisher Relation”
McGaugh, S.S., Schombert, J.M., Bothun, G.D., & de Blok, W.J.G. 2000, *ApJ*, **533**, L99–L102
- “Star Formation and Tidal Encounters with the Low Surface Brightness Galaxy UGC 12695 and Companions”
O’Neil, K., Verheijen, M.A.W., & McGaugh, S.S. 2000, *AJ*, **119**, 2154–2165
- “Distinguishing Between CDM and MOND: Predictions for the Microwave Background”
McGaugh, S.S. 1999, *ApJ*, **523**, L99–L102
- “The Molecular ISM in Low Surface Brightness Disk Galaxies”
Mihos, J.C., Spaans, M., & McGaugh, S.S. 1999, *ApJ*, **515**, 89–96
- “HST WFPC-2 Imaging of UGC 12695: A Remarkably Unevolved Galaxy at Low Redshift”
O’Neil, K., Bothun, G. D., Impey, C. D., & McGaugh, S. 1998, *AJ*, **116**, 657–672
- “Testing Modified Newtonian Dynamics with Low Surface Brightness Galaxies — Rotation Curve Fits”
de Blok, W. J. G., & McGaugh, S. S. 1998, *ApJ*, **508**, 132–140
- “Testing the Hypothesis of Modified Dynamics with Low Surface Brightness Galaxies and Other Evidence”
McGaugh, S. S., & de Blok, W. J. G. 1998, *ApJ*, **499**, 66–81
- “Testing the Dark Matter Hypothesis with Low Surface Brightness Galaxies and Other Evidence”
McGaugh, S. S., & de Blok, W. J. G. 1998, *ApJ*, **499**, 41–65

- “The Dark and Baryonic Matter Content of Low Surface Brightness Galaxies”
de Blok, W. J. G., & McGaugh, S. S. 1997, *MNRAS*, **290**, 533–552
- “Low-Surface-Brightness Galaxies: Hidden Galaxies Revealed”
Bothun, G., Impey, C., & McGaugh, S. 1997, *PASP*, **109**, 745–758
- “Gas Mass Fractions and the Evolution of Spiral Galaxies”
McGaugh, S. S., & de Blok, W. J. G. 1997, *ApJ*, **481**, 689–702
- “Dynamical Stability and Environmental Influences in Low Surface Brightness Disk Galaxies”
Mihos, J. C., McGaugh, S. S., & de Blok, W. J. G. 1997, *ApJ*, **477**, L79–L83
- “HI Observations of Low Surface Brightness Galaxies: Probing Low Density Galaxies”
de Blok, W. J. G., McGaugh, S. S., & van der Hulst, J. M. 1996, *MNRAS*, **283**, 18–54
- “Could a Local Group X-ray Halo Affect the X-ray and Microwave Backgrounds?”
Pildis, R. A., & McGaugh, S. S. 1996, *ApJ*, **470**, L77–L79
- “Does Low Surface Brightness Mean Low Density?”
de Blok, W. J. G., & McGaugh, S. S. 1996, *ApJ*, **469**, L89–L92
- “Cosmological Constant”
McGaugh, S. S. 1996, *Nature*, **381**, 483
- “The Number, Luminosity, and Mass Density of Spiral Galaxies as a Function of Surface Brightness”
McGaugh, S. S. 1996, *MNRAS*, **280**, 337–354
- “Galaxy Selection and the Surface Brightness Distribution”
McGaugh, S. S., Bothun, G. D., & Schombert, J. M. 1995, *AJ*, **110**, 573–580
- “The Morphology of Low Surface Brightness Disk Galaxies”
McGaugh, S. S., Schombert, J. M., & Bothun, G. D. 1995, *AJ*, **109**, 2019–2033
- “The Tully-Fisher Relation for Low Surface Brightness Galaxies — Implications for Galaxy Evolution”
Zwaan, M. A., van der Hulst, J. M., de Blok, W. J. G., & McGaugh, S. S. 1995, *MNRAS*, **273**, L35–L38
- “The Contribution of Low Surface Brightness Galaxies to Faint Galaxy Number Counts”
Ferguson, H. C., & McGaugh, S. S. 1995, *ApJ*, **440**, 470–484

- “Oxygen Abundances in Low Surface Brightness Disk Galaxies”
McGaugh, S. S. 1994, *ApJ*, **426**, 135–149
- “Spatial Distribution of Low Surface Brightness Galaxies”
Mo, H. J., McGaugh, S. S., & Bothun, G. D. 1994, *MNRAS*, **267**, 129–140
- “A Possible Local Counterpart to the Excess Population of Faint Blue Galaxies”
McGaugh, S. S. 1994, *Nature*, **367**, 538–541
- “Structural Characteristics and Stellar Composition of Low Surface Brightness Disk Galaxies”
McGaugh, S. S., & Bothun, G. D. 1994, *AJ*, **107**, 530–542
- “Star Formation Thresholds in Low Surface Brightness Galaxies”
van der Hulst, J. M., Skillman, E. D., Smith, T. R., Bothun, G. D., McGaugh, S. S., & de Blok, W. J. G. 1993, *AJ*, **106**, 548–559
- “The Small Scale Environment of Low Surface Brightness Disk Galaxies”
Bothun, G. D., Schombert, J. M., Impey, C. D., Sprayberry, D., & McGaugh, S. S. 1993, *AJ*, **106**, 530–547
- “A Catalog of Low Surface Brightness Galaxies: List II”
Schombert, J. M., Bothun, G. D., Schneider, S. E., & McGaugh, S. S. 1992, *AJ*, **103**, 1107–1133
- “HII Region Abundances: Model Oxygen Line Ratios”
McGaugh, S. S. 1991, *ApJ*, **380**, 140–150
- “Stellar Populations in Shell Galaxies”
McGaugh, S. S., & Bothun, G. D. 1990, *AJ*, **100**, 1073–1085
- “The Geometry, Composition, and Mass of the Crab Nebula”
MacAlpine, G. M., McGaugh, S. S., Mazzarella, J. M., & Uomoto, A. 1989, *ApJ*, **342**, 364–378
- “An Investigation of the Efficiencies of Various Buffer Gases in Na-Xe Spin Exchange”
McGaugh, S. S., Musolf, M., Wu, Z., & Happer, W. 1987, *Physics Letters A*, **120**, 124–128

Other Publications

- “VLT/VIMOS Integral field kinematics of the Giant Low Surface Brightness galaxy ESO 323-G064”
Coccatto, L., Swaters, R., Rubin, V.C., D’Odorico, S., & McGaugh, S.S. 2007, *Formation and Evolution of Galaxy Disks*, in press
- “Radio Observations of the AGN and Gas in Low Surface Brightness Galaxies”
Das, M., O’Neil, K., Kantharia, N., Vogel, S.N., & McGaugh, S.S. 2006, *IAU Symposium #235: Galaxy Evolution across the Hubble Time*, in press
- “Some Systematic Properties of Rotation Curves”
McGaugh, S.S. 2005, *Mass Profiles and Shapes of Cosmological Structures*, eds. G. A. Mamon, F. Combes, C. Deffayet, B. Fort, (EDP Sciences), 69 – 76
- “Two Dimensional Velocity Fields of Low Surface Brightness Galaxies”
Kuzio de Naray, R., McGaugh, S.S., de Blok, W.J.G., & Bosma, A. 2005, *Mass Profiles and Shapes of Cosmological Structures*, eds. G. Mamon, F. Combes, C. Deffayet, B. Fort (EDP Sciences), 285 – 286
- “Galaxy Masses: Disks and Their Halos”
McGaugh, S. S. 2003, *The Mass of Galaxies at Low and High Redshift*, ed. R. Bender and A. Renzini, 45 – 50
- “Constraints on the Radial Mass Distribution of Dark Matter Halos from Rotation Curves”
McGaugh, S. S. 2002, *The Shapes of Galaxies and their Dark Halos*, ed. P. Natarajan (New Haven: World Scientific), 186 – 193
- “Galaxy Dynamics and the Second Peak: Cold Dark Matter?”
McGaugh, S. S. 2001, *International Journal of Modern Physics A*, 16, 1031 – 1033
- “Baryonic Tully-Fisher Relations”
McGaugh, S. S. 2001, *Galaxy Disks and Disk Galaxies*, eds. J. G. Funes & E. M. Corsini, ASP 230, 541 – 544
- “Modified Newtonian Dynamics”
McGaugh, S. S. & Schulman, E. 2000, *Mercury*, **29**(2), 8
- “Dynamical Constraints on Disk Galaxy Formation”
McGaugh, S. S. 2000, *Galaxy Dynamics: from the Early Universe to the Present*, eds. F. Combes, G. A. Mamon, & V. Charmandaris, ASP 197, 153 – 160
- “How Galaxies Don’t Form”
McGaugh, S. S. 1999, *Galaxy Dynamics*, eds. D. Merritt & J. Sellwood, ASP 182, 528 – 538

“Optical Galaxy Selection”

McGaugh, S. S. 1999, *IAU Colloquium # 171: The Low Surface Brightness Universe*, ed. J. I. Davies, C. Impey, & S. Phillipps, ASP 170, 19 – 26

“Some Early Universe Predictions of Simple Modified Dynamics”

McGaugh, S. S. 1998, *After the Dark Ages: When Galaxies Were Young (the Universe at $2 < z < 5$)*, eds. S. S. Holt & E. P. Smith, AIP 470, 72 – 75

“The Baryon Fraction Distribution and the Tully-Fisher Relation”

McGaugh, S. S., & de Blok, W. J. G. 1998, *Galactic Halos*, ed. D. Zaritsky, ASP 136, 210 – 212

“Gas Content and Star Formation Thresholds in the Evolution of Spiral Galaxies”

McGaugh, S. S., & de Blok, W. J. G. 1997, *Star Formation, Near and Far*, eds. S. S. Holt & L. G. Mundy, AIP 393, 510 – 513

“Dynamical Stability and Galaxy Evolution in LSB Disk Galaxies”

Mihos, J. C., McGaugh, S. S., & de Blok, W. J. G. 1997, *Star Formation, Near and Far*, eds. S. S. Holt & L. G. Mundy, AIP 393, 311 – 314

“Dark Matter in Low Surface Brightness Galaxies”

de Blok, W. J. G., & McGaugh, S. S. 1997, *Dark Matter in Galaxies and Cosmological Implications*, eds. P. Salucci & M. Persic, 39 – 46

“An Analysis of the Evolutionary State of SNR G299.2 - 2.9”

Wright, J. T., Slane, P., Vancura, O., Plucinsky, P., Smith, C., & McGaugh, S. 1997, *AAS*, **191**, 4004

“Reverse Baryon Catastrophe in Extremely Dark Matter Dominated Galaxies”

McGaugh, S. S., de Blok, W. J. G., & van der Hulst, J. M. 1996, *BAAS*, **28**, 1387

“The Properties and Evolution of Low Surface Brightness Disk Galaxies”

de Blok, W. J. G., van der Hulst, J. M. & McGaugh, S. S. 1996, *BAAS*, **28**, 1387

“Dwarf and Low Surface Brightness Galaxies”

McGaugh, S. S. 1996, *IAU Symposium # 171: New Light on Galaxy Evolution* eds. R. Bender & R. L. Davies, (Dordrecht: Kluwer), 97–104

“Properties of Low Surface Brightness Galaxies”

W. J. G. de Blok, J. M. van der Hulst, S. S. McGaugh 1996, *IAU Symposium # 171: New Light on Galaxy Evolution* eds. R. Bender & R. L. Davies, (Dordrecht: Kluwer), 35

“Gravitational Dynamics: Universal Twists”

McGaugh, S. S. 1995, *Nature*, **377**, 386

“The Contribution of Low Surface Brightness Galaxies to Faint Galaxy Number Counts”

Ferguson, H. C. & McGaugh, S. S. 1994: Baltimore, STScI
Quantifying Galaxy Morphology at High Redshift

<http://stsci.edu/meetings/galaxy-morphology/proceedings/posters.html>

“The Contribution of Low Surface Brightness Galaxies to Faint Galaxy Number Counts”

Ferguson, H. C. & McGaugh, S. S. 1993, *BAAS*, **25**, 1398

“Number Density of Low Surface Brightness Galaxies”

McGaugh, S. S. 1993, *BAAS*, **25**, 1384

“Chemical abundances in low surface brightness galaxies: Implications for their evolution”

McGaugh, S. S., & Bothun, G. D. 1993, *The Evolution of Galaxies and Their Environment*, 88–89

“Low Surface Brightness Galaxies”

van der Hulst, J. M., de Blok, W. J. G., McGaugh, S. S., & Bothun, G. D. 1993, *The Evolution of Galaxies and Their Environment*, 92–93

“Low Surface Brightness Galaxies”

McGaugh, S. S., Bothun, G. D., van der Hulst, J. M., & Schombert, J. M. 1991, *BAAS*, **23**, 1444

“Understanding the HII Region Oxygen Abundance Sequence”

McGaugh, S. S. 1990, *BAAS*, **22**, 1268

“The Geometry, Composition, and Mass of the Crab Nebula”

McGaugh, S., MacAlpine, G., Lawrence, S., & Uomoto, A. 1989, *BAAS*, **21**, 750

“A Preliminary Examination of Redshift and Luminosity Characteristics for APM Survey Quasars”

MacAlpine, G. M., McGaugh, S. S., Anderson, S., Weymann, R., Turnshek, D., Hewett, P., Chaffee, F., & Foltz, C. 1989

Proceedings of a Workshop on Optical Surveys for Quasars, 107–111

Also in *Active Galactic Nuclei*, 418–423

Invited Conference Presentations

“Baryonic Masses from Rotation Curves”

06/19/09, Queens University, Kingston, Ontario: *Unveiling the Mass — Extracting and Interpreting Galaxy Masses*

“Astronomical and Experimental tests of MOND”

05/20/09, Case Western Reserve University, Cleveland: *Workshop on Tests of Gravity and Gravitational Physics*

“Systematic Properties of Galaxy Dynamics”

04/02/09, University of Maryland: *Shedding Light on Dark Matter*

“The Baryonic and Dark Matter Distribution of the Milky Way”
and “The Cusp-Core Problem”

03/12/09, Case Western Reserve University, Cleveland: *Detecting Dark Matter in the Milky Way*

“Scaling Relations in Dim Galaxies: from the Big and Bright to the Faintest of the Tiny”

08/27/07, University of Michigan, Ann Arbor: *The Globular Clusters — Dwarf Galaxies Connection*

“The Halo by Halo Missing Baryon Problem”

06/27/07, Cardiff: *IAU 244, Dark Galaxies & Lost Baryons*

“The Connection Between Dark and Luminous Matter”

03/22/07, UC Irvine: *Astrophysical Probes of the Nature of Dark Matter*

“Balance of Dark and Luminous Mass in Rotating Galaxies”

10/05/06, Kavli Institute of Theoretical Physics, University of California, Santa Barbara: *Applications Of Gravitational Lensing: Unique Insights Into Galaxy Formation And Evolution*

“Empirical Constraints on Halo Profiles from Rotation Curves”

05/19/06, Las Cruces, New Mexico: *Galaxies in the Cosmic Web*

“Observational Constraints on the Acceleration Discrepancy Problem”

04/20/06, Royal Observatory, Edinburgh: *Alternative Gravities & Dark Matter Workshop*

“Mass discrepancies in the Universe: missing mass or new physics?”

10/01/05, University of Michigan: *Dark Matter in the Universe*

- “Constraints on the mass profiles of spiral galaxies”
07/05/05, Institut d’Astrophysique de Paris: *Mass Profiles and Shapes of Cosmological Structures*
- “Luminous and Dark Mass in Spiral Galaxies”
06/28/05, Ascona, Switzerland: *The Formation of Disk Galaxies*
- “Mass Distributions from Rotation Curves”
06/10/04, Hebrew University: *Galaxy Formation Workshop*
- “Dark Matter Halo Concentrations”
06/08/04, Hebrew University: *Galaxy Formation Workshop*
- “Are Cuspy Halos Viable?”
2002, U. Chicago: *Predictions of Cold Dark Matter Models on Small Scales: Current and Future Tests*
- “The Dynamics of Low Surface Brightness Galaxies”
2002, Washington, DC: *Galaxies: Mind Over Matter*
- “Galaxy Masses: Disks and Their Halos”
2001, Venice: *The Mass of Galaxies at Low and High Redshift*
- “LSB Galaxy Rotation Curves as Tests of CDM & MOND”
2001, IAS: *Galaxies and the Dark Matter Problem*
- “Constraints on the Radial Mass Distribution of Dark Matter Halos from Rotation Curves.”
2001, Yale: *The Shapes of Galaxies and Their Halos*
- “Galaxy Dynamics and the Second Peak: Cold Dark Matter?”
2000, Columbus: Division of Particles & Fields
- “Baryonic Tully-Fisher Relations”
2000, Vatican Observatory: *Galaxy Disks and Disk Galaxies*
- “Dynamical Constraints on Disk Galaxy Formation”
1999, IAP XV: *Galaxy Dynamics: from the Early Universe to the Present*
- “How Galaxies Don’t Form”
1998, Rutgers: *Galaxy Dynamics*

“Optical Galaxy Selection”

1998, Cardiff: IAU Colloquium 171: *The Low Surface Brightness Universe*

“Testing the Modified Dynamics with Low Surface Brightness Galaxies”

1997, Kapteyn Astronomical Institute: *Low Surface Brightness Galaxy Workshop*

“Kinematics of Low Surface Brightness Galaxies”

1997, STScI: *Galaxy Journal Club series on Low Surface Brightness Galaxies*

“Low Surface Brightness Galaxies”

1996, STScI: *The Evolution of Low Luminosity Galaxies & Faint Blue Galaxies*

“Dwarf and Low Surface Brightness Galaxies”

1996, Heidelberg: IAU Symposium 171: *New Light on Galaxy Evolution*

“The Number Density of Low Surface Brightness Galaxies”

1994, STScI: *Quantifying Galaxy Morphology at High Redshift*

<http://www.stsci.edu/meetings/galaxy-morphology/proceedings/proceedings.html>

“Local Low Surface Brightness Galaxies and the Excess Faint Galaxy Population”

1994, IoA: *Faint Blue Galaxies Workshop*

“The Formation and Evolution of Low Surface Brightness Galaxies”

1993, NORDITA: *Dim Galaxies, Dark Matter, and Extragalactic Background Radiation*

Other Talks

“The Mass Profile of the Milky Way”

03/23/09, Theory Lunch, University of Maryland

“Calibrating the Baryonic Tully-Fisher Relation with Gas Dominated Galaxies”

01/06/2009: Long Beach, 213th AAS, 21333507

“The Pros and Cons of Dark Matter and Modified Gravity”

12/05/08, Rochester Institute of Technology

“Dark Matter or Gravity?”

09/17/08, APS Seniors, College Park

“Reconstructing the Mass Profile of the Milky Way”

04/28/08, Division of Dynamical Astronomy, Boulder, Colorado

- “Cosmic Flights of Fancy: Mass and the Gravity that Moves It”
04/09/08, DTM, Carnegie Institution of Washington
- “The Kinematic Signature of a Bar in the Edge-on Galaxy NGC 2683”
03/15/08, Flash talk, NOAO
- “Seeing Through Dark Matter”
02/14/08, TRIUMF, Vancouver, Canada
- “The Legend of Happy Valley — Tale of the Headless Halo”
10/31/07, Astronomy Colloquium, Penn State University
- “Does MOND remain viable?”
10/02/07, CAS seminar, Johns Hopkins University
- “The Pros and Cons of Invisible Mass and Modified Gravity”
04/13/07, Physics Department, George Mason University
- “The Mass Discrepancy Problem: New physics in matter or gravity?”
04/06/06, Physics Department, University of Rochester
- “An overview of MOND”
03/06/06, Astronomy Journal Club, University of Maryland
- “The Mass of Spiral Galaxies, Luminous and Dark”
10/03/05, Astronomy Department, University of Michigan
- “The Mass of Spiral Galaxies”
09/20/05, Club Galax, University of Maryland
- “Astronomical Evidence for and against Dark Matter and Modified Gravity”
03/29/05, Physics Department, University of Florida
- “Mass Distributions in Spiral Galaxies”
03/25/05 Astrophysics Seminar, Department of Physics and Astronomy, Rutgers University
- “Mass Discrepancies in the Universe: Dark Matter or Different Dynamics?”
04/28/04, Perimeter Institute, Canada
- “Dark Matter & Dark Energy: Gravity as We Know It?”
11/06/03, Physics Department, GMU

- “The Era of Precision Cosmology: Whither Now?”
10/03/03, College of Arts and Sciences, John Carroll University
- “Mass Distributions from Rotation Curves”
06/10/04, Galaxy Formation Workshop, Hebrew University
- “Dark Matter Halo Concentrations”
06/08/04, Galaxy Formation Workshop, Hebrew University
- “Cosmology and Dark Matter Halos”
04/22/03: Kapteyn Astronomical Institute, University of Groningen
- “Puzzles in Disk Dynamics”
04/16/03: Institute of Astronomy, University of Cambridge
- “Gravity or Dark Matter?”
02/12/03: HEP Division Seminar, Argonne National Laboratory
- “Dark Matter or Gravity?”
12/11/02: Physics Department, UMBC
- “Gravity or Dark Matter?”
11/14/02: Astrophysics group, Naval Research Laboratory
- “MOND — Modification of Newtonian Dynamics”
10/30/02: Particle physics group, Johns Hopkins
- “Gravity or Dark Matter?”
10/14/02: Astronomy Department, University of North Carolina
- “Gravity or Dark Matter?”
10/04/02: College of Arts and Sciences, John Carroll University
- “Gravity and Dark Matter”
09/18/02: Astronomy Department, University of Maryland
- “Were Primordial Dark Halos Hollow?: Decompression of Fabry Perot Rotation Curves”
05/03/02: ALTS lunch talk, Maryland Astronomy Dept.
- “Dynamical Constraints on Galaxy Formation”
03/11/02: Fermilab Theoretical Astrophysics Seminar, FNAL
- “The Rotation Curves of Low Surface Brightness Galaxies”
02/12/02: NRAO Greenbank

- “Monkey Wrenches in Gravity and Cosmology”
01/18/02: Mathematics Seminar, University of Michigan-Flint
- “The Mass Content of the Universe: Dark or Virtual?”
11/28/01: Laboratory for Physical Sciences, NSA/UMd
- “Galaxy Dynamics and the Cosmic Microwave Background: Small Bumps and Shallow Cusps”
10/03/01: Department of Terrestrial Magnetism, Carnegie Institution of Washington
- “Ripples in the Cosmic Microwave Background”
03/27/01: Junior Faculty Seminar Series, CMPS Dean
- “From Galaxy Dynamics to the Cosmic Microwave Background: A Quick tour”
03/09/01: ALTS lunch talk, Maryland Astronomy Dept.
- “Small Bumps and Shallow Cusps: CDM, MOND, and Speculations on Cosmology”
02/13/01: NASA/GSFC LHEA colloquium
- “The Second Peak: CDM or No CDM?”
01/09/2001: San Diego, 197th AAS, *BAAS*, **32**, 4, 55.06
- “Small Bumps and Shallow Cusps: CDM, MOND, and Speculations on Cosmology”
12/07/00: Rutgers, Astrophysics group colloquium
- “Gravity or Dark Matter?”
10/19/00: Astronomy Colloquium, U. Massachusetts (Amherst)
- “Gravity or Dark Matter?”
09/07/00: Gravity group, Maryland Physics
- “Cosmological Constraints from Dark Matter Dominated Galaxies”
04/20/00: Goddard Laboratory for Astronomy and Solar Physics
- “Cosmological Constraints from Dark Matter Dominated Galaxies”
11/10/99: Maryland High Energy Physics group
- “The Baryonic Tully-Fisher Relation”
11/04/99: Washington Area Astronomer’s Meeting
- “Cosmological Constraints from Dark Matter Dominated Galaxies”
11/02/99: Department of Terrestrial Magnetism, Carnegie Institution of Washington

- “Phenomenological Constraints on Galaxy Formation Theories”
03/99: Harvard CfA theory group
- “Galaxy Rotation Curves: Is Dark Matter the Answer?”
03/99: Max Planck/ESO Joint Astronomy Colloquium
- “Low Surface Brightness Galaxies as Dark Matter Laboratories”
03/99: NASA/GSFC LHEA colloquium
- “Modified Dynamics”
1998: Rutgers High Energy Physics group
- “Low Surface Brightness Galaxies and their Number Density”
1998: New Mexico State, Astronomy department colloquium
- “How Galaxies Don’t Form”
1998: Maryland, Astronomy department colloquium
- “Gravity or Dark Matter?”
1998: Columbia, Astronomy department colloquium
- “Gravity or Dark Matter?”
1998: Case Western Reserve, Astronomy department colloquium
- “Gravity and Dark Matter”
1997: Wesleyan, Astronomy department colloquium
- “How Galaxies Don’t Form”
1997: Rutgers, Astrophysics group colloquium
- “Gravity or Dark Matter?”
1997: NRAO Charlottesville
- “Low Surface Brightness Galaxies”
1997: SUNY at Stony Brook, Astronomy department colloquium
- “Low Surface Brightness Galaxies”
1997: Fermilab
- “Spiral Galaxy Evolution: Complementary Approaches at High and Low Redshift”
1997: Space Telescope Science Institute
- “Low Surface Brightness Galaxies”
1997: Department of Physics, Stanford University

“Gravity or Dark Matter?”

1997: Department of Physics and Astronomy, University of Pennsylvania

“Faint Galaxy Counts and Local Galaxy Gas Fractions: an Evolutionary Conundrum”

1997: Aspen Winter Astrophysics Conference

“Baryon Fractions in Low Surface Brightness Galaxies”

1997: Aspen Winter Astrophysics Conference

“Reverse Baryon Catastrophe in Extremely Dark Matter Dominated Galaxies”

1997: Toronto, 189th AAS, *BAAS*, **28**, 4, 84.03

“Gravity or Dark Matter?”

1996: Department of Terrestrial Magnetism, Carnegie Institution of Washington

“The Formation and Evolution of Low Surface Brightness Galaxies”

1996: Yale University

“Gravity or Dark Matter?”

1996: Pontificia Universidad Catolica de Chile

“The Curtis Schmidt Very Low Surface Brightness Galaxy Survey”

1996: CTIO/NOAO

“Constraints on Dark Matter from Low Surface Brightness Galaxies”

1996: STScI

“The Physical Properties of Low Surface Brightness Galaxies”

1995: Department of Terrestrial Magnetism, Carnegie Institution of Washington

“Relations between Luminous and Dark Mass Distributions in Disk Galaxies”

1995: IFACS, NASA GSFC

“The Physical Properties of Low Surface Brightness Galaxies”

1995: University of Virginia

“Rotation Curves of Spiral Galaxies as a Function of Density”

1995: Cambridge, 36th Herstmonceux Conference, *Gravitational Dynamics*

“The Faint Galaxy Problem”

1995: Institute of Astronomy, University of Cambridge

“Things as a Function of Surface Brightness”

1995: Institute of Astronomy, University of Cambridge

“Low Surface Brightness Galaxies in a Cosmological Context”

1995: University of Oxford

“The Physical Properties of Low Surface Brightness Galaxies”

1995: Queen Mary & Westfield College, University of London

“The Physical Properties of Low Surface Brightness Galaxies”

1994: University of Durham

“The Physical Properties of Low Surface Brightness Galaxies”

1994: Kapteyn Astronomical Institute, University of Groningen

“The Number Density of Low Surface Brightness Galaxies”

1993: Washington, D. C., 183rd AAS, *BAAS*, **25**, 1384

“The Physical Properties of Low Surface Brightness Galaxies”

1993: College of Cardiff, University of Wales

“The Physical Properties of Low Surface Brightness Galaxies”

1993: Instituto Astrofisica de Canarias

“The Formation and Evolution of Low Surface Brightness Galaxies”

1992: Institute of Astronomy, University of Cambridge

“The Constancy of the IMF as a Function of Metallicity”

1992: Kapteyn Institute, University of Groningen

“Low Surface Brightness Galaxies”

1991: Atlanta, 179th AAS, *BAAS*, **23**, 1444

“Low Surface Brightness Galaxies”

1991: KPNO/NOAO

“Models of Giant Extragalactic HII Regions”

1990: University of Michigan

“The Shell Galaxy Arp 230: A Merger Induced Starburst”

1989: University of Michigan

Public Lectures

“Gravity and the Fate of the Universe: Mostly Dark, or all Bright?”

03/25/09: MIT club of NE Ohio

“Light in the Darkness: The Role of Mass, Energy, and Gravity in Modern Cosmology”
12/09/04: Cleveland Museum of Natural History

“Distinguishing Cosmologies: Arguments for and Against the Standard World Model,
Then and Now”
10/03/03: FYS, John Carroll University

“Gravity, the Universe, and Dark Matter”
05/13/03: Society for Industrial and Applied Mathematics

“Where is Most of the Universe Hiding? The Missing Mass Problem”
03/05/02: Smithsonian Associates Lecture Series, Smithsonian Institution

“Collective Denial and Individual Responsibility: Galileo’s Daughters”
10/04/02: FYS, John Carroll University

“Dim Galaxies shed New Light on Old Problems”
05/02/00: Public talk, Space Telescope Science Institute

Teaching Experience

Courses

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|---|-------------|
| HONR 219Q: Perspectives on the Cosmos: From the Ancient Philosophers to Modern Science | Spring 2009 |
| ASTR 100: Introduction to Astronomy | Fall 2008 |
| HONR 219Q: Perspectives on the Cosmos: From the Ancient Philosophers to Modern Science | Spring 2008 |
| ASTR 620: Galaxies | Fall 2007 |
| ASTR 121: Introductory Astrophysics II — Stars and Beyond | Spring 2007 |
| ASTR 120: Introductory Astrophysics I — Solar System | Fall 2006 |
| ASTR 121: Introductory Astrophysics II — Stars and Beyond | Spring 2006 |
| ASTR 120: Introductory Astrophysics I — Solar System | Fall 2005 |
| ASTR 100: Introduction to Astronomy | Spring 2003 |
| ASTR 620: Galaxies | Fall 2003 |
| ASTR 100: Introduction to Astronomy | Fall 2002 |
| ASTR 688C: Observational Cosmology | Spring 2002 |
| ASTR 620: Galaxies | Fall 2001 |
| ASTR 100: Introduction to Astronomy | Spring 2001 |
| ASTR 100: Introduction to Astronomy | Fall 2000 |
| ASTR 220: Collisions in Space | Spring 2000 |
| ASTR 220: Collisions in Space | Fall 1999 |
| ASTR 688S: Observational Cosmology | Spring 1999 |

See <http://www.astro.umd.edu/~ssm/courses.html> for further information.

Mentoring

Ph.D. Students

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|--|------|
| Rachel Kuzio <i>High Resolution Optical Velocity Fields of Low Surface Brightness Galaxies and the Density Profiles of Dark Matter Halos</i> | 2007 |
| Ji Hoon Kim <i>Star Formation History of Low Surface Brightness Galaxies</i> | 2007 |
| Jim Marshall <i>A Large Survey for Very Low Surface Brightness Galaxies</i> | 2004 |
| Erwin de Blok <i>The Properties and Evolution of LSB Galaxies</i> | 1997 |

Undergraduates

| | |
|--|------|
| Cathy Caviglia <i>Galaxy Simulations in the Modified Dynamics</i> | 2009 |
| Matt Zagursky <i>Stellar Velocities from 2Mass</i> | 2009 |
| David Stark <i>The Baryonic Tully-Fisher Relation from Gas Rich Galaxies</i> | 2008 |
| Carolyn Crow <i>Interacting Dwarf Galaxies</i> | 2007 |
| Dan Schwartz <i>Very Faint Local Galaxies</i> | 2006 |

| | |
|--|------|
| Matt Parlette <i>Large Scale Structure Formation</i> | 2004 |
| Mia Bovill <i>Stellar Populations in an LSB Galaxy</i> | 2004 |
| Mike Barker <i>Cosmology from Rotation Curves</i> | 2001 |
| Anil Kochhar <i>Faint Blue Galaxies</i> | 2000 |

Funding

“Analysis of a Survey for Ultra Low Surface Brightness Galaxies”

\$141,001 from 15 Feb 1999 to 31 Jan 2002

NSF Extragalactic Astronomy and Cosmology Program: AST9901663

“Globular Clusters of Low Surface Brightness Galaxies”

\$18,209 from 1 Apr 2000 to 31 Mar 2003

NASA Space Telescope Science Institute: NAS526555

“Discovery and Dynamics of Very Low Surface Brightness Disk Galaxies”

\$341,001 from 1 Aug 2002 to 31 July 2005

NSF Extragalactic Astronomy and Cosmology Program: AST0206078

“Mass Profiles of Spiral Galaxies”

\$122,377 from 15 Mar 2003 to 14 Mar 2006

NASA Astrophysical Data Program: NAG513108

“High Resolution Velocity Fields of Low Surface Brightness Galaxies”

\$340,237 from 15 July 2005 to 30 June 2009

NSF Extragalactic Astronomy and Cosmology Program: AST0505956

“REU supplement to High Resolution Velocity Fields of Low Surface Brightness Galaxies”

\$12,450 from 22 May 2008 to 30 June 2009

NSF Extragalactic Astronomy and Cosmology Program: AST0505956

“The Spitzer Tully-Fisher Relation”

\$31,401 from 1 July 2008 to 30 June 2010 (PI share \$23,401)

NASA Spitzer Science Center (Cycle 5 Observations)

“Star Formation and the Tully-Fisher Relation”

\$25,000 from 1 July 2008 to 30 June 2010 (PI share \$19,000)

NASA Spitzer Science Center (Archival)

References

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